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Research article

Prevalence of Smoking and Educational Intervention on The Hazards of Smoking Among Selected Secondary School Students in Ibadan, South Western Nigeria

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ABSTRACT

In this study, a cross-sectional design was used to evaluate the prevalence of smoking and educational intervention on the knowledge of hazards of smoking among secondary school students in Ibadan. A multi-stage stratified sampling method involving stratification of the eleven Local Government Areas (LGA) in Ibadan into two; urban and semi-urban LGA. One LGA was selected from each stratum. Two secondary schools (one private and public) were selected from each LGA. A total of 516 registered Senior Secondary Schools (SSS) students in each school were selected for the study. A questionnaire consisting of modified core Global Youth Tobacco Survey (GYTS) and additional questions for assessment of knowledge of smoking in relation to chronic diseases were administered on the students. Participants were graded as poor or good knowledge on smoking. Educational intervention on hazards of smoking was carried out in the public school with highest prevalence and poorest knowledge of smoking. Data was entered into SPSS version 23 and analyzed using frequencies, means and Chi square test to evaluate difference between knowledge of health hazard of smoking among; smokers and non-smokers as well as between private and public schools. P-value < 0.05 was considered statistically significant. Prevalence of smoking among participant was 8.0%. The average age of initiation of smoking was 12.0 ± 3.9 years. Prevalence of smoking was significantly ($p < 0.001$) higher (31, 75.6%) in male than female (10, 24.4%) and prevalence in public school (37, 90.2 %) was found to be significantly ($p < 0.001$) higher than private (4, 9.8%). Overall, 404 (78.3%) of respondents had poor knowledge of health hazard of smoking. The private schools' students showed good knowledge of the health hazards of smoking 106 (52.7%) compared to 143 (45.4%) students in public schools. There is a significant difference ($p < 0.05$) in the level of knowledge of health hazard of smoking among smokers and non-smokers. Majority of the smokers are in public schools 37 (90.2%). The knowledge of health hazard of smoking among the students after the educational intervention showed that those with good knowledge improved by 10.6%. The study showed a high prevalence of smoking, poor knowledge of health hazard of smoking and a positive impact of an educational intervention on students' knowledge on health hazard of smoking. More awareness program and teaching of the students on health hazard of smoking is required.

Keywords: *Smoking, Teenager, Health, Hazard, Knowledge*

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INTRODUCTION

Globally, over 1.1 billion people smoked tobacco (WHO, 2017). The prevalence is declining in many countries but smoking appears to be increasing in the African region (WHO, 2017). According to WHO (2007), about one million deaths reported in the year 2000 were attributed to cigarette smoking worldwide with most increase recorded in low-and- medium income countries (WHO, 2007) where more than 80% of the global tobacco users lives (WHO, 2011). By 2030, if current

trends continue, smoking will kill one in six people (WHO 2008). The trend, especially in developing countries like Nigeria, will continue to increase if anti-tobacco programs are not enforced. Unfortunately, increase of tobacco consumption in the developing world will inflict major public health impacts and affect economic growth and development of the countries (Danaei et al, 2005 and Mufunda et al, 2006).

According to WHO (2003), smoking usually starts in adolescence, when long-term risk may be of less concern to them than peer influences. Among teens, aged 13 – 15 years,

about one in five smoke worldwide (WHO, 2012). Factors that influence smoking among teenagers include personal choice peer pressure/influence, family/friend influence among others (Fida and Abdelmoneim, 2013; Sorgawal et al., 2014). In India, increased tobacco use was found to be associated with older age groups, male gender, government-run schools and having parents or friends who smoke (Sen et al., 2000). This rise, to a large extent is due to inadequate or lack of awareness and knowledge concerning the long-term effect of smoking (Shomar et al., 2014). Smoking is a preventable risk factors of many chronic diseases whose prevalence worldwide is of the increase and calls for great concern (WHO, 2008).

Development of many chronic diseases such as cardiovascular, cancer, asthma, chronic obstructive pulmonary disease (COPD) and even decrease fertility has been linked to smoking (CDC, 2016). Smoking has also been linked to reduced taste perception, staining of teeth, palatal keratosis, melanosis, oral candidiasis, oral cancers, halitosis and dental caries (Braumoh and Umanah, 2014).

Smokers among university undergraduate students have been shown to have less knowledge of smoking associated health risks than non-smokers (Shomar et al., 2014). Prevalence of smoking among teenagers in secondary schools in developing countries such as Sudan was reported to be 13.6% (Gadalla et al, 2012). Studies in Nigeria have determined prevalence and habit associated with smoking in secondary school students (Dimkpa and Wilcox, 2016), among university undergraduates students (Fawibe and Shittu, 2011; Babatunde et al, 2012, Odey et al., 2012; Gboyega et al, 2013 and Ebirim et al 2014). Although, Ebirim et al (2014) explored the status of cigarette smoking behaviour among male in-school adolescents and their knowledge about health risks associated with smoking (Ebirim et al (2014), there was no intervention done to assess change in knowledge of hazards of smoking.

This study evaluated prevalence of smoking, knowledge of health hazards of smoking and evaluated effect of educational intervention on the knowledge of the student health hazard of smoking among the senior secondary school students of selected private and public secondary schools in Ibadan. It is assumed that most students at this level (senior secondary school) have increased exposure to formal socialization and would be in their adolescent age (15-17 years) in Nigeria (NEP, 2014). At their age which falls in mid adolescence, obedience to parental dictates is replaced by conformity to peer group standards and loyalties (Omotoso, 2007).

MATERIALS AND METHODS

Study design: This study utilized a cross-sectional design to evaluate the prevalence of smoking, knowledge of health hazard of smoking and educational intervention on the hazards of smoking among secondary school students in Ibadan. The study was conducted between October 2016 and January 2017.

Study area: The study was conducted between October 2016 and January 2017, in two local government areas LGAs in Ibadan, the capital city of Oyo state, Nigeria.

Sampling method: Multi-stage stratified sampling method was used for this study. First stage was stratification of the eleven Local Government Areas (LGA) in Ibadan into urban (five) and semi-urban (six) LGAs. Second stage was the selection of two different LGAs, one each from semi -urban and urban area of LGAs. The selected local governments are Akinyele and Ibadan North Local Government Areas. Two secondary schools (one private and public) were selected from each local government and all the students in senior secondary class in each of the four schools were involved in the study.

Study population: The study covers students in senior secondary classes considering their age group which are most likely to be in adolescent stage as of the time of data collection. Four Senior Secondary Schools (SSS) in the 2 local governments selected were involved in the study. The total population of students in the 4 schools involved in the study was 516 based on the school registered.

Study instrument: A self-administered questionnaire was used which included modified core Global Youth Tobacco Survey (GYTS) (CDC, 2007) and additional questions for assessment of knowledge of smoking in relation to chronic diseases using a 12 questions on health hazard of smoking. The knowledge scale was graded as 1 point representing correct answer for each question. Any respondent who scored 7 and above out of 12 question was said to have good knowledge while those who scored less than 7 were said to have poor knowledge. In this study, current smoking was defined as having smoked, even a single puff in the past 30 days preceding the day of questionnaire completion. The questionnaire was assessed for clarity and validity of content by three senior academic staff members who are in the field of study. A pilot test was carried out to assess the validity and students understanding of the questionnaire. This involved 20 students of a different secondary school not involved in the main study and the questionnaire was modified base on their responses. Some of the questions modified included: 'Smoking cannot cause diseases like asthma and chronic obstructive pulmonary disease' modified to 'Smoking cannot cause diseases like asthma and chronic lung diseases', 'There is no relationship between smoking and the development of cataract' modified to 'smoking can lead to development of cataract (an eye problem)'. More questions such as 'other substance smoked, their frequency and cost of purchase' were also added to improve on the questionnaire. The scale developed to assess the students' knowledge of health hazard of smoking have a Chronbach alpha of 0.724.

Data collection procedures: Visits were made to the selected schools to obtain permission from school authorities to carry out the study in the schools after receiving ethical approval from Oyo State Research Ethical Review Committee, Ministry of Health. The aim of the study was explained to the students in each class. They were also encouraged to sincerely and correctly fill the questionnaire. The questionnaire was administered on the students in their respective schools and classes and was collected immediately as soon as each of them completed the filling of the questionnaire. They were given certain instructions on how to fill the questionnaire and they

were also told to ask questions if they did not understand any of the questions.

Educational intervention study was carried out after the analysis of first stage of data collection in order to identify the school with highest prevalence of smoking. Intervention study was carried out in one of the public schools. Its selection was based on the fact that the participants had greater exposure to risk factors of smoking, higher smoking prevalence and they had poorer knowledge on health hazards of smoking. The content of the intervention include;

- A. Delivery of lecture to the students on the assembly ground of the school for a duration of about 45 minutes. The outline of the intervention lecture had the following headings; meaning of active and passive smoking, meaning and characteristics of chronic diseases, risk factors, tobacco constituents, smoking as a risk factor of chronic diseases, smoking and addiction. The students were allowed to ask questions after the lecture and their questions were adequately attended to.
- B. Posters showing pictorial representation of danger of smoking were pasted on the walls of the senior secondary students' class rooms who were involved in the first stage of data collection for the students to have access to read and remember the implications of smoking to their health. The students' knowledge on health hazard of smoking was re-evaluated using the same instrument to determine the impact of the intervention in the public school where the intervention took place. This was done 3 months post intervention.

Data analysis: Data were expressed as mean \pm SD and proportions. Prevalence of smoking was determined by number of smoking among the participants divided by the total participants multiply by 100. Chi square test was used to evaluate the association between prevalence of smoking and sex of participants, prevalence of smoking and type of school (private or public). Chi square test was also used to evaluate association between knowledge of health hazard of smoking among, smokers and non-smokers, private and public schools. P-value $<$ 0.05 was considered statistically significant.

RESULTS

The socio-demographic characteristics of respondents are shown in Table 1. The age of respondents ranged from 10 to 23 years with majority of the respondents falling within the age range 13 to 16 years of age. Respondents' mean age was 14.9 ± 1.7 years

The pattern and reasons for smoking among secondary school students indicated that 95 (18.4%) students had friends who smoke, 34 (6.6%) students had family members that smoke and 269 students (52.2%) claimed that they have

people who smoke around where they live. Among the respondents 67 (13.0%) who had ever smoked, 26 (38.8%) out of the 67 had quit smoking while 41 (61.2%) are yet to quit giving the studied population 8.0% prevalence of smoking. Among those 26 who quit smoking 16 (61.5%) were males. The mean onset age of smoking was 12.0 ± 3.9 years with a minimum age of 5 and maximum age of 19. Prevalence of smoking was significantly higher (31, 75.6%) in male than female (10, 24.4%) (Pearson $X^2 = 12.590$, $df = 1$, $p < 0.001$).

Table 1:
Socio Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage
Sex (n=516)	Male	253	49.0
	Female	263	51.0
Age (years) (n=516)	10-14	226	43.8
	15-19	282	54.7
	20-23	8	1.6
Class (n=516)	SSS 1	137	26.6
	SSS 2	237	45.9
	SSS 3	142	27.5
Father's level of education (n=506)	No formal education	20	4.0
	Primary	46	9.1
	Secondary	170	33.6
	Tertiary	270	53.3
Mother's level of education (n=514)	No formal education	35	6.8
	Primary	45	8.8
	Secondary	175	34.0
	Tertiary	259	50.4
Father's occupation (n=511)	Trader	90	17.6
	Civil servant	255	49.9
	Self-employed /Artisan	164	32.1
	Retired	2	0.4
Mother's occupation (n=502)	Trader	266	53.0
	Civil servant	147	29.3
	Self-employed /Artisan	88	17.5
	Retired	1	0.2
Accommodation	A room apartment	45	8.8
	Self-contain	86	16.8
	Room & parlour	88	17.3
	Flat	292	57.1

SSS = Senior Secondary school

Table 2:
Respondents schools and classes

CLASS	SCHOOLS				Total
	1 (Private)	2 (Public)	3 (Private)	4 (Public)	
SSS1	21	42	27	47	137
SSS2	39	62	47	89	237
SSS3	23	14	24	81	142
Total	83	118	98	217	516

Table 3:

Participants' responses to source of information received about smoking which could help them to quit smoking.

Statement on Quitting	Frequency (%)		
	Yes	No	Not sure
During the past 12 months, have you ever tried to quit smoking	28 (68.3)	13 (31.7)	0
Have you thought of quitting smoking in the last 30 days because of the warning labels on cigarette packages	23 (56.1)	18 (43.9)	0
In the past 30 days, have warning labels on cigarette packages led you to think about quitting?	17 (41.5)	11 (26.8)	13 (31.7)
In the last 30 days, have you noticed information about the dangers of smoking cigarettes or Indian hemp or that encourages quitting in newspaper or magazines	22 (53.7)	7 (17.0)	12 (29.3)

Table 4:

Comparison between frequency of private & public school students with good knowledge of health hazard of smoking in causing chronic diseases (n=516)

Variables	School	Frequency of correct answer (%)	Total Frequency of correct answer (%)
Smoking can cause stroke and hypertension but cannot cause heart attack	Private	111 (55.2)	277 (53.7)
	Public	166 (52.7)	
Smoking cannot cause diseases like asthma and chronic lung diseases	Private	143 (71.1)	344 (66.7)
	Public	201 (63.8)	
People who smoke have higher risk of gaining weight	Private	129 (64.2)	263 (51.0)
	Public	134(42.5)	
Smoking cannot affect the health of your teeth and gums and cannot cause tooth loss	Private	139 (69.2)	343(66.5)
	Public	204 (64.8)	
One disadvantage of smoking is that it increases the chances of infection.	Private	136 (67.7)	271(52.5)
	Public	135(42.90)	
People who smoke fewer than 5 cigarettes a day can have early signs of cardiovascular diseases (hypertension, stroke)	Private	127 (63.2)	341(66.1)
	Public	214 (67.9)	
Smokers have lower risk of developing diabetes in future	Private	76 (37.8)	175(33.9)
	Public	99 (31.4)	
Smokers have lower risk of developing cancer when compared with non-smokers.	Private	111 (55.2)	220 (42.6)
	Public	109 (34.6)	
There is a higher possibility of smokers developing rheumatoid arthritis than non-smokers.	Private	99 (49.3)	260 (50.4)
	Public	161 (51.1)	
Infertility in men and miscarriages in women cannot be caused by smoking.	Private	66 (32.8)	175 (33.9)
	Public	109 (34.6)	
Poor appetite is less common among smokers	Private	62 (30.8)	149 (28.9)
	Public	87 (27.6)	
There is no relationship between smoking and the development of cataract	Private	62 (30.8)	161(31.2)
	Public	99 (31.4)	

The prevalence of smoking in public school was found to be significantly higher 37 (90.2 %) than private (4, 9.8%) (X^2 Fisher Exact test, $df=1$ $p < 0.001$). A good number of the respondents that ever smoked 34 (50.7%) were influenced by their friends while 29 (43.3%) were influenced by people around their residence who smoke. Also, 3 (4.5%) were influenced by their smoking parents.

Type of substance smoked and frequency of smoking by respondents as indicated in the modified core Global Youth Tobacco Survey (GYTS): Out of 67 who had ever

smoked, 30 students (44.8%) were smoking both cigarette and Indian hemp, 21 (31.3%) smoked cigarette while 11 (17.9%) smoked only Indian hemp. Out of 41 students who still smoke presently, 19 (46.3%) were smoking both cigarette and Indian hemp, 12 (29%) smoked only cigarette, 8 (19.5%) smoked only Indian hemp, while 2 (4.8%) smoked paper. With respect to the frequency of smoking those who smoked daily accounted for 17 (41.5%), 15 (36.6%) of the respondents smoked two to three times a week, 5 (12.2%) were weekly smokers while 4 (9.7%) did smoke once in a monthly. Twenty-seven (65.8%) of the smokers smoked 1-5 cigarette daily (light

smokers), while 20 (48.8%) smoked 1-5 raps of Indian hemp daily. Also 28 (68.3%) of those that smoke daily spent an average of ₦110.00 (USD = 0.3) on the substance every day.

Factors that influenced smoking cessation and intention to quit smoking as indicated in the modified core Global Youth Tobacco Survey (GYTS): Out of the 26 students who have quit smoking, 25 students responded to factors that influenced their smoking cessation. A good number of the respondents, 14 (53.8%) quit due to personal decision, 9 (34.6%) quit because they were informed of the health hazards of smoking, 4 (15.4%) quit because of the fear of being caught by parents and 2 students (7.8%) quit because of their state of health. Out of the 41 students who were still smoking, 21 students (52.5%) had intentions to quit, 14 students (35.0%) did not want to quit while 6 people (14.6%) had not decided whether or not to quit.

Knowledge of the health hazards of smoking

Assessment of the knowledge of the students on the validated 12 questions with dichotomous yes/no response on knowledge of the health hazards of smoking. The knowledge of health hazards of smoking indicated that, 404 (78.3%) of respondents had poor knowledge on health hazard of smoking while 112 (21.7%) had good knowledge. However, variation existed between private and public schools where as 106 (52.7%) of the students in private showed good knowledge of the health hazards of smoking, only 143 (45.4%) of students in public schools were knowledgeable about the health hazards of smoking and this was found to be statistically significant (Pearson $X^2 = 4.432$ df = 1 $p < 0.05$). Majority of the smokers were in public schools 37 (90.2%). There was significant difference in the knowledge of hazard of smoking between smokers and non-smokers (Pearson $X^2 = 3.919$, df = 1, $P < 0.05$). Knowledge of health hazard of smoking was found

to be poorer among smokers (29, 70.7%) when compared to non-smokers 260 (54.7%).

Effect of intervention on student's knowledge on health hazard of smoking in the public school.

The public school used for post intervention has lowest percentages (42.1%) of good knowledge of health hazard of smoking. During the intervention 42 students were absent while 18 decline participating out of 217 in the school. In total, 157 students participated in the post intervention study giving a response rate of 72.3%. However, after the intervention, knowledge on health hazard of smoking increased by 10.6% (from 36.6 to 47.2%).

DISCUSSION

The prevalence of smoking among our study population is higher compared to 6.4% by Odey et al study (2012) but similar to 8.5% prevalence in a study among secondary school in Zimbabwe (Bandason and Rusakaniko, 2013). However, prevalence of smoking among teenagers was lower in our study when compared to studies in other parts of Nigeria and the world. For instance, 15.3% prevalence was recorded in Ebirim et al's (2014) study in eastern Nigeria, and 37% in Jeddah, Saudi Arabia (Fida and Abdelmoneim, 2013). The reason for lower prevalence in our study compared to these two studies could be because their study population were males which has been shown to have higher prevalence of smoking than females worldwide (WHO, 2003). Similarly, mean onset age of smoking in this study is lower to the mean onset age of 14 years in the study of (Fida and Abdelmoneim, 2013) in Saudi Arabia and Ebirim et al (2014) in eastern Nigeria and lower than 17 ± 3.15 years recorded from Reem et al., (2014) carried out in Gaza, Palestine.

TABLE 5:

Respondents' knowledge of health hazard of smoking in causing chronic diseases before and after educational intervention

Variables	Before Intervention n=217	After intervention n=157
	Frequency of correct answer (%)	Frequency of correct answer (%)
Smoking can cause stroke and hypertension but cannot cause heart attack	97 (44.7)	98 (62.4)
Smoking cannot cause diseases like asthma and chronic lung diseases	144 (66.3)	100 (63.7)
People who smoke have higher risk of gaining weight	28 (12.9)	76 (48.4)
Smoking cannot affect the health of your teeth and gums and cannot cause tooth loss	39 (17.9)	115 (73.2)
One disadvantage of smoking is that it increases the chances of infection.	68 (31.3)	80 (51.0)
People who smoke fewer than 5 cigarettes a day can have early signs of cardiovascular diseases (hypertension, stroke)	74 (34.1)	45 (28.7)
Smokers have lower risk of developing diabetes in future	59 (27.2)	61 (38.8)
Smokers have lower risk of developing cancer when compared with non-smokers.	69 (31.2)	72 (45.9)
There is a higher possibility of smokers developing rheumatoid arthritis than non-smokers.	59 (27.2)	90 (57.3)
Infertility in men and miscarriages in women cannot be caused by smoking.	62 (28.6)	59 (37.5)
Poor appetite is less common among smokers	114 (52.5)	46 (29.3)
There is no relationship between smoking and the development of cataract	141 (65.0)	47 (29.9)

Smokers in this study were smoking both cigarette and Indian hemp as reported in previous study that those who smoke cigarette or use a drug are more likely to use other drugs (Marc-Antoine, 2003). More than half of the current smokers were light smoker (smokes less than 5 cigarettes per day) while one quarter of them smoke more than 10 cigarettes per day. This seems to be a pattern of smoking among teenagers in the country because this was also reported in a study in eastern part of Nigeria (Ebirim, et al. 2014). Yousif *et al.*, (2012) also reported in Sudan that majority of the smokers (68.5%) smoked less than 5 cigarettes per day while 7.3% smoked more than 10 cigarettes per day. The tendency of becoming heavy smokers as they grow up and become independent cannot be rule out. Hence, there is need to educate teenagers more on health hazard of smoking. Moreover, majority of the smokers were from middle income family in terms of social economic indicators. More than half of their parents are educated even to tertiary education and lived in a comfortable apartment, this may be reason why they spent good amount of money on items they smoke.

A good number of the smokers among these students were influenced to start smoking by their friends and this is comparable to other studies (Yousif *et al.*, 2012; Ebirim *et al.*, 2014). Influence of peer group is very paramount as Oetting and Beauvais, (1987) noted that the best predictor of whether a teenager will smoke or not depends on how many of his/her friends smoke. This is not surprising because these are the friends that they relate and interact with on daily basis and have the ability to influence their decisions.

More than two-third of the respondents was found to have poor knowledge of health hazard of smoking. This is similar to previous studies among adolescents in southern Nigeria (Ebirim et al 2014). This is anticipated since more than half of those that quit smoking did so due to their personal choice and not necessarily through any information on health hazards of smoking. The poor knowledge of health hazards of smoking among the students may fuel their desire to smoke more and become more prone to smoking induced health problems such as cardiovascular diseases, dental problems, diabetes mellitus, infertility, cancer and others in the future. However, Babatunde et al., (2012) study among university students in Western Nigerian states reported awareness of health hazard of smoking to be major reason for their respondents quitting smoking. In this study, more than half of present smokers had intentions to quit smoking. More than half of present smokers have attempted quitting in the last 30 days. Constantly exposure to material on health hazard of smoking may has positively influence on them to quit smoking.

Assessment of the knowledge of smoking on health hazard shows that less than half of the population of this study had inadequate knowledge on the health hazards of smoking as also reported in previous study (Cheng *et al.*, 2015). However, students in private schools have better knowledge on the health hazards of smoking than public school students (Table 4). This is similar to the study of Sen *et al.*, (2000) in Calcutta which showed and stated that increased tobacco use was associated with government- run schools and this may be due to improved information dissemination and better exposure on health education in private schools when compared with public schools. Similarly, in this study, non-

smokers were more knowledgeable on health hazard of smoking than smokers as also reported in Reem *et al* study (Reem *et al.*, 2014). This shows that inadequate and lack of knowledge is a major factor affecting initiation and prevalence of smoking.

The re-evaluation of respondents' knowledge on health hazard of smoking after intervention showed an improvement in the students' knowledge on health hazard of smoking. This point out that despite the short time of the intervention, there was positive impact on the students. There could be more improvement in their knowledge on health hazard of smoking if the student are being taught and well educated constantly. This could be further emphasized in order to reduce prevalence of smoking and it health implications among them.

In conclusion, the prevalence of smoking is high among studied population and they have poor knowledge of health hazard of smoking. However, Government-run (public) schools have higher prevalence of smokers and are more deficit in knowledge of health hazard of smoking than the private schools. The study showed a positive impact of an educational intervention on students' knowledge on health hazard of smoking. There is need for more awareness programs and teaching of the students on dangers of smoking especially its health hazards rather than a short lecture as carried out in this research will be more effective.

The impact of the educational intervention on the students' knowledge would have been better than result obtained. This could be due the short time taken for the intervention which was probably short for the student to deeply understand the health hazard of smoking. Some of the students many not even take their time to read the poster pasted in their class rooms which could help them retained what was taught.

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REFERENCES

- Babatunde AO, Omowaye, OA, Alawode, DA et al (2012):** Smoking Prevalence, Willingness to Quit and Factors Influencing Smoking Cessation among University Students in a Western Nigerian State. *www.ccsenet.org/ass Asian Social Science*; 8 (7): 149–156.
- Braimoh OB and Umanah AU (2014):** Cigarette smoking and awareness of oral health problems of tobacco use among students at the University of Port Harcourt, South-South Nigeria. *World Journal of Dentistry*; 5 (4): 209-212.
- Centers for Disease Control and Prevention. (CDC 2008):** Global Youth Tobacco Survey (GYTS) Core Questionnaire, Surveillance Summaries, 2000-2007. *MMWR* 2008;57 (No.SS-1). <http://www.cdc.gov/tobacco/global/GYTS/factsheets/pdf>. Assessed 20th September, 2016.
- Cheng HG, McBride O. and Phillips MR (2015):** Relationship between knowledge about the harms of smoking and smoking status in the 2010 Global Adult Tobacco China Survey. *Tab control* 2015; 24: 54-61.

- Danaei G, Vander Hoorn S, Lopez AD et al (2005):** Causes of cancer in the world- comparative risk assessment of nine behavioral and risk factors. *The Lancet*; 366(9499): 1784 - 1793.
- Dimkpa DI and Wilcox, LA (2016):** Gender Differences in Cigarette Smoking Habits of Secondary School Students in Yenagoa Local Government Area, Bayelsa State, Nigeria. *American International Journal of Contemporary Research*; 6 (1):96-103.
- Ebirim CIC, Amadi NA, Abanobi CO et al (2014):** The Prevalence of Cigarette Smoking and Knowledge of Its Health Implications among Adolescents in Owerri, South-Eastern Nigeria. *Health*, 2014, 6:1532-1538. Published Online June 2014 in *Sci Res*. <http://www.scirp.org/journal/health>
- Fawibe, AE and AO Shittu (2011):** Prevalence and characteristics of cigarette smokers among undergraduates of the University of Ilorin, Nigeria. *Nigerian Journal of Clinical Practice*; 14 (2):201-205
- Fida RH and Abdelmoneim, I (2013):** Prevalence of smoking among secondary school male students in Jeddah, Saudi Arabia; a survey study. *BMC Public Health*; 13: 1010
- Gadalla YM, Abo-mali A, Mustafa BM, et al (2012):** Prevalence of smoking among school adolescents in Khartoum State. *Sudan J Paediatr*; 12 (2):44-48.
- Gboyega E. A, Adesegun J.K and Chikezie U.E (2013):** Tobacco smoking and awareness of smoking-cessation products in a university community. *Journal of public health and epidemiology* 5(8): 351-356.
- Kwamanga D.H, Odhiambo J. A and Amukoye E.I (2003):** Prevalence and risk factors of smoking among secondary school students in Nairobi. *East African Medical Journal*; 80 (4):207-12.
- Mufunda J, Chatora R, Ndambakuwa Y, et al.(2006):** Prevalence of non-communicable diseases in Zimbabwe - results from analysis of data from the National Central Registry and Urban Survey 2. *Ethnicity and Disease*. 2006; 16(3): 718-722.
- National Education Profile (NEP) update (2014):** https://www.epdc.org/sites/default/files/documents/EPDC%20NEP_Nigeria.pdf. Assessed 27th September, 2017.
- Odey FA, Okokon BI, Ogbache OJ et al (2012):** Prevalence of cigarette smoking among adolescents in Calabar city, south-eastern Nigeria. *Journal of Medicine and Medical Sciences*; 3(4): 237-242. Available online @ <http://www.interestjournals.org/JMMS> Copyright © 2012 International Research Journals.
- Oetting ER and Beauvais F (1987):** Peer cluster theory, socialization characteristics and adolescent drug use: A path analysis. *Journal of counseling psychology*, 34, 205-213.
- Reem T. Abu Shomar, Ihab K. et al (2014):** Smoking, awareness of smoking-associated health risks, and knowledge of national tobacco legislation in Gaza, Palestine. *Central European journal of public health* 2014. 22 (2): 80–89.
- Sorgawal R. Bachani D. , Bharath K et al (2014):** Risk factors of non-communicable diseases among higher secondary school students in selected districts in India. *American journal of public health research*; 2 (1): 16-20.
- Sen U. and Basu A (2000):** Factors influencing smoking behaviour among adolescents. *Asian Pacific Journal of Cancer Prevention*; 1 (4): 305-309.
- Shomar, RTA, Lubbad,KI, Ansari,WE, (2014):** . Smoking, awareness of smoking-associated health risks, and knowledge of national tobacco legislation in Gaza, Palestine. *Central European journal of public Health*; 22 (2): 80–89.
- Tsitsi B. and Simbarashe R (2010):** Prevalence and associated factors of smoking among secondary school students in Harare, Zimbabwe. *Tobacco Induced Disease*; 8 (1): 1-9 .<http://www.tobaccoinduceddiseases.com/content/8/1/12>.
- WHO (2003):** Gender, health and tobacco. Geneva Switzerland.
- WHO (2007).** Gender and tobacco control: A policy brief 2007. Available from http://www.who.int/tobacco/resources/publications/general/policy_brief.pdf. [Accessed on 17/7/2017]
- WHO (2008):** WHO report on the global tobacco epidemic. The global tobacco crisis Tobacco – global agent of death. http://www.who.int/tobacco/mpower/mpower_report_tobacco_crisis_2008.pdf
- WHO (2008).** WHO Report on the global tobacco epidemic. The MPOWER package 2008. Available from: http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf. [Accessed on March 30th 2017].
- WHO (2011).** WHO report about Global Tobacco Epidemic. Warning about dangers of tobacco. World Health Organization, Geneva, Switzerland.
- WHO (2015):** The Global Health Observatory (GHO) data 2015. <http://www.who.int/gho/tobacco/use/en/> [Last accessed on 27/7/2017]
- Yousif MG, Adil A, Babiker MM, Hussein A. (2012).** Prevalence of smoking among school adolescents in Khartoum State. *Sudanese Journal of Paediatrics* 2012; 12 (2); 44-4