# CIGARETTE SMOKING AND ADOLESCENT HEALTH: A SURVEY OF SELECTED SENIOR SECONDARY SCHOOLS IN EKPOMA

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## ABSTRACT

The objective of this study was to investigate the knowledge and practice of cigarette smoking among in-school adolescents in Ekpoma. A sample of 353 senior secondary students drawn from selected schools in the area was studied in a cross-sectional design using self-administered questionnaires. Respondents' knowledge was assessed with questions that bother on aspects of smoking with public health implications. Mean age of respondents was 16.6 years and a near-equal gender distribution. The results showed a smoking prevalence of 11.6% while the percentage attempts to quit was 26.8%. Percentage awareness about the harmful effects of smoking was 86.1% while comprehensive knowledge of important aspects of smoking was good in 60.3% of respondents. There was a significant relationship between smoking and self-reported academic performance ($X^2$ = 5.002; p=0.025; OR = 0.47; CI (95%) = 0.22 – 0.96). Conclusively, the prevalence of smoking was high among in-school adolescents in the study area. We recommend special programmes and services aimed at reducing smoking among adolescents in a learning environment.

**Keywords*: Cigarette, Smoking, Adolescents, Secondary schools, Ekpoma.*

## INTRODUCTION

Adolescence is an age of opportunity. It is an opportunity to grow, develop, and experiment and in the process habits are formed. Substance abuse is one of the common habits that young people develop while growing up (Park, 2011). Smoking of cigarette may be initiated by many adolescents while in secondary school (Naing et al, 2004). Various factors in the school environment may be responsible for this observation. These factors include peer pressure, desire to belong and be accepted in a group, and cult activities. Other factors that have been documented to be important in influencing young people to initiate and continue smoking include parental or family influence, media influence, emotional challenges, and being around shops or joints where cigarette smoking is rampant (Pickett and Pearl, 2001; Goldade et al, 2012). These factors, though not peculiar to in-school adolescent, have the tendency to produce more visible effects during school hours that constitutes a significant portion of the young person's life. As such, influences that might have been imparted in the out-of-school environment now do exist in school environment, thus creating an opportunity to spread the negative behavior.

The link between cigarette smoking and many non-communicable diseases have been established (American Cancer Society, 2007; US Surgeon General, 2004). In the general population, important consequences of exposure to both active and passive smoking include cardiovascular and respiratory disorders, and cancers. Cigarette smoking is also known to be an aggravating factor in pulmonary tuberculosis, hypertension and diabetes mellitus. In fact, the use of cigarettes and other tobacco products constitute one of the most important modifiable risk factor in many non-communicable diseases. Furthermore, for adolescents undergoing the rigors of learning, smoking and the associated vices, are potent distractions to academic activities. This is because substance abuse has the potential to drive the abuser toward violent behavior, crime, truancy and absenteeism. There is also the tendency toward the twin social vice of alcohol abuse which altogether compounds the sexual and reproductive problems of adolescents (National Policy on Population, 2004).

A majority of adults smoking cigarette and drinking alcohol initiated the habits as teenagers. It has been reported that over 30% percent of the disease burden and more than 55% percent of premature deaths

among adults are associated with behaviours initiated in adolescence. These include tobacco and alcohol use, risky sexual exposures, early marriage and childbirth (Jejeebhoy et al, 2008).The trend in alcohol use has not declined since 1980. Rather it has been on a steady increase with more teenagers getting involved in alcohol use (Al-Yousaf and Karim, 2001; Salawu et al, 2010).

The heaviest alcohol consumers are the heaviest tobacco (cigarette) smokers (National Institute on Alcohol Abuse and Alcoholism, NIAAA, 1998).The prevalence of smoking in Nigerian males is 9% while 7.4% of males and 0.1% of females aged 15-24 years smoke; the highest prevalence among men, 12.1%, is in the south-south (National Population Commission and ICF Macro, 2009).

In the light of the foregoing, a few questions are worth asking? What do adolescent know about cigarette smoking? What do they practice with respect to smoking? This study therefore, investigates the knowledge and practice of cigarette smoking among in-school adolescents in a semi-urban town in South-south Nigeria.

## MATERIALS AND METHODS

**Study area:** This study was done in secondary schools in Ekpoma from June to December, 2012. Ekpoma is a peri-urban town in Edo State, South-southern Nigeria. It is a university town where most young people in school including tertiary, secondary and primary institutions reside.

**Study design:** The study design was a cross-sectional survey of 6 randomly selected schools from 25 secondary schools in the study area. Randomly

selected classes in the senior sections of the schools were then studied in clusters.

**Sample size:** The minimum sample size was calculated with the Cochran formula- $n = Z^2pq/e^2$ (Cochran, 1965; Israel, 2012). *P* was taken as the prevalence of 7.5% of youths who smoke in Nigeria (NPC and ICF Macro, 2009) and a minimum sample size of 107 respondents was obtained. However, to improve overall representativeness, a sample of 360 students was studied.

**Data collection:** Data collection was done with the use of self-administered semi-structured questionnaires. The questionnaires contained questions on socio-demographic backgrounds, and questions to elicit information on knowledge and practice of cigarette smoking. Respondents knowledge were assessed and scored based on responses to selected questions as shown in Table 1.

The questions were selected by the researchers based on important aspects of cigarette smoking with public health implications.

**Ethical consideration:** Ethical clearance was obtained from the Department of Community Health, Ambrose Alli University, Ekpoma. Permission was obtained from the proprietor or principal of each of the selected schools while individual verbal consent or assent was gotten from each participant.

**Data analysis:** The data obtained was analyzed using the Scientific Package for Social Sciences (SPSS), Version 17.0. Other secondary analyses were done with the WINPEPI software (Abramson, 2011). Chi square test was used to determine associations between selected variables. Results were presented in tables and figures.

**Table 1: Scoring for knowledge of health problems associated with cigarette smoking.**

| SN | Question | Score |
|----|----------|-------|
| 1. | Are you aware that health problems can result from smoking cigarettes? | 1 |
| 2. | Indicate from the following list health problems that may result from cigarette smoking (Chest infection, chronic obstructive airway disease, lung cancer, hypertension, peptic ulcer disease, reduced life span). | 1 each for correctly identified options; total obtainable score = 6. |
| 3. | In which situations can somebody be exposed to the effects of smoking cigarettes? When the individual smokes When cigarette smoke is blown into someone's face When one is in a room where cigarette smoking is going on | 1 each for correctly identified options; total obtainable score = 3. |
| | TOTAL | 10 |
| *Score Of <4 = Poor Knowledge; Score Of 4-6 = Fair Knowledge; Score Of > 6 = Good Knowledge* | | |

**RESULTS**

Most of the respondents were in the age group of 15 to 19 years and the mean age was 16.6 years. The sex distribution was about equal for both sexes while Christians constituted the majority (98%) of the study group. The prevalence of smoking among respondents was 11.6% while 26.8% were willing to quit and had made attempts at quitting cigarette smoking. Specific instant motivation to smoke was highest for anger and frustration (14.6%) but most

(63.4%) of the respondents did not identify any such motivation. Overall awareness level for health problems associated with cigarette smoking was 86.1% while specific awareness was highest for chest infection (81.9%) and lowest for peptic ulcer disease (59.2%; Table 3). The level of knowledge about the harmful effects of smoking was good among 60.3% of the students. Respondents' perceived academic performance was significantly associated with cigarette smoking ($X^2$=5.002; p=0.025).

**Table 1: Socio-demographic characteristics**

| Variable | Frequency N= 353 | Percentage |
|---|---|---|
| **Age (years) (Mean age = 16.6 years)** | | |
| 10-14 | 46 | 13.0 |
| 15-19 | 291 | 82.4 |
| 20-24 | 16 | 4.5 |
| **Sex** | | |
| Male | 169 | 47.9 |
| Female | 184 | 52.1 |
| **Religion** | | |
| Christian | 346 | 98.0 |
| Muslim | 7 | 2.0 |

**Table 2: Prevalence of smoking and readiness to quit**

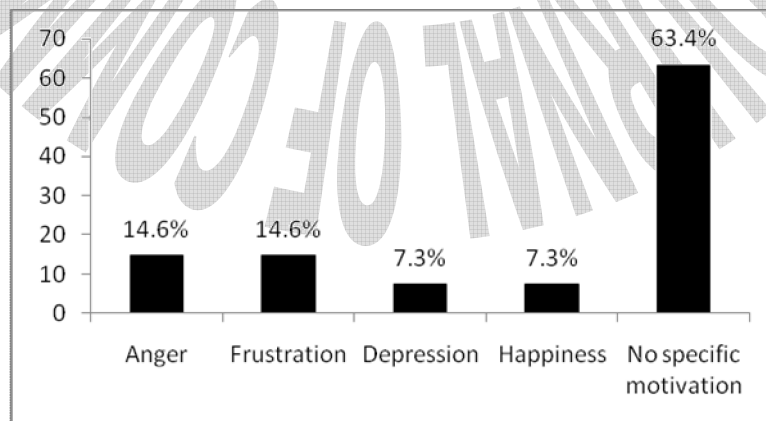| | **Frequency** | **Percentage** |
|---|---|---|
| **Do you smoke** | | |
| Yes | 41 | 11.6 |
| No | 312 | 88.4 |
| Total | 353 | 100 |
| **Have you made attempts at quitting smoking** | | |
| Yes | 11 | 26.8 |
| No | 30 | 73.2 |



**Figure 1: Motivation for cigarette smoking**

**Table 3: Awareness of health hazards associated with cigarette smoking**

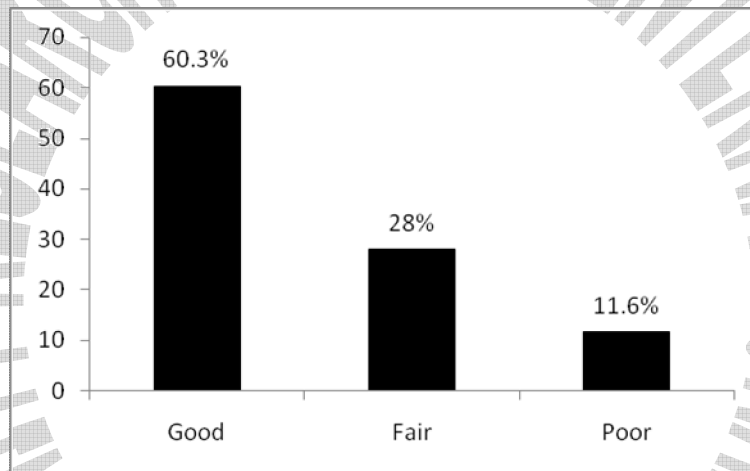|  | Response | Frequency | Percentage |
|---|---|---|---|
| **Health problems** | Yes | 304 | 86.1 |
|  | No | 49 | 13.9 |
| **Chest infection** | Yes | 289 | 81.9 |
|  | No | 64 | 18.1 |
| **Cancers** | Yes | 262 | 74.2 |
|  | No | 91 | 25.8 |
| **Chronic obstructive airway disease** | Yes | 223 | 63.2 |
|  | No | 130 | 36.8 |
| **Hypertension** | Yes | 210 | 59.5 |
|  | No | 143 | 40.5 |
| **Peptic ulcer disease** | Yes | 209 | 59.2 |
|  | No | 144 | 40.8 |
| **Reduced life span** | Yes | 244 | 69.1 |
|  | No | 109 | 30.9 |



**Figure 2: Knowledge about harmful effects of cigarette smoking**

**Table 4: Relationship between self-reported academic performance and smoking**

| Smoke cigarettes | Self-reported academic performance | | | Statistics |
|---|---|---|---|---|
|  | **Good** | **Poor** | **Total** | Df = 1 |
| Yes | 15 (36.6) | 26 (63.4) | 41 (100) | $X^2$ = 5.002; p=0.025 |
| No | 172 (55.1) | 140 (44.9) | 312 (100) | OR = 0.47 |
| TOTAL | 187 (53.0) | 166 (47.0) | 353 (100) | CI (95%) = 0.22 – 0.96 |

**DISCUSSION**

Adolescents are known to practice cigarette smoking despite their young ages. Over 11% of respondents in this study admitted to smoking cigarettes. This is higher than values in Nigerian national survey (NPC and ICF Macro, 2009) but comparable to 13 to 35% of adolescents who smoke in Western countries (Sasco and Kleihues, 1999). Also, prevalence rate for smoking is higher in out-of school adolescents as documented by Salawu et al (2010). Higher prevalence for smoking among young people not in the confines of school walls may well reflect the impact of being under the watchful eyes of the school

authority as compared to the relative "freedom" enjoyed by others who may be hawking or engaging in some form of apprenticeship. But overall, majority of new smokers are young people.

Among smokers in this survey, only about 1 in 4 has attempted to quit. This fact indicates the perpetuity of the habit among smokers. In addition, those who attempted to quit are still smoking, thus confirming the addictive nature of tobacco use (Desalu et al, 2008). In most secondary schools in the area, there are no guidance or counseling units to provide the psychosocial support necessary to enhance smoking cessation efforts among young smokers. In as much as social and psychological factors are involved smoking habits, psychosocial support is essential to quitting the habit.

In agreement with the aforementioned facts, motivations identified by smokers for picking up a cigarette to smoke included both positive and negative emotions. These motivations which could be described as instantaneous are different from reasons for initiating smoking such as peer pressure, social acceptance and tobacco adverts which have been documented by other authors (Malley,2012; Desalau, 2008). The greater percentage (63.4%) could not identify any such motivation. This is in tandem with general behavioural patterns among many adolescents who are merely excited about life and growing up having yet to chart a definite course in life.

Awareness about the harmful health effects of cigarette smoking was relatively high but the comprehensive level of knowledge though not as high was significant and needs to improve. This is important against the backdrop of the glamorization of tobacco that has been the tactics of manufacturers and distributors over the years (Gale et al, 2006). In fact, it will not be surprising to find that adolescents are able to name more brands of cigarettes than identify diseases associated with smoking. Lack of awareness or, more importantly, inadequate knowledge is a major contributing factor to smoking among all age groups (Naing et al, 2004).

More of those who considered their academic performance as good were non-smokers while more of those who reported poor academic performance were smokers. Though this finding is limited by self-reporting, it indicates a significant association between cigarette smoking and poor academic performance. The impact of cigarette use on academic performance may not necessarily have a physiological but rather a social and or psychological

explanation because of the relationship of tobacco use with anti-social behaviours that are in themselves, academic distractions.

Conclusively, the prevalence of smoking was high among in-school adolescents in the study area. Also, important psychosocial factors are associated with smoking cigarettes among adolescents and must be addressed in the context of learning experience to reduce the prevalence of smoking. Therefore, the authors recommend the design of school programmes and provision of guidance/counseling services aimed at reducing the prevalence of smoking among students.

## ACKNOWLEDGEMENT

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**AUTHOR'S CONTRIBUTION**

All the authors contributed to the study from the design, data collection and analysis to the manuscript preparation and presentation of final draft.