

## Antecedents to Smoking Behaviour among Male Adolescent Students in South East Region, Nigeria

Nwankwo Benjamin Osondu, C. Abanobi Okwuoma and N. Amadi Agwu

Department of Public Health Technology, Federal University of Technology, Owerri, Nigeria

**Abstract:** This study was conducted among 2010 randomly selected adolescents in five states of the south east part of Nigeria. Through a questionnaire instrument, adolescents were asked to respond to issues relating to their smoking behaviour in relation to type of domicile. Result showed that many (83.6%) of the adolescents sampled had smoked either now or before. Majority (71.43%) started smoking at senior class. While, many (95.24%) smoked between 1-10 sticks daily, majority (74.4%) smoked more during relaxation or when stressed or depressed. Many (77.4%) said peer group was their major source of smoking behaviour. Majority (56.6%) preferred Benson and Hedges brand of cigarette. In addition, many (59.5%) smoke because their friends influenced them. The study found strong association between prevalence rate of smoking behaviour; major source of smoking behaviour; time smoking started and type of domicile ( $p < 0.05$ ). The study recommended a longitudinal design that can identify both psychological and social environmental determinants of smoking among this group for a reliable development of smoking prevention and cessation interventions.

**Key words:** Smoking, antecedents, adolescents, behaviour, south east, Nigeria

### INTRODUCTION

Smoking, the man-made epidemic exists in almost every Country of the world today and is accompanied sooner or later by a host of diseases and conditions, which threaten health and shorten life (Nwankwo, 2006a). The third world is a particular target of unscrupulous advertising since there are no restrictions on content or media. In most of the developing countries like Africa, smoking is associated with prestige and sophistication. In African societies, there were signs of smoking even before the advent of European culture in the continent. However, Africans smoked dried mango, guava and paw-paw leaves, which were mixed with other materials (Nwankwo, 2006a). There are so many myths surrounding smoking, for example tobacco is said to be of much help in effecting miraculous healing which might not be unconnected with the names ascribes to the powers of tobacco such as divine tobacco, herba panacea and herba sancta. African societies believed that smoking drives away evil spirits and snakes from smoking vicinities.

Statistics on smoking are getting ever more frightening, especially for African and third world countries. According to the World Health Organization (Nwankwo, 2006a) estimates, at least 3 million deaths now occur throughout the world annually as a result of

tobacco consumption and this casualty rate representing one death in every 13 sec is projected to double by the year 2010.

The purpose of this study was to identify the factors associated with cigarette smoking behaviour among students in selected secondary schools in the southeast geo political zone of Nigeria. To this end the study sought among other things to establish the prevalence rate of cigarette smoking among the students; identify the predominant type of cigarette being smoked amongst students; know the factors associated with the prevalence of cigarette smoking among the study subjects; to ascertain the association between the prevalence rate, major source of smoking behaviour, time of smoking behaviour and type of domicile. It is hoped that this study will provide base line information on the factors associated with cigarette smoking as well as guiding positively the formation of good health habits among adolescents and secondary school students in this area of study and beyond.

Of all age groups, students and adolescents constitute a greater proportion of users of this item (Ifudu and Ezie, 2003). Many reasons have been attributed to its use ranging from its pleasing narcotic effect, assumption of temporary relief from worry, fatigue, hunger and irritability. In most cases long period of use leads to

habit formation, indulgence and lack of will power to even desire to break it (Akolawole, 1993). The teenage years are critical times, especially in the life of a cigarette smoker which poses a critical public health problem (Centers for Disease Control, 1997; Emmons *et al.*, 1998; Gfroerer *et al.*, 1997).

The prospects are great that young smokers will continue to smoke into college and adult life. Boys smoke somewhat earlier and heavily than girls (Barbara, 1993). Another study, Doll (1990) stated that smoking habits generally begin in the early teens. Peer pressure continues to be a major factor (Nwankwo, 2006a; Green and Green, 1991). Teenagers often start smoking in imitation of the older people who smoke. Elegbeleye (1997) asserted that peer smoking is clearly related to peer influence which is extremely important in the development of smoking habit, particularly during the teenage and college years. This may continue if it is an accepted and admired habit within their social group. Ekpu (1989) and Wechsler *et al.* (2001) observed that if kids failed to pick up habits through association, the advertisement agencies were willing to lend them a helping hand.

Some people use cigarette as temporary stimulants, remedy to frustration or to relieve fatigue though the effect is empirical (Ekpu, 1989). Cigarette smoking is implicated as an important factor in the development of various cancers viz-lungs, larynx, bladder, esophagus and oral cavity (Ewuzie, 2005). The list though endless also includes still birth and low birth weight among smoking mothers, shortened life expectancy or peptic ulcer (Nwankwo, 2006a). Tobacco smoking has an effective way of destroying one's mental capabilities to an extent that one's mental standards cannot be met (Nwankwo, 2006b). At school, smoking is considered by boys as sign of manhood or status. This transient flirtation with smoking may later become a permanent habit, unless quickly checked (Christie-Smith, 1999; Hines *et al.*, 1998). Young smokers who experiment with tobacco sometimes switch over to Indian hemp and alcohol (Schorling *et al.*, 1994). They look for kicks but quite often ended up kicked (Nwankwo, 2006a).

Mortality and morbidity rates are high among smokers as evidenced, especially through respiratory and cardio-vascular diseases among smokers. The chemical components of smoke-tar, carbon monoxide, nicotine, etc (Nwankwo, 2006a; Wynder and Hoffmann, 1991), are sufficient to produce an extremely dense respiratory environment more concentrated than the air pollution of major urban centres (Albert, 1991). The result includes shortness of breath on exertion and inability to perform strenuously, increasing the work load of the heart and the narrowing of the peripheral blood vessels and this in turn

leads to lowering of skin temperature, etc (Nwankwo, 2006a). Non smokers are affected also by the second hand smoke (main or side stream) spewed forth in the environment which contains appreciable if not twice as much amounts of the chemical compounds earlier listed (Nwankwo, 2006a; Wynder and Hoffmann, 1991). For this group, possible side effects include eye, nose irritation, cough, nausea, dizziness and even death (Lynn, 1991).

On intention and reason, the development of smoking may be a gradual process. Buying cigarettes even for another person is an early part of smoking behaviour. Inhaling the smoke and increasing consumption gradually follow and eventually people begin to smoke more openly in front of others (Goddard, 1990). Studies concerning the transition from experimental to regular smokers have identified predictors such as modeling and approval by peer group an independently risk taking personality, exaggerated prevalence estimates and attitudes and intentions favourable to smoking (Chalton and Blair, 1989).

Data from the 1989 Teenage Health and Lifestyles survey of secondary school children in England reveal that young people are more likely to be smokers if other people at home smoke. Siblings seem to be more influential than parents in this respect. When both parents smoke, children are more than twice more likely to be regular smokers than if neither parent smokes (Doll, 1990). Socio economic status is also noted as an influence (Nwankwo, 2006a). Further research findings, revealed that emotional stress is associated with heavier smoking among smokers, rather than with starting to smoke by non-smokers (Nwankwo, 2006a, b). Social environment is a significant factor, in determining whether a person will smoke or will continue to smoke. For example, the offering and accepting of tobacco just like alcohol is important in the development of personal relations in business and in private life. However there seems to be lack of systematic cross-sectional research to compare juvenile smoking initiation under differing nation's conditions. The factors associated with the problem among other things have not fully been investigated in some Nigeria localities such as the southeast region, hence this study.

## **MATERIALS AND METHODS**

The survey design was adopted for this study. This design was chosen because it helps to make description, analysis and interpretation of conditions that exist in any study field while at the same time helping to reveal the current conditions acceptability or otherwise of the status as well as the need for changes (Nworgu, 1991). The

setting for this study is the south east part of Nigeria comprising of 5 states namely-Abia, Anambra, Ebonyi, Enugu and Imo states.

A total of 2010 male adolescents, randomly selected from 4 schools each from the 5 states formed the sample for this study (an average of 402 per state and 100 per school). The schools were initially assigned random numbers to accommodate day, boarder, government or private schools. Five trained research assistants were enrolled into the study to help in data collection. In each sampled school, the students were selected through proportional allocation of sample size by dividing the allocated number with the number of available streams or classes. In each stream or class entered, students were randomly selected by ballot non replacement before each day's classes. Due authorization from the school principals and the help of the head teachers were ensured.

A self developed but well validated questionnaire which consists of close ended questions was the major instrument for data collection. The questionnaire was divided into 2 sections. Section one dealt with personal data while the second section dealt with factors associated with cigarette smoking behaviour. The instrument after undergoing peer review and medications was subjected to a pilot study and subsequent test retest. The measure which was conducted in 2 schools not included in the sample yielded a correlation  $r = 0.72$  indicating reliability of the instrument. The difference in the final sample size (1860) used for further analysis was accounted for by those who could not meet the eligibility criteria i.e., those who never smoked.

## RESULTS AND DISCUSSION

**Respondents smoking behaviour:** Table 1 (a) shows that of a total of 2010 adolescent students who were enrolled into the study, a greater number 1680 (83.6%) were either currently smoking or had ever smoked indicating a high prevalence of cigarette smoking among this group. Studies (Rigotti *et al.*, 2000), conducted in 1999 among US college students ( $n = 14,138$ ) concluded that 53.4% of all college students reported ever having smoked a cigarette. Out of the 1680 who smoked in this study, many (71.43%) initiated smoking behaviour at the senior secondary class (Table 1 b). The US Department of Health and Human Services (Centers for Disease Control, 1997), indicated that majority of the adolescent's transit to college showing progression into adulthood and the freedom to make self-initiated choices, including the decision whether to smoke. Though few students (4.8%) mentioned primary class as period smoking started, it all provided much needed information to make them targets of early preventive measures.

On average number of sticks of cigarette they smoke daily on a scale of 20, many (58.33%) smoked between 1-5 sticks, which is still considered to be rather on the high side considering their age (Table 1 c). Here again Rigotti *et al.* (2000) found that of the current smokers, many (43.6%) smoked 1-10 cigarettes daily while 12.8% smoked at least a pack of cigarette (20+) per day. Majority of respondents (74.4%) as seen in Table 1 d, however smoke when they want to relax or feel depressed or stressed, just as Emmons *et al.* (1998) implied (though not statistically tested), a potential association between increased smoking prevalence and increased rates of depression or mood. When respondents were asked to mention major source of their smoking behaviour (Table 1 e), an expected large number 1300 (77.4%) mentioned their peer groups while a few (17.9%) implicated their parents or other adults in their environment. This result corresponds with Edwin (1991) assertion that young people often try their first cigarette at the urging of their friends and they may continue to smoke if it is an accepted and admired habit within their social group.

On popular brand of cigarette mostly preferred, majority (56.6%) claimed Benson and Hedges while many (26.8%) mentioned St. Moritz (Table 1f). This finding could be as a result of the fact that these brands are very popular amongst older men and so little wonder then that the adolescent also adopt it as a preferred brand. It could also be possible that these brands give the youth the necessary thrill and kick they expect from cigarette smoking.

When respondents were asked to enlist major factor (s) influencing their smoking behaviour, majority (59.52%), said they learnt from friends, which coincided with the earlier result on peer group as source of information on smoking behaviour, while many (22.6%), said reduction of tension and fatigue influenced their decision to smoke (Table 1g). On what they think should be done to prevent adolescents from smoking (Table 1h), majority (41.7%) suggested strong counseling sessions in schools for students, many (26.8%) mentioned parental role modeling and guidance, while some (22.6%) strongly advised the government through appropriate agencies to ban the sale and smoking of cigarette in public places.

### **Prevalence of smoking behavior and place of domicile:**

An association between the prevalence rates of smoking behaviour and type of domicile was sought. Domicile here is used to denote where the students come to school from, such as either from their homes (day students) or residing in school hostels (boarders). Table 2 showed that of the 1680 students who smoke or ever smoked, 1400

**Table 1: Analysis of the respondents smoking behaviour**

Characteristics of the respondents (Smoking behaviour)	f (%)
<b>Smoke presently or ever smoked</b>	
Yes	1680 (83.58)
No	330 (16.42)
Total	2010
<b>Period smoking started</b>	
Primary	80 (4.76)
Juniour secondary	400 (2381)
Senior secondary	1200 (7143)
Total	1680
<b>Average no of sticks smoked daily</b>	
1-5	980 (58.33)
1-10	620 (36.91)
20>	80 (4.76)
<b>How random student smoked</b>	
At random	120 (7.14)
After/Before meal	250 (14.88)
During relaxation/when depressed, stressed	1250 (7440)
<b>Major source of smoking behaviour</b>	
Peer group	1300 (77.38)
Parents/adult	300 (17.86)
Media	70 (4.17)
Others (e.g., just decided)	10 (0.59)
Total	1680
<b>Popular Brand preferred</b>	
Rothmans	200 (11.90)
St. Moritz	450 (26.79)
Benson and Hedges	950 (5655)
Target	40 (2.38)
Yes	40 (238)
Total	1680
<b>Factor (s) influencing smoking behaviour</b>	
Wets appetite/gives satisfaction	105 (6.25)
Learnt from friends	1000 (59.52)
Reduce tension/fatigue	380 (22.61)
Ready available/accessible	100 (5.95)
No reason	95 (5.65)
Total	1680
<b>Response on Preventive measure</b>	
School counseling	700 (417)
Parental guide	450 (26.8)
Banning of sales/ smoking in public places	380 (22.6)
Aggressive mass Media campaign	100 (5.95)
Others (e.g., Banning manufacturers)	50 (2.98)
Total	1680

respondents were day students while 280 respondents were boarders. Conversely, 130 respondents who do not smoke were day students while 200 respondents were boarders. However, there were more boarders who smoked than their day student counterparts. The result of analysis ( $p < 0.05$ ), showed that association does exist between the prevalence rate of smoking behaviour and type of domicile. Green and Green (1991) revealed that young people at home smoke. Siblings seem to be more influential than parents in this respect. When both parents smoke, children are more than twice as likely to be regular smokers than if neither parent smokes.

Again an association was sought to ascertain if relationship exist between major source of smoking behaviour and type of domicile. Analysis showed that out of 800 respondents who indicated that peer group is their major source of smoking behaviour, 550 are day students

while 250 are boarders. Again out of 400 students whose major source of smoking was their parents, 280 are day students while 120 are boarders. Furthermore, 280 students whose major source of smoking is the mass media, 200 are day students while 80 are boarders. The null hypothesis was rejected ( $p < 0.05$ ), leading to the conclusion that relationship does exist between major source of smoking behaviour and type of domicile. On this, Bandura (1980) stated that if a student's locality is situated in an area that is dominated by smokers, then it is very likely that the student would go by what is available in his environment. Furthermore, association was sought between prevalence rate and time smoking behaviour started. Analyses (Table 2), indicate that out of 880 respondents who started smoking from senior secondary, 750 are day students while 130 are boarders. Again from 600 respondents who indicated that they started smoking from junior secondary, 450 are day students while 150 are boarders. Furthermore, of the 200 students who started smoking from primary school, 150 are day students while 50 are boarders. The above hypothesis was rejected ( $p < 0.05$ ) and conclusion drawn that association does exist between prevalence rate and time smoking started. These results are expected as Doll (1990) had already noted that smoking habits generally begin in the early teens. Again Edwin (1991) asserted that peer smoking is clearly related to peer influence which is extremely important in the development of smoking habit, particularly during the teenage and college years.

**Theoretical framework:** There are a number of significant theories that underpin the practice or intention to smoking behavior. They include: Social learning (Cognitive) Theory (SLT), which according to Bandura (1980) describes learning in terms of the interrelationship between behaviour, environmental factors and personal factors. In relating SL T to cigarette smoking behaviour among young people, we will observe that this theory has some learning patterns, which can influence a students' behaviour or attitude to smoke cigarette. These include: Observational learning, where a non smoking adolescent who assimilates more what they see continually observes a smoker thereby igniting his interest to try it out. Discovery learning-a non smoking adolescent, who must have been concealed by parents/guardian against smoking, suddenly discovered that there are some induced mental changes after each stick of a cigarette probably from peers, may decide to be smoking. Once the adolescent discovers this false, momentary and dangerous effect of cigarette smoking, he takes to it and forms as a habit without considering the negative effect.

Table 2: Analysis of association between selected smoking behaviours and type of domicile

Ho:	Smoking prevalence	Type of domicile			Total	X <sup>2</sup>	df	Significant*
		Day	Boarder					
(1) Prevalence of smoking Behaviour and type of domicile	Smoke presently or ever smoked	1400	280		1680	292.93	1	<0.05
	Never smoked	130	200		330			
	Total	1530	480		2010			
(2) Major source of smoking behaviour and Type of Domicile	Peer group	550	120		800	15.27	3	<0.05
	Parents/adult	280	120		400			
	Media	200	80		280			
	Others (e.g., just decided)	150	50		200			
	Total	1180	500		1680			
(3) Time smoking Started and type of domicile	Primary class	150	50		200	27.75	2	<0.05
	Junior secondary	450	150		600			
	Senior secondary	750	130		880			
	Total	1350	330		1680			

Situational learning-An adolescents' social environment can influence his attitude especially if the area is dominated by smokers. Theory of reasoned action (TRA). According to the theory, the most important determinant of a person's behaviour is behaviour intent. Assumptions of TRA include that people consider the implications of their actions before they decide to engage or not in certain behaviours (Fishbein and Ajzen, 1975). TRA is, used in order to predict and understand healthy and unhealthy behaviour and the outcome of behaviour including weight loss, alcohol abuse, smoking behaviour, physical activity as well as implementing and developing health prevention programs. Trans Theoretical Model (TTM). Application to smoking behaviour when referred to the TTM as developed by Prochaska *et al.* (1992, 1983), posits that the model is concerned with why people change their behaviour. Outlined below are stages to change, which can necessitate and induce smoking habits. Such as the pre contemplation stage-where the person has no intent to adopt a smoking behaviour in the foreseeable future. Contemplation stage-where the individual is aware of the new or alternative behaviour of smoking and he is thinking about making a change. Preparation stage-Occurs when the individual gathers information and makes plans necessary to try out the smoking behaviour. Action stage-of actually carrying out the action of new behaviour of smoking. Maintenance stage-of dealing with the up keep and constant practice of the habit of cigarette smoking behaviour and Relapses prevention stage where efforts are made to prevent the person from returning to non-action or an unhealthy former alternative. When relapse occurs, the process of change starts over and this would lead to the rehabilitation of behavioural habits of cigarette smoking.

**CONCLUSION AND RECOMMENDATIONS**

Based on the analysis, the following conclusions were drawn. Many of the students had smoked either now or before. Majority started smoking at senior class. While

many smoked between 1-10 sticks daily, majority smoked more during relaxation or when stressed or depressed. Many said peer group is their major source of smoking behaviour. Majority of the students smoked Benson and Hedges as a preferred brand of cigarette. In addition, many of the students smoke because their friends influenced them. The study found strong association between prevalence rate of smoking behaviour; major source of smoking behaviour; time smoking started and type of domicile (p<0.05).

The implication of these findings is that there is relatively high level of cigarette smoking behaviour among this group of adolescence in the study area. This will only help to increase the health problem of the students in their old age and will also accelerate mental health problems amongst this group (Nwankwo, 2006b). Thus the knowledge of the health risks associated with cigarette smoking will help the students to abstain from cigarette smoking so as to live longer and healthier. While parents are solicited to be good examples for their wards, an urgent, combined and aggressive campaign by appropriate government agencies to stem up sanctions regarding sale and smoking of cigarette as in private as well as public places will be a welcome development.

Areas of concern may include raising cigarette taxes to discourage smoking, prohibition of all forms of cigarette advertisement and anti smoking education to be stressed especially in the last 2 years of the primary school. However it is advocated that future studies should use longitudinal designs that can identify psychological and socio-environmental determinants of smoking among this group. Such information could inform the reliable development of smoking prevention and cessation interventions targeted at the adolescent population.

**REFERENCES**

Akolawole, A., 1993. Mental health and everyday living. Ibadan; Evans brothers Ltd.

- Albert, P.B., 1991. Some variables contributing to the onset of cigarette smoking among junior high school students. *Soc. Sci. Med.*, 4 (3): 359-361.
- Barbara, W., 1993. Smoking habits of high schools students related to intelligence and achievement. *Pediatrics*, 29: 781-782.
- Bandura, D.E., 1980. *Social learning theory*. Morris town, NJ: General Learning Press.
- Christie-Smith, D., 1999. Smoking cessation programs need to target college students. *Am. J. Health Syst. Pharm.*, 56: 416.
- Chalton, A. and V. Blair, 1989. Predicting the onset of smoking in boys and girls. *Soc. Sci. Med.*, 2 (2): 279-282.
- Doll, R., 1990. Cigarette smoking among high school students. *Am. J. Pub. Health*, 19: 1499-1511.
- Elegebeye, O.O., 1997. Incidence and variables contributing to onset of cigarette smoking among secondary school children and medical students in Lagos, Nigeria. *Br. J. Preven. Soc. Med.*, 67: 232-237.
- Ekpu, R., 1989. *Health for Modern Living*. 2nd Edn. Ibadan. Macmillan Publishing Company.
- Ewuzie, M., 2005. *Drug, alcohol and tobacco*. Owerri: Cherry Bren Publishers.
- Emmons, K.M., H. Welchler, G. Dowdall and M. Abraham, 1998. Predictors of smoking among US college students. *Am. J. Pub. Health*, 88: 104-107.
- Edwin, J., 1991. *Healthful living*. London. The C.Y. Mosby Company.
- Fishbein, M. and I. Ajzen, 1975. *Belief, attitude, intention and behaviour: An introduction to theory and research*. Addison-Wesley, Reading, M.A.
- Goddard, E., 1990. *Why children start smoking. An enquiring carried out by social survey Division of O.P.C.S. on behalf of the Department of health*, London: H.M.S.O.
- Gfroerer, J., J. Greenblatt and D. Wright, 1997. Substance use in the US college-age population: differences according to educational status and living arrangements. *Am. J. Pub. Health*, 87: 62-65.
- Green and Green., 1991. A multivariate study of correlative factors in youthful cigarette smoking. *Developmental Psychol.*, 2: 5-11.
- Hines, O., A.C. Fretz and N.L. Nollen, 1998. Regular and occasional smoking by college students: Personality attributions of smokers and non smokers. *Psychol. Rep.*, 83: 1299-1306.
- Lynn, R.M., 1991. A study of smokers and non-smokers as related to achievement and various personal characteristics. *Abstract In Res. Prog. No.*, 464: 164.
- Nwankwo, B.O., 2006b. *Mental and emotional health*. Owerri: Megasoft Publishers.
- Nwankwo, B.O., 2006a. *Chemical substances and human behaviour*. Owerri, Onii Publishers.
- Nworgu, B.G., 1991. *Educational research: Basic Issues and Methodoly*. Ibadan, Wisdom Publishers.
- Prochaska, J.O. and C.C. Diclemente, 1992. In search of how people change. *Am. Psychol.*, 41: 1102-1114.
- Prochaska, I.O. and C.C. DiClemente, 1983. Stages and process of self change or smoking towards an integrative model of change. *J. Consul. Clin. Psychol.*, 51 (3): 390-395.
- Rigotti, N., J.E. Lee and H. Wechsler, 2000. Us college students' use of tobacco products: Results of a national survey: *JAMA* 284: 699-705.
- Schorling, J.B., M. Gutgesell, P. Klass, D. Smith and A. Keller, 1994. Tobacco, alcohol and other drug use among college students. *J. Substance Abuse*, 6: 105-115.
- US Department of Health and Human Services, Centers for Disease Control, 1997. *Youth risk behaviour surveillance. National college health risk behaviour survey*. *MMWR*, 46: SS-6.
- Wechsler, H., J. Lee and N. Rigotti, 2001. Cigarette use by college students in smoke-free housing: results of a national survey. *Am. J. Preven. Med.*, 20: 202-207.
- Wynder, E.C. and D. Hoffmann, 1991. *Tobacco and tobacco smoke studies in experimental carcinogenesis*. New York, Academic Press.