

Demographic and Socio-economic Factors Influencing Smoking Among Undergraduate Students in Owerri West, Imo State

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Abstract: The global prevalence of cigarette smoking is increasing especially in developing countries where more tobacco deaths occur. Tobacco smoking is a leading cause of preventable morbidity and death worldwide. The objective of the study is to determine the demographic and socio-economic factors influencing smoking among undergraduate students in the selected schools. The study design was a cross sectional descriptive study which aided in examining the relationship between other variables and the smoking status of the students in the selected higher institution. The selected schools were stratified into two and a random sampling technique was used to select a sample size of four hundred and fifty (450) students drawn from Federal University of Technology (200), Federal Poly Nekede (250) respectively. The data was analyzed using descriptive statistics and the results were displayed in frequency tables and charts. The highest percentage (51%) were found in 20-24 years in FUTO and 94(49%) in POLYNEK. The highest percentage (51%) of students that earned ₦6-10, 000 were from FUTO and 50% from POLYNEK. In general view of prevalence of smoking among students; 67% of them do smoke while 33% reported no to smoking habit. In socio-economic aspect of smoking among students, extra money on student has statistical influence on smoking where $X^2 = 21.18$; Df = 2; P-value = 0.001. In conclusion, it was proved statistically that demographic and socioeconomic factors had influence in smoking among students and most of the students were influenced into smoking by friends. Therefore, health education should be provided for the students on dangers of smoking in Imo State and beyond in order to reduce the effect of smoking on students.

Keywords: Tobacco, Demographic, Owerri, Prevalence, Smoking

1. Introduction

The youth stage in life is a time in human development where new things are experimented. There is a wide exposure to juvenile delinquencies that is enhanced by a high level of youthful exuberance in the youth stage of human development. To a wide range, Tobacco consumption has undoubtedly been experimented in diverse ways. Many youths view smoking as a rite of passage from childhood to adulthood [1]. Throughout the world, adolescent smoking is increasingly becoming a major concern [2]. Different psychological factors have been implicated in the use of cigarette by adolescents and these include peer pressure, smoking parents or siblings, tobacco adverts, absence of restriction at home, stress and unemployment [3-4].

The incessant smoking habit which is a bane in the society, to a large extent plays a significant role in the etiology of respiratory diseases. Tobacco use among people, especially students of higher institutions in developing countries, is one of the leading preventable causes of premature deaths, diseases, and disabilities around the world [5]. Between 1950 and 2000, approximately 70 million people have died from tobacco use and it is believed that over the next 50 years, another 450 million might die due to smoking related diseases. Tobacco smoking has been described by Lucas and Giles [6], as a major cause of avoidable burden of disease. Over the past 50 years, sound scientific evidence has accumulated to show that prolonged smoking is an important cause of premature mortality and disability worldwide. WHO estimated that smoking causes about 4 million deaths annually worldwide. It is estimated that there are about 1.5 billion smokers in the world today, and they consume an average of 14 cigarettes each per day. Sadly, a large percentage of these number of smokers (82%), live in low and middle income countries.

The costs of tobacco far outweigh the health consequences. This is because the cost of tobacco has a significant economic and social burden on families and societies. In Nigeria's cities, majority of the smokers know that smoking is bad for them, yet they smoke it. They seem to have become addicted to smoking that they ignore the economic and health impacts of it. Tobacco smoking has been identified as a major risk factor for non-communicable diseases such as stroke, ischemic heart diseases, and various cancers [7]. It is particularly a major contributor to death from lung cancers and cancers of the airway, as well as cardiovascular diseases. It is estimated that every 6 seconds, someone dies of a smoking-related disease [8]. Smoking tobacco has been found to be the worldwide chief cause of preventable death [9].

In limited resource settings, some smokers would prefer shelve buying of food just to buy imported cigarette, thereby going without food. There are evidences from previous studies that have shown that the prevalence of smoking secondary schools in Nigeria is between 3.4% to 17.1%, identifying the major factors influencing smoking habits of adolescent in Nigeria as peer influence, parental influence,

advertisement and low level of education [10]. Tobacco according to Akindele *et al* [11], is one of the most commonly abused drugs in Nigeria, it was estimated that the males smoked more than the females having its highest prevalence among students in the tertiary institutions.

With the insignificant level of awareness of health hazard about the smoking pattern and behaviour of students (adolescents), there is need for a study (with a background of healthy living motive by the researchers) towards identifying the demographic and socio-economic factors in the prevalence of smoking among undergraduate students in Owerri West, Imo State.

2. Materials and Methods

This study adopted a cross sectional descriptive study approach, which aided in examining the relationship between other variables and the smoking status of the students in the selected higher institution in Owerri West LGA.

2.1. Study Area

This study was carried out in two institutions (Federal University of Technology Owerri and Federal Polytechnic Nekede) located in Owerri West LGA, Imo state. Owerri West is one of the Local Government Area in Imo state having its headquarters at Umuguma. It was carved out from Owerri Municipal in 1996. It has an area of 295 km² and a population of 99,265 as at the 2006 census. Imo State has a population of about 3.9 million people with 27 LGAs and an annual population growth rate of 3%, with a land mass of about 72.5 square kilometers which predominantly comprises career civil servants, students, professionals, businessmen and semi-skilled workers. FUTO was established in 1980 and is located in Ihiagwa, Owerri west. It comprises of over 21,000 students (undergraduate and postgraduate) with academic staff strength of over 926, over 1200 administrative and technical staff. FEDPONEK is located in Nekede. Nekede is a community in Owerri West Local Government Area of Imo State. The institution was established in 1978 as the College of Technology, Owerri which was later renamed as the Federal Polytechnic, Nekede in April 7th, 1993. It has five (5) Schools with more than 23 Departments. The school undergoes programmes such as Continuing Education Centre (CEC), National Diploma (ND) and Higher National Diploma (HND). The study area covers both in campus and out campus vicinity where there is massive exposure to high population pressure and youthful exuberance.

2.2. Study Population

The study population covers undergraduate students of FUTO (With a growing population of about 23,312 consisting of 16,202 males and 7,110 females) while FEDPONEK (With a growing population of 31,401 consisting of 13,179 males and 18,222 females). Thus the study population is 54,713.

2.3. Sample Size

Using Taro Yamane [12] formula for computing sample size

$$\frac{N}{1 + N(e)^2}$$

N= Total population = 54,713

e= precision or sampling error = 0.05

$$\frac{54,713}{1 + 54,713(0.05)^2} = \frac{54,713}{137.8} = 397.1$$

$$\text{FUTO} = \frac{397.1}{54,713} \times 23,312 = 169.2$$

169.2 was approximated to 200 to get a larger sample size.

$$\text{FEDPONEK} = \frac{397.1}{54,713} \times 34,401 = 227.8$$

227.8 was approximated to 250 to get a larger sample size.

2.4. Sampling Technique/Procedure

Cluster sampling used to select the students from the two institutions into clusters. Systemic random sampling was used to select the students from the sample size from each institution while simple random sampling was used to select from a sample size of four hundred and fifty (450) students drawn from FUTO (200) and FEDPONEK (250) respectively. Using proportionate sampling to stratify by gender in both institutions, (139 male students and 61 female students) were selected from FUTO while (105 male students and 145 female students) were selected from POLYNEK. The sampling method adopted in the selection of the population was through interviews using structured questionnaire that represented all the students from various levels in the selected institutions.

2.5. Inclusion/Exclusion Criteria

The participant must be a student from FUTO and FEDPONEK. Eligible participants cover male and female students who are consented to give information. Staff of the institutions was not included in the study. Participants who are students of the two institutions with serious medical conditions or experiencing cognitive impairment will be excluded from the study. This information will be provided by the students when receiving consent forms.

2.6. Data Collection/Instrument Validity

A well structure questionnaire was self-administered in English language which was personally distributed with the aid of two trained research assistants. The questionnaire was divided into four sections to cover demographic information, prevalence of smoking, Influence of socio-economic factors of tobacco use and evaluation of effects of tobacco. The instrument was validated for content relevant to the topic and objectives as well as appropriateness of

language by the supervisor and researcher in health field. Validity of this study focused on ensuring that chance, bias and confounding are addressed in the study design, sample, and data collection.

2.7. Data Analysis

Obtained data was presented in tables, using excel worksheet and transported into Statistical Package for Social Sciences (SPSS, version 20.0). The analysis was done using descriptive statistics and the results were displayed in tables and charts. Then, frequency tables were generated for the socio-demographic distribution of respondents and percentage of prevalence of smoking among students. Bar charts were subsequently created to aid visual appreciation of influence of monthly income on the prevalence of smoking. Bivariate analysis was first carried out to show the association between smoking and socio-demographic variables. The Chi-square test is used to examine whether or not an association exists between two categorical variables but does not show the strength or direction of that association. The significance level for all statistical analysis was set at $p \leq 0.05$.

2.8. Ethical Considerations

The study (including questionnaire) and verbal consent process received ethical approval from the Department of Public Health, Federal University of Technology Owerri. In addition, informed voluntary consent was sought and obtained from each student. Although the consent was verbal, it was ticked in the appropriate box before interview commenced.

3. Results

3.1. Demographic Information

The results of the data in table 1 show that the highest age range was 20-24 years with 51% for FUTO and 75% for POLYNEK, while the least percentage were recorded as follows; 15(29%) between 30-34 years in FUTO. The gender of the students; majority 139(60%) were male in FUTO and 145(70%) were females in POLYNEK. The Marital status of the respondent; FUTO has 192(49%) for single students while 8(26%) were married. In POLYNEK, 227(54%) were single and only 23(74%) are married. Concerning the year of study among the students; majority 79(58%) were in 300 level from FUTO and 85(79%) was from 400 level/ HND2 in POLYNEK. Religion of the students; Christianity dominated the study areas as it was recorded as follows; 198(45%) in FUTO and 239(55%) in POLYNEK. Data for monthly income show that (51%) of FUTO students earned between ₦6,000 - ₦10, 000 and 50% of POLYNEK earned between ₦6,000 - ₦10, 000. The least percentage in the studied institutions (FUTO and POLYNEK) was recorded as follows; 9% and 15% for (> ₦15,000) for both institutions respectively.

Table 1. Socio-Demographic Data of Students.

| Variables | FUTO | POLYNEK | TOTAL |
|----------------------------|------------|------------|------------|
| Age of students | | | |
| 15-19 years | 42(21%) | 45(18%) | 87(19.3%) |
| 20-24 years | 98(49%) | 94(37.6%) | 192(42.7%) |
| 25-29 years | 45(23%) | 75(30%) | 120(26.7%) |
| 30-34 years | 15(7%) | 36(14.4%) | 51(11.3%) |
| 35 years and above | 0(0%) | 0(0%) | 0(0%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Gender of students | | | |
| Male | 139(69.5%) | 105(42%) | 244(54%) |
| Female | 61(30.5%) | 145(58%) | 206(46%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Marital status of students | | | |
| Single | 192(96%) | 227(90.8%) | 419(93%) |
| Married | 8(4%) | 23(9.2%) | 31(6.9) |
| Separated/divorce | 0(0%) | 0(0%) | 0(0%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Year of study | | | |
| 100 level/ND1 | 22(11%) | 43(17.2%) | 65(14.4%) |
| 200 level/ ND2 | 20(10%) | 65(26%) | 85(19%) |
| 300 level/HND1 | 79(39.5%) | 57(22.8%) | 136(30.2%) |
| 400 level/ HND2 | 23(11.5%) | 85(34%) | 108(24%) |
| 500 level | 56(28%) | 0(0%) | 56(12.4%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Religion of the students | | | |
| Christian | 198(99%) | 239(95.6%) | 437(97.1%) |
| Muslim | 0(0%) | 0(0%) | 0(0%) |
| Other | 2(1%) | 11(4.4%) | 13(2.9%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Average Monthly Income | | | |
| 1000-5000 | (22%) | (20%) | (39%) |
| 6000-10000 | (51%) | (50%) | (1010%) |
| 11000-15000 | (18%) | (15%) | (33%) |
| 15000-above | (9%) | (15%) | (27%) |

Federal University of Technology, Owerri (FUTO); Federal Poly Nekede (FEDPOLYNEK).

Table 2. Prevalence of Smoking among Students.

| Variables | FUTO | POLYNEK | TOTAL |
|---|------------|------------|-------------|
| Engaged in smoking | | | |
| Yes | 97(48.5%) | 84(33.6%) | 181(40.2%) |
| No | 103(51.5%) | 166(66.4%) | 269(59.8%) |
| Total | 200(100%) | 250(100%) | 450(100%) |
| Age the student engaged in smoking | | | |
| 11-17 years | 72(54.1%) | 61(49%) | 133(73.4 %) |
| 18 years & above | 25(52%) | 23(50%) | 48(27%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Age student became a regular smoker | | | |
| 10-13 years | 0(0%) | 0(0%) | 0(0%) |
| 14-17 years | 53(63%) | 32(37%) | 85(47%) |
| 18-21 years | 36(43%) | 47(57%) | 83(46%) |
| 22 years or older | 8(0%) | 5(20%) | 13(7%) |
| Total | 97(54%) | 84(46%) | 181(100%) |
| Number of sticks of cigarette the students take per day | | | |
| 1-5 sticks | 15(55.5%) | 12(44.4%) | 27(15%) |
| 6-10 sticks | 63(66%) | 33(34.4%) | 96(53%) |
| 11-15 sticks | 17(33%) | 35(67.3%) | 52(29%) |
| 16 sticks & above | 2(33.3%) | 4(67%) | 6(33%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Average number of days the students smoke in a week | | | |
| Every day of the week | 10(56%) | 8(44.4%) | 18(99.4%) |
| 3-5 days in a week | 76(56.2%) | 59(44%) | 135(75%) |
| Once in a week | 11(46%) | 17(41%) | 28(15.5%) |
| Total | 97(100%) | 84(100%) | 181(100%) |

Federal University of Technology, Owerri (FUTO); Federal Poly Nekede (FEDPOLYNEK).

3.2. Prevalence of Smoking

Table 2 shows the prevalence of smoking among students; 97(53.5%) were from FUTO and 84(46%) from POLYNEK. Majority of the students started smoking between the age 11 – 17 years in FUTO 54.1% and 49% respectively. A good percentage of the FUTO students became regular smoker at 14-17 years (63%), while that of POLYNEK is 18-21 years (57%), with 63(66%) and 35(67%) reporting to have taken 6-10 sticks and 11-15 sticks daily in FUTO and POLYNEK respectively, with 76(56.2%) and 59(44%) students in FUTO and POLYNEK smoking an average of 3-5 days.

3.3. Reasons for Smoking: Tobacco Use on Socio-Economic Factors of Students

Table 3 below shows the influence of tobacco use on socio-economic factors of students. It can be seen that 18(69.2%) of the assessed students from FUTO smoked because of extra money they get from parents and in POLYNEK, 8(31%) smoke for same reason. Therefore, extra money on student has statistical influence on smoking where $X^2 = 21.18$; Df=2; P-value =0.001. Some students were on the opinion that they smoke because their parents or guardians smoked while they were growing up; in FUTO, 13(48.1%) agreed while 69(55%) did not agree and in POLYNEK, 14(52%) students answered yes to the idea. There was statistical influence of parents or guardians on smoking habit among students where $X^2 = 39.25$; Df=2; P-value =0.001.

Table 3. Influence of socio-economic factors to tobacco use by the students.

| Variables | FUTO; N=200 | POLYNEK; N=250 | TOTAL |
|--|--------------------------------------|----------------|-----------|
| Do smoke because of extra money you get from parents | | | |
| Yes | 18(69.2%) | 8(31%) | 26(14.4%) |
| No | 79(51%) | 76(49.0%) | 155(86%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Statistical tool | $X^2 = 21.18$; Df=2; P-value =0.001 | | |
| Do smoke because of parents or guardians smoked while growing up | | | |
| Yes | 13(48.1%) | 14(52%) | 27(15%) |
| No | 69(55%) | 57(45.2%) | 126(70%) |
| Don't know | 15(54%) | 13(46.4%) | 28(16%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Statistical tool | $X^2 = 39.25$; Df=2; P-value <0.001 | | |

Federal University of Technology, Owerri (FUTO); Federal Poly Nekede (POLYNEK).

3.4. Smoking Cessation

Table 4 show that a greater percentage (60%) of students from FUTO reported to have heard a lot about anti-smoking messages on media, billboard, posters, newspapers, magazines or movies, while (40.2%) of POLYNEK students reported same. Majority 63(54.3%) of FUTO students reported that their parents or friends have talked to them while growing up about the dangers of smoking when compared to POLYNEK 53(46%). Most 48(60%) and 41(46.1%) of students from both institutions believe that smoking is harmful to health, with 31(46.3%) and 36(54%) knowing that smoke from other people is harmful. The students in the studied area were interviewed whether they tried to quit smoking; 62(56%) of FUTO students and 48(44%) have attempted quitting smoking.

Table 4. Evaluation of the effect of tobacco use.

| Variables | FUTO | POLYNEK | TOTAL |
|--|-----------|-----------|-----------|
| Have heard about anti-smoking messages on media, billboard, posters, newspapers, magazines or movies | | | |
| Never | 0(0%) | 0(0%) | 0(0%) |
| Sometimes | 28(42%) | 39(58.2%) | 67(37%) |
| A lot | 67(60%) | 45(40.2%) | 112(62%) |
| Not sure | 2(1%) | 0(0%) | 2(11%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Have your parents or friends talked to you while growing up about the dangers of smoking | | | |
| Yes | 63(54.3%) | 53(46%) | 116(68%) |
| No | 34(52.3%) | 31(48%) | 65(40%) |
| Not sure | 0(0%) | 0(0%) | 0(0%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| On your own, do you believe smoking is harmful to health? | | | |
| Yes | 48(60%) | 41(46.1%) | 89(49.2%) |
| No | 26(53%) | 23(50%) | 49(27.1%) |
| Not sure | 23(54%) | 20(47%) | 43(24%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Agree that smoke from other people is harmful | | | |
| Agree | 31(46.3%) | 36(54%) | 67(37%) |
| Disagree agree | 39(55%) | 32(45%) | 71(39.2%) |
| Indifferent | 27(63%) | 16(37%) | 43(24%) |
| Total | 97(100%) | 84(100%) | 181(100%) |
| Have you ever tried to quit smoking? | | | |
| No response | 03(38%) | 05(63%) | 8(4.4%) |
| Yes | 62(56%) | 48(44%) | 110(61%) |
| No | 32(51%) | 31(49%) | 63(35%) |
| Total | 97(54%) | 84(46%) | 181(100%) |

Federal University of Technology, Owerri (FUTO); Federal Poly Nekede (FEDPOLYNEK).

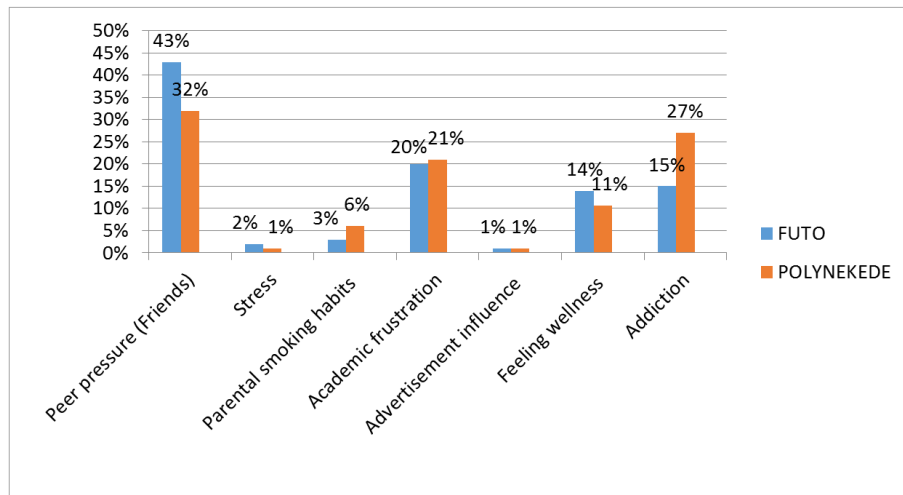


Figure 1. Reasons for Smoking.

3.5. The Effects of Smoking: Health and Social

Figures 2 and 3 below presents the health and social effects of smoking as reported by the students. While 75% and 52% of students from FUTO and POLYNEKEDE respectively reported lung cancer, 13% and 30% of them

reported oxygen prevention. Similarly, 43% and 41% of students from FUTO and POLYNEK reported depletion of personal funds, 33% and 8% of them reported loss of focus, 9% and 10% reported loss of friends and 13% of students from both institutions reported poor academic performance as social effects of smoking.

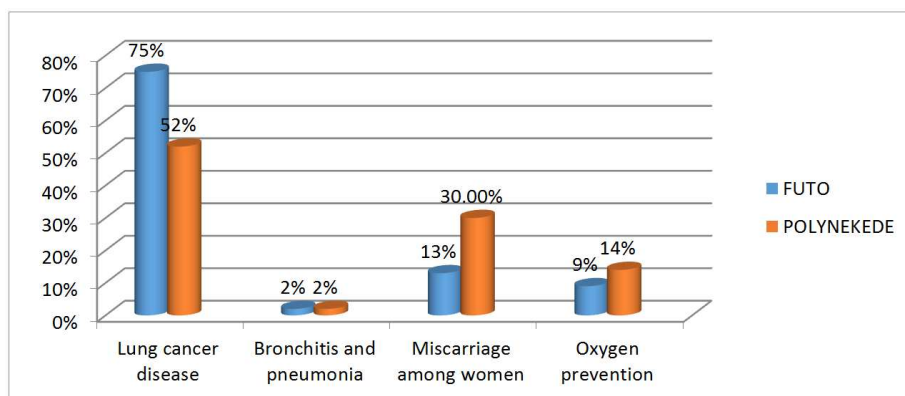


Figure 2. Health Effects of Smoking.

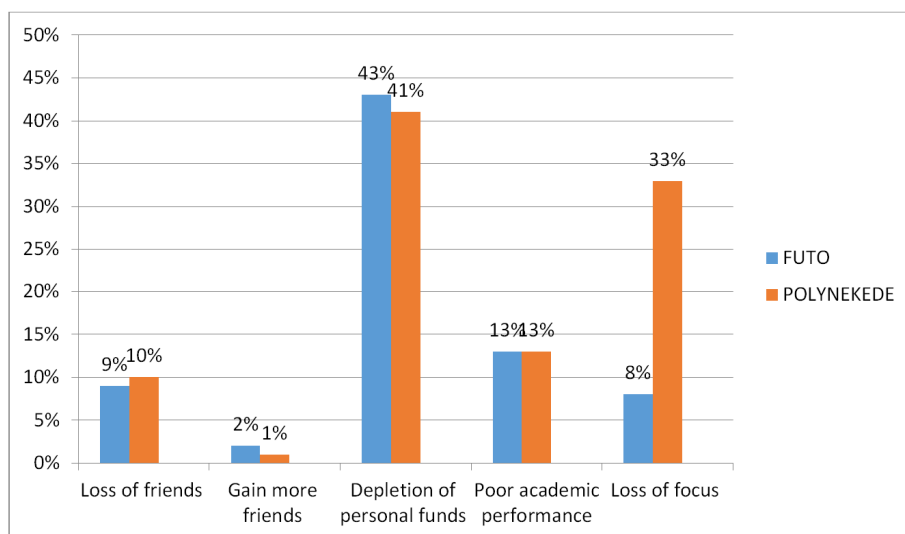


Figure 3. Social Effects of Smoking.

4. Discussion

Findings from this study showed a high prevalence of smoking among students of Federal University of Technology, Owerri (FUTO) and Federal Poly Nekede (POLYNEK). This may be due to the influence in demographic and economic factors such as age, and monthly income of students. The prevalence rate of smoking in this study was similar when compared to some studies conducted in different part of the world. In the UK, one study found that tobacco consumption rate was high and it affects uterine receptivity of female with heavy smoking [13]. The influence of education on smoking among smokers was significant. The effect of education on smoking has tremendously reducing the cases of mortality and morbidity globally. Among the global population of individuals who smoke, women are a subpopulation that have proven to be particularly vulnerable to the adoption and effects of tobacco use over their lifespan [14]. Presently, research indicates that the global smoking population is on its way to becoming increasingly high on females but did not reflect in this study where male out number females as the tobacco industry begins to market its products in developing countries [15]. In 2006, the prevalence of smoking among female student was 9%, which accounted for 200 million of the 1 billion global smokers when compared to the findings of this study where 46% was for female in all the studied schools [16]. Lindstrom [17], opined that there is a decrease in the overall prevalence of smoking in women in past 20 years and Abott and Winzer-serhan [18], suggested that the prevalence of smoking in young people under 20 years of age has increased with 30-40 percent which was not similar to the findings of this study which recorded 10-50 percent among age of 15-24 years. From the findings, majority of students that gave their consent on smoking falls between 11-17 years which was seen as a reasonable age that can take decision of their lifestyle. Thus, large number of them became a regular smoker at age 14-17 years thereby taken an average of 6-10 sticks per day. It stands for the definition of a daily cigarette smoker as a person who smoked at least a cigarette every day within the last one month.

Numerous authors have observed that a young person's decision to smoke is directly influenced by parents and peers' smoking behavior which was linked to parents and peer group influences and smoking. Peer and parents or guardians' influences are among the most powerful correlates of adolescent problem behavior. Juvenile delinquency depict the driving force behind the peer's actions to try out activities that are in vogue. Ahmed *et al.*, [19] in their study on Prevalence of cigarette smoking among young adults in Pakistan, showed that approximately 75% of respondents indicated that at least one of their five closest friends smoked cigarette and more than half mentioned that at least one person in their home smokes cigarette and it was not really similar to this study that recorded 43% from peer pressure and 9% from parents in one of the studied schools. The

likelihood of quitting among young people is strongly dependent on the extent of smoking among their peers.

On the side of health and social effects of smoking, majority of the students had good knowledge of the various health problems associated with cigarette smoking. This is probably due to the fact that many of them have been educated in school about these harmful effects. Also many of them knew that lung cancer is associated with cigarette smoking, furthermore, majority of them agreed that cigarette smoking is implicated in heart disease and depletion of personal funds and loss of focus.

5. Conclusion

The findings of this research indicated high level smoking prevalence among students in the studied schools. It was proven statistically that demographic and socioeconomic factors had influence in smoking among students. In general view, most of the students were influenced into smoking by friends and the knowledge of the danger of smoking was high but quitting the smoking still need some serious interventions for students both smokers and non-smokers.

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