

PSYCHOSOCIAL FACTORS ASSOCIATED WITH SMOKING BEHAVIOR AMONG SECONDARY SCHOOL ADOLESCENTS IN IBADAN METROPOLIS

Taiwo, A.O, Olapegba, P.O. and Adejuwon, G.A.

Department of Psychology, Faculty of the Social Sciences, University of Ibadan, Ibadan, Nigeria

E-Mail: bolataiwo31@yahoo.com

ABSTRACT

The use of tobacco among adolescents has been recognized as prominent problem behaviour in recent years. This study investigated the psychosocial factors associated with smoking behaviour among secondary school adolescent smokers (N=200) in Ibadan metropolis. One hundred and forty six (73%) were males while fifty four (27%) were females.

The study is a cross-sectional survey which adopted the ex post facto research design. Each participant was administered a questionnaire consisting of the demographics, self esteem, locus of control, index of family relations and smoking behaviour scale. Only student smokers available at the high risk areas were selected to participate in the study.

Result indicated that of all the psychosocial factors, only self esteem and family relations had individual significant contribution to smoking behaviour of the adolescents ($B = -.60, P < .05$; $B = -.43, P < .05$ respectively) while other factors (locus of control, parental education, parental occupation, religious affiliation, and sex) did not. However, all the psychosocial variables jointly significantly predicted adolescent smoking behaviour contributing 36% of the variance ($R^2 = 0.36, p < .05$). The regression analysis also showed that locus of control and self-esteem alone jointly significantly contributed 32% ($R^2 = 0.32, p < .05$) while Parental occupation and education, family relationship as well as sex jointly contributed 0.8% ($R^2 = 0.08, p < .05$) to the explanation of the variance observed in smoking behaviour among adolescents. Further analysis showed that adolescent with low self esteem engaged more in smoking than those with high self esteem ($t_{(198)} = 7.9; p < .0001$).

Findings suggested that psychological factors other than social factors are more serious predictors and maintenance factor of smoking behaviour among adolescents. It is thus recommended that personnel working on smoking behaviour control and management should seriously consider psychological factors such as self esteem and locus of control, as well as some social factors such as family relationship while packaging their interventions.

INTRODUCTION

The period of adolescence has been associated with the upward move toward greater independence from parents and the need to establish one's own values, as well as personal and sexual identity (Newman 1971). It is also associated with the acquisition of skills and competencies needed to compete in adult society. During this period, young people may be attracted to different

types of behaviour, whether social or antisocial. These behaviours could either be as a way of asserting their independence of the adult world and its rules, or as a way of gaining the attention and respect of peers, or even as a way of compensating for limited personal competencies. For instance, Newman (1971) found that smokers generally perceived themselves as not meeting the expectations of their parents. Yang, Ma, Chen, Brown, Taylor and Samet (2004) noted that most adolescents frequently experiment with new behaviours, but don't often take the long term consequences into serious consideration. Research has shown that adolescence is a stressful period and the transition from childhood to adolescence has been characterized as discontinuous and demanding (Erikson, 1968; Lawson, 1994). One of such behaviour that adolescents are easily attracted to is cigarette/tobacco smoking. Over the past decade, cigarette smoking among adolescents has emerged as a major social issue. Freeman (2003) described cigarette smoking and other drug abuse practices among youths and adolescents as one of the biggest challenges facing humanity in the 21st century. In Nigeria, Megafu (2002) noted that the data of World Health Organisation (WHO) and the World Heart Foundation revealed that 22.1% of school youths aged between 12 to 17 years use tobacco. Aita (1997) a United Nations correspondent has however earlier noted that people who engage in smoking and got hooked easily are younger people. The researcher noted that every year, the age at which people start smoking reduces.

Cigarette (tobacco) has been recognized as an abused drug and a big challenge to health workers worldwide (Freeman, 2003). Researchers were of the opinion that tobacco smoking is an important public health problem worldwide (Kocabas, Burgut, and Bozdemirm 1994; Saatci, Inan, Bozdemir, Akpinar and Ergun 2004). Center for Diseases Control and Prevention (CDC, 2000c) noted that most adolescents who smoke cigarettes continue to do so into adulthood, thus increasing their risks of lung cancer more than if they had started smoking later in life. Some studies had indicated that young smokers manifest early signs of cardiovascular diseases (CDC, 2000c; Lawson, 1994). Centres for Disease Control and Prevention (CDC, 2000c) re-emphasised the estimate of smokers worldwide which was placed at about one billion and who smoke over six trillion cigarettes per year. Tobacco use is also recognized as the most significant cause of

preventable morbidity and mortality. The use of tobacco contributes to over 450,000 deaths annually in the U.S.A (Centre for Disease Control and Prevention, 2000a and b) as well as 800,000 annually in China (Yang, Ma, Chen, Brown, Taylor and Samet, 2004). Cigarette smoking has also been reported to be the leading cause of death in many other countries of the world (Kann, Brener, and Allensworth, 2001, Levin, 2003 and Yang, Ma, Chen, Brown, Taylor and Samet, 2004) including Nigeria (Megafu, 2002). Most tobacco products accommodate the presence of nicotine, a chemical substance that has been found to be capable of producing complicated effects (Schelling, 1992). Research has also shown that this chemical substance has strong stimulating effects on heart rate and blood pressure. It operates by directly stimulating nicotinic receptor, which is a type of acetylcholine receptor. This receptor is found both in the CNS and at the nerve-muscle junction of skeletal muscles. Apart from this, nicotine itself also indirectly stimulates dopamine receptors (Stolerman, 1991). In the recent times, the chemical is smoked in cigarettes, cigars and pipes and used as snuff or chewed in gum (also called smokeless tobacco), both of which are increasingly popular in many part of the world (Centres for Diseases Control and Prevention, 2000a). The question that could readily come to mind is why are people (especially adolescents) smoking cigarette despite its health hazards?

Some psychological and social factors have been identified as predictors of cigarette smoking behaviour among adolescents. Several social factors ranging from religious affiliation to age, parental education, sex, parent's occupation, as well as family relations have been implicated as capable of predicting cigarette smoking behaviour of adolescents. For instance, Spein, Sexton and Kvernmo (20001) reported a significant influence of religious affiliation on smoking behaviour among adolescents. These authors carried out a study which identified predictors of smoking behaviour among indigenous Sami adolescents and non-indigenous peers in North Norway. They found Kaestadian Christian affiliation increasing the prevalence of experimental smoking among the Sami students. Another social factor implicated for cigarette smoking is parental education. A study conducted in Massachusetts showed that parents with lower income and/ low education level were more likely to have teenage children who smoked than higher paid better-educated parents

(Levin, 2003). Findings on these factors were however not conclusive. For instance, Saatci, Inan, Bozdemir, Akpinar and Ergun (2004) found a contrary result from their study. They found that each step down the parents' education ladder increases the risk of their adolescent child smoking. It is therefore unclear whether parents' education level relates positively or negatively with adolescent smoking behaviour. Another variable of interest in the literature implicated for its ability to predict cigarette smoking behaviour among young people is family relation. In a research carried out by O'Loughlin, Paradis, Renand, and Gomez, (1998), they found that family relationship was a strong predictor of smoking initiation and continued smoking among elementary school children in Montreal. Family relationship factor such as information communication, interpersonal relationship as well as lack of parental support were other family variables earlier implicated in the literature (Conrad, Flay and Hill, 1992; Jackson, Henriksen and Dickinson, 1997). Family relationship as measured by index of family relation is examined in this current study. Age is another social factor that has been implicated for adolescents' smoking behaviour. The literature data showed that the proportion of adolescents who smoke increases with age (Bilir, Dogan and Yildiz, 1997; Zang, Wang, Zhao and Vartiainen, 2000; Gorman, 2003). Several other studies have also found predominance of male adolescents engaging more in tobacco smoking than females (Saatci, Inan, Bozdemir, Akpinar and Ergun, 2004). Nevertheless, most of the studies cited above were not carried out in Nigeria neither were they findings from the same study. Investigating whether these factors will predict smoking behaviour of the adolescents who are already smokers is therefore not out of place.

Some psychological factors have also gained popular support from literature as risk factor for cigarette smoking behaviour among adolescents. Self esteem has been found to be significantly related with cigarette smoking behaviour of adolescents (Jessor and Jessor, 1977; Johnston, O'Malley and Bachman, 1987; Murphy and Price, 1988; O'Donohue, 1990; Wilkinson and Abraham, 2004). Trend of the findings showed that adolescents who smoke often possess low self-esteem and low expectations for future achievement (Johnston, et al, 1987; Wilkinson and Abraham, 2004). Locus of control, which is another personality variable, concerns the degree to which individuals

believe that he/she controls events. It has been argued that locus of control will be an important factor to examine while explaining smoking behaviour of adolescents given the fact that the risks associated with smoking have often been discussed and announced (Clarke, MacPherson and Holmes, 1982). Bunch and Schneider, (1991) established in their study that there are certain smoking specific locus of control that characterize smokers. They found that individuals often maintain a distinct locus of control for smoking rather than having a general expectation for control. In another study, Crisp and Barber, (1995) examined the relationship between risk-taking behaviour and locus of control. The results showed that those with an internal locus of control knew they were taking risks in the decisions they made, while those with an external locus of control showed a greater tendency to believe that they were invulnerable to such risks. The extent to which this might be true for adolescent smokers remains a puzzle which this current study attempt to provide explanation.

Generally, Freudian theorists view tobacco smoking as resulting from some unconscious tendencies, particularly self destruction, oral fixation or latent homosexuality. The Adlerian theorist on the other hand proposed that tobacco smoking represent a struggle for power or compensation for deficiency since deficiency such as low academic performance, low self esteem and inferiority complex has been observed to be common with tobacco smokers. A more general psychoanalytic view is that tobacco smoking is the result of an inner conflict between dependency drives and aggressive drives. Although failure to meet one's internal expectation is difficult to measure, it often results in low self esteem, which has been observed more in smoking teenagers than in non smoking ones (Murphy and Price, 1988; Wilkinson and Abraham, 2004). Since failure often results in diversion of efforts from assigned tasks, it is little wonder that teenage smokers seem to experience more failure in school than do non-smokers.

The main purpose of this study is to examine whether psychosocial factors such as self esteem, locus of control, religion, sex, parent's level of education and occupation, as well as family relationship will significantly (jointly and/or individually) predict cigarette smoking behaviour of the secondary school adolescents' smokers.

METHOD

Design

This study adopted an ex post facto research design. Independent variables in the study are sex, self esteem, parent's level of education and occupation, locus of control, family relationship, and religion while the adolescent's score on cigarette smoking behaviour serves as the dependent variable.

Participants

Two hundred (200) adolescent smokers from five secondary schools participated in this study. A purposive selection technique was used to select only adolescent smokers found around smoking high risk areas and who gave their consent to participate after initial contact. The schools are Methodist High School, Bodija; Emmanuel College, U.I.; Oba Akinbiyi High School 2 Orogun, Orita Aperin High school and Adekile Grammar school all from Ibadan metropolis. The sample consisted of 146 (73%) males and 54 (27%) females. 128 (64%) of them were of Christian religion affiliation while 72 (36%) were of Islamic religion affiliation. Onset age of cigarette smoking ranges from 13-19 years with the average age at 15 (SD = 3.2; variance =10.6).

Instrument

The questionnaire used for data collection was divided into five sections. Section A consists of demographic variables which include sex, age, religion, family type, level of education, state of origin, parental educational status and parental occupational status. Section B is the 15-items self esteem scale developed by Adanijo and Oyefeso (1986) in Nigeria. It is in a five-point likert type response format ranging from 1=strongly Disagree to 5 = strong agree. The authors reported reliability coefficient of 0.92 among high school students, with an internal consistency coefficient of 0.79 among bank officials.

Section C is a 17-items scale designed by Craig, Franklin and Andrews (1984) to measure locus of control. The scale has five Likert-format response options ranging from 1= strongly disagree to 5= strongly agree. The authors reported that the scale has satisfactory internal reliability and possess good test-retest reliability. A reliability coefficient of 0.75 was reported for the scale. The scale has also shown to be independent of age, sex and social desirability, and to distinguish clinical disorder from normal non-clinical subjects. Higher score indicates high internality while lower score indicates high externality.

Section D taps information regarding the problems of interpersonal relationship in the family as measured by Index of Family Relation Scale designed by Hudson (1982). The scale has 25 items with a reliability coefficient alpha of 0.88 and the response options ranging from 5 = strongly agreed to 1 = strongly disagree. High score indicate presence of interpersonal relationship problem within the family of the respondent while low score is an indication of normal family relationship.

Section E was a scale designed by the researchers to measure current smoking behaviour of the adolescents. The 20-items questionnaire was designed to measure knowledge of cigarette smoking risks, habit of smoking and readiness for quitting. Items for the scale were first generated from an in-depth interview carried out for 20 adolescent smokers (ages between 14 and 19) in Bodija area. The response option is in Likert format of strongly agree to strongly disagree. High score on the scale indicates heavy smoker who is not interested in a change for now while low score indicates a liberal smoker who tends towards readiness to quit. The standardized item alpha of 0.88 and reliability coefficient alpha of .77 were generated for the scale.

Procedure

A visit to some selected secondary schools was first embarked upon to identify places around the schools where cigarettes are sold. After identifying such areas, with the cooperation of the sellers, researchers went, sitting with them waiting for target respondents. As soon as they arrived to buy cigarettes, they were engaged in discussion and their consent were subsequently obtained after which questionnaires were then given to them to fill here and then. This same procedure was followed for all the students from Methodist high school, Bodija, Emmanuel College, U.I., Oba Akinbiyi High school 2, Orogun, Orita Aperin High school and Adekile Grammar school all from Ibadan metropolis. Names of respondents or anything that could make their identity known were not obtained. The whole exercise of data collection lasted for 3 weeks.

Results

The main objective of this study is to examine whether psychosocial factors such as self esteem, locus of control, religion, parent's level of education and occupation, as well as family relationship will significantly predict cigarette smoking

behaviour of the secondary school adolescent smokers individually and/or jointly. A multiple regression analysis was employed to examine the joint and individual contribution of the variables to the prediction of cigarette smoking behaviour of the adolescents. Family (parent's education, parent's occupation and family relationship) and personality (locus of control and self-esteem) factors were so grouped and a F-test was employed to examine the domain effect. T-test for independent sample was employed to examine whether sex, religion, locus of control, and self-esteem will significantly determine adolescents' smoking behaviour. The results of these exercises were presented in the tables below. Table 1 (a and b) shows the result of multiple regression analysis. Part (a) presents the beta weight and the relationship of each of the variables to cigarette smoking behaviour while part (b) shows the result of the F-test analysis.

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Table 1. Multiple regression and F-test analysis showing the significant predictors and percentage of prediction of each domain to cigarette smoking behaviour among adolescents

(a) - Psychosocial factors.				
Variable	Standardized Beta	SEB	T	P
Self esteem	-.60	.09	-6.9	<.05
Locus of control	.07	.10	.68	n.s
Parent's education	.68	.59	1.2	n.s
Parent's occupation	-.62	.48	-1.3	n.s
Family relationship	-4.3	1.6	-2.6	<.05
Religion	-.05	1.7	-.03	n.s
Sex	1.1	1.7	.61	n.s
(b) -F-test				
Variable /domains	Adjusted R ²	F	P	
Multiple regression (Psychosocial factors)	0.36	13.6	<.05	
Parental factors domain	0.09	9.7	<.05	
Personality factors domain	0.32	47.4	<.05	

The table above showed that parental occupation, sex, as well as parents' levels of education did not significantly contribute to the observed variation in the adolescents' cigarette smoking behaviour, although, the beta weight suggested that males are more likely to be smokers ($B= 1.1$; $t = 0.6$, $P>n.s$). Family relationship on the other hand had a significant contribution to the observed variation with results showing a negative relationship between the two variables ($B = -4.3$; $t = -2.6$; $P<.05$). Of the two personality variables, (Locus of control and self-esteem), only self-esteem had significant contribution to the observed variation in the

explanation of cigarette smoking behaviour of the participants with the result showing a negative relationship ($B = -.60$; $t = 6.9$; $P < .05$).

The table further indicated that all the psychosocial factors jointly significantly predict cigarette smoking behaviour of the adolescents contributing 36% ($R^2 = 0.36$; $P < .05$) to the explanation of the observed variation (table 1b). The social factors such as parent's level of education, parents occupation and family relationship jointly significantly contributed 9% ($R^2 = 0.09$; $P < .05$) while the psychological (personality) factors contributed 32% ($R^2 = 0.32$; $P < .05$) to the explanation of variation across cigarette smoking behaviour among the adolescents.

Table 2: The summary result of the t-test for independent sample analysis showing the influence of self-esteem, locus of control, sex and religion on adolescents' cigarette smoking behaviour.

Variables	N	Mean	SD	SE	Df	T	P
Self-esteem							
Low	91	70.65	13.3	1.4	198	0.76	<.0001
High	99	57.8	0.94	0.9			
Locus of control							
Internal	76	62.7	11.7	1.3	198	0.76	>.05 (n.s)
External	124	64.2	13.9	1.3			
Sex							
Male	146	63.7	13.0	1.1	198	0.19	>.05 (n.s)
Female	54	63.4	13.4	1.8			
Religion							
Christianity	128	64.9	12.5	1.1	198	1.91	>.05 (n.s)
Islamic	72	61.3	13.9	1.6			

The result of the F-test reported in table 1(b) above confirmed the greater influence of the personality factors on cigarette smoking behaviour.

In order to examine the degree of influence of each of the variables on cigarette smoking behaviour, t-test for independent samples was carried out on the participant's self-esteem, locus of control, sex, and religion.

Table 2 above substantiates the earlier findings from the regression analysis. Sex, Locus of control, as well as religion did not have significant influence on cigarette smoking behaviour of the participants. But the result indicated that adolescents with low self-esteem significantly scored higher on the cigarette smoking behaviour compared to those with high self-esteem ($t_{(198)} = 7.9$; $p < .05$).

DISCUSSION

Findings from this study showed that only self-esteem and family relations significantly predicted cigarette smoking behaviour among the adolescents (table 1 above). The result also showed that self-esteem was significantly but inversely related with cigarette smoking behaviour ($B = -.60$). This implies that the higher the self-esteem, the lower the smoking behaviour of the adolescents. Further analysis carried out showed that adolescents with low self-esteem significantly engaged more in smoking and are not ready to quit than adolescents with high self-esteem (table two). This finding is consistent with literature. Self-esteem has been consistently identified as a significant factor in cigarette smoking behaviour of adolescents (Jessor and Jessor, 1977; Murphy and Price, 1988; O'Donohue, 1990 and Wilkinson and Abraham, 2004). Some other researchers have found adolescents who smoke to be low in self-esteem and with low expectation for future achievement (Johnston, O'Malley and Bachman, 1987). O'Loughlin, Paradis, Renand, and Gomez, (1998) had also found family relation significantly influencing cigarette smoking behaviour of the adolescents.

Nevertheless, a combination of all the variables was found significant. The multiple regression exercise carried out showed that all the variables jointly explained 36% of variance in adolescent's smoking behaviour in this study (table 1b). Earlier researchers have reported similar findings. Several studies implicated the combination of psychosocial variables in the

prediction of smoking behaviour among adolescents (Blistein, Robinson, Murray, Klesges and Zbikowski, 2003; Griffin, Bretwin, Scheier, Doyle and Williams, 2003). Wilkinen and Abraham (2004) found a combination of psychosocial variables such as extraversion, self-esteem, parental support and parental control as well as gender jointly explaining 56% of variance in smoking among adolescents. Tyas and Pederson (1998) have earlier called for integrative, theoretically informed models of the hundred of associations between psychosocial measures and adolescent smoking. The researchers opined that an integrative model will explain the antecedents of adolescents smoking behaviour more appropriately than single factor model.

Result of the F-test carried out further confirmed the reliability of the multiple factor model but revealed that the combination of personality factors had the highest influence on the adolescent' cigarette smoking behaviour compared with combination of the social variables (table 1b). Several other researchers have reported similar findings in which psychological factors showed highest level of prediction compared to other factors (for instance, Jessor and Jessor, 1977; Johnston, Clarke, MacPherson and Holmes, 1982, O'Malley and Bachman, 1987; Murphy and Price, 1988; Bunch and Schneider, 1991; Wilkinson and Abraham, 2004). While the current study focused on only self-esteem and locus of control (personality factors) other past studies have examined the influence of factors such as self-efficacy, social competence, introversion-extraversion, etc and have found them significantly predicting cigarette smoking behaviour at one time or another. A further study which will establish the psychological profile of the adolescent smokers is therefore implicated.

Conclusion and recommendation

It could then be concluded that personality factor such as self-esteem should not be de-emphasised when packaging attitude change intervention for adolescent smokers. This does not mean that cognitive aspect like locus of control should be overlooked when such interventions are packaged, but more emphasis should be placed on boosting the adolescents' self-esteem as well as their self-competence. Interpersonal relations within the family should also not be de-emphasised in the attempts to encourage adolescents to quit smoking. The fact that

family relation was found predicting cigarette smoking behaviour of adolescents in this study suggested that adolescent smokers might benefit from family therapy where interpersonal problem solving techniques could be taught to the family members. Family members (especially the parents) may also need to be encouraged to model behaviour that will promote cessation from cigarette smoking and reinforce any act that shows some levels of quitting.

Activities in the secondary schools should also include smoking cessation programmes. Sales of cigarette around the school premises should be discouraged as much as possible. It is suggested that secondary school authorities should embark on some impromptu checking round their school premises to discourage students from engaging in cigarette purchase at least during school hours. Any student caught during such exercises should however not be castigated, but should rather be enrolled in cigarette cessation programme organized by the school. Since it is generally agreed that the young ones are more amenable to change than adults, early intensive cigarette smoking control programmes will be more beneficial and probably record better success than adult cigarette smoking control programmes. With the intensity of health hazards cigarette smokers are exposed to, further studies at both national and international levels, should be embarked upon to uncover the root causes of the smoking habits of adolescents. Early preventive measures should also be put in place before the lives of our future leaders are ruined through cigarette smoking.

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