

Assessment of Health Risk Behaviours among Secondary School Students in Enugu, South-East, Nigeria

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Received: March 1, 2017 Accepted: March 24, 2017 Online Published: April 5, 2017

doi:10.5539/gjhs.v9n7p57

URL: <https://doi.org/10.5539/gjhs.v9n7p57>

Abstract

Introduction: Health risk behaviours contribute to the leading causes of deaths and disability among adults and youth.

Objective: The purpose of the study was to investigate the prevalence of health risk behaviours among secondary school students in Enugu, South-East Nigeria.

Methods: This cross sectional study was conducted between May and July 2015 among 348 school students randomly selected in six secondary schools in rural and urban areas. Data was analysed using SPSS version 21, and statistical significance of association between variables was assessed using Chi-square test at $p < 0.05$.

Results: Overall, 348 respondents out of 360 returned the completed questionnaires. 50.6% were females, while their mean age was 15.2 ± 5.1 years. Majority of respondents live with both parents (73.9%).

Many respondents 44.5% had taken alcohol, while 13.5%, and 40.8% had smoked cigarette and had sex before respectively. Also, 59.8% had experienced one form of violence, while 37.6% of them preferred fast food junks to food prepared at home.

Age, sex and class did not significantly influence participants that had taken alcohol. Also, age, sex and class did not significantly influence those that had sex in the past. However, sex significantly influenced smoking of cigarettes.

Conclusions & Recommendations: Our results showed high percentage of health risky behaviours among secondary school students. Introduction of compulsory health education curriculum activities in schools was recommended.

Keywords: health, risky behaviours, students

1. Introduction

Worldwide, health risky behaviours contribute to the leading causes of death and disability among adults and youths, and also contribute to educational and social problems (Centers for Disease Control and Prevention, 2009; Schwartz, Forthun, Ravert et al., 2010). They can also cause alcohol and other drug abuse, unintentional injuries, property damage, violence including suicide, tobacco use, unhealthy dietary behaviours, physical inactivity, sexual behaviours that contribute to unintended teen pregnancy, sexually transmitted diseases, HIV, diminished lifespan, and treatment expenses (Centers for Disease Control and Prevention, 2009; Kolek, 2006).

Secondary school students are in adolescence which is typically a time when young people begin to challenge parental controls and values and to be influenced by their peers. The family is known to be an essential source of support and agent of intervention and health promotion through the school years, so relationship with parents are very important during the period (John, Mattew, Rashed, & Will, 2012). During this period, schools become more important where the support of teachers and peers may have more influence than their home environment (John, Mattew, Rashed, & Will, 2012; Collins & Steinberg, 2006). Also, schools play a critical role in promoting the health and safety of young people and help them establish lifelong healthy behaviours (Centers for Disease Control and Prevention, 2009).

Health behaviour is an action taken by a person to maintain, attain, or regain good health and to prevent illness. It

also reflects a person's health beliefs. Some common health behaviours are exercising regularly, eating a balance diet, wearing seat belts, practicing safe sex, seeking information about health matters and obtaining necessary inoculations (Olsson, Fahlen, & Janson, 2008; Kasl & Cobb, 1966).

Health-risk behaviour can be defined as any activity undertaken by people with a frequency or intensity that increases risk of disease or injury (Eaton, Kann, Kinchen et al., 2005; Nelson, Patience, & MacDonald, 1999). The six priority health risk-behaviours according to the Centers for Disease Control and Prevention (CDC) are: alcohol and drug abuse, behaviours that contribute to unintentional injuries and violence including suicide, tobacco use, unhealthy dietary behaviours, physical inactivity, and sexual behaviours that contribute to unintended teen pregnancy and sexually transmitted infections, including HIV (Centers for Disease Control and Prevention, 2009). Health risky behaviours are mostly acquired during adolescence and their results are reflected on to adulthood, and also influence cognitive performance, emotions, and overall quality of life (Patience & MacDonald, 1999; Anderson & Mueller, 2008). Changing health risk-behaviour has been shown to decrease morbidity and mortality and enhance quality of life (Adriana & Catrinel, 2007).

National Youth Risk Behaviour Survey conducted in USA in 2009 revealed a negative association between health risk behaviours and academic achievement among high school students after controlling for sex, race/ethnicity and grade level (Centers for Disease Control and Prevention, 2009). It was reported that in Philippines, four out of ten important causes of deaths among youth and young adults aged 10-24 years are attributable to health risk behaviours (Karl & Supa, 2011).

Some studies done in Africa including Botswana and Nigeria reported that adult behavioural pattern such as drinking, smoking and premarital sexual activities started from secondary schools, and they constituted major health problems of secondary school students (Isaiah & Ola, Boriffice, 2004; Martin, 2011)

Little is known about the health risk behaviours and the factors responsible in rural and urban secondary schools from this part of the country. We therefore designed our study to assess the health risky behaviours and the factors associated with it among secondary school students in urban and rural areas in Enugu, South-East Nigeria.

2. Methods

2.1 Study Population

Secondary school students in three rural and three urban schools in Enugu, South-East, Nigeria were the target population. Enugu is currently the capital of Enugu state, one of thirty-six states in Nigeria. The state has 17 Local Government Areas (LGAs), out of which nine are largely urban. There are 314 public and 308 private secondary schools in the state.

2.2 Study Design, Sample Size and Sampling Techniques

This cross-sectional school based study was conducted to assess health risk behaviours and factors associated with it among secondary school students in Enugu, South-East, Nigeria. A sample size of 360 was estimated, including 10% none response rate.

A total of 360 students were selected through multistage sampling technique. At the first stage, 3 LGAs each were selected randomly from the rural and urban areas. The second stage was random selection of one school per LGA. Schools selected were in Ugwuogo Nike, Agbani, Obeagu Awkunanaw, and Enugu metropolis. Third stage involved proportionate sampling of 60 students among the classes: Junior Secondary 1 (JSS1) to Senior Secondary 3 (SS3) in each school.

2.3 Data Collection

Questionnaires were pre-tested by 5% of the study participants. Structured self-administered questionnaires were distributed to all randomly selected students. The study was explained to the students, and they were informed that participation is voluntary, and were assured of confidentiality. Data were collected by research assistants. The first part of the questionnaire was socio-demographic characteristics of the participants, educational status and occupation of the parents, while the second part was involvement in various health risk behaviours such as: alcohol, tobacco, sexual activity, violence, and physical inactivity.

2.4 Data Analysis

Data were entered and analysed using Statistical Package for Social Science (SPSS) version 21. Frequency distribution was used for socio-demographic characteristics of the participants, occupation and education level of the parents, and involvement in health risk behaviours. Statistical significance of association between variables was assessed using Chi-square test at $p < 0.05$.

2.5 Ethical Clearance

Ethical clearance was obtained from the Research Ethics Committee of UNTH. Also, permission was obtained from state commissioner for education and principals of the schools. Informed written consent was obtained from the participants.

3. Results

A total of 348 students returned questionnaires distributed to them. Majority of them were females 178 (51.2%). Majority of them were Christians 340 (97.7%), while 341 (97.9%) were from Igbo ethnic group. All the participants were never married (Table 1).

Table 1. Socio-Demographic Characteristics of the Respondents

Variables	Category	Frequency	Percentage
Sex	Male	170	48.8
	Female	178	51.2
Age (years)	10-12	65	18.7
	13-15	144	41.4
	16-18	123	35.3
	19-21	15	4.3
	➤ 21	1	0.3
Religion	Christianity	340	97.7
	Islam	2	0.6
	Traditional	6	1.7
Ethnic group	Igbo	341	97.9
	Yoruba	3	0.9
	Hausa	1	0.3
	Others	3	0.9
Classes	JSS1	50	14.4
	JSS2	40	11.5
	JSS3	43	12.3
	SS1	60	17.2
	SS2	72	20.7
	SS3	83	23.9
Marital status	Married	0	0
	Never married	348	348

Table 2 reveals that many respondents 155 (44.5%) had taken alcohol in the past. Only 18 (31.6%) engaged in protected intercourse among those that had sex in the past. 58 (16.7%) were not participating in sports and other physical exercises.

Table 2. Health risk behaviours among participants

Health risk behaviour	Yes		No	
	N	%	N	%
Had taken alcohol in the past	155	44.5	193	55.5
Had smoked tobacco before	47	13.5	301	86.5
Had sex in the past	57	16.4	291	83.6
Among those that had sex (57), Was the sex protected?	18	31.6	39	68.4
Physical violence in the past	208	59.8	140	40.2
Preferred food junks e.g biscuits, snacks etc	131	37.6	217	62.4
Participated in sports and other physical exercises	290	83.3	58	16.7

Table 3 shows more females 87/178 (48.9%) than males 68/170 (40%) consume alcohol. Majority of participants in age group 19-21 years 8/15 (53.3%) consume alcohol. Most participants in JSS2 24/40 (60%) consume alcohol.

Table 3. Drinking of alcohol and relationship with sex, age, and class of participants

Variables	Category	Yes		No		Total	%	X ²	P
		N	%	N	%				
Sex	Male	68	40.0	102	60.0	170	48.8	5.094	0.078
	Female	87	48.9	91	51.1	178	51.2		
Age (Years)	10-12	26	40.0	39	60.0	65	18.7	3.335	0.912
	13-15	63	43.7	81	56.3	144	41.4		
	16-18	58	47.2	65	52.8	123	35.3		
	19-21	8	53.3	7	46.7	15	4.3		
Class	>21	0	0	1	100	1	0.3	10.571	0.392
	JSS1	17	34.0	33	66.0	50	14.4		
	JSS2	24	60.0	16	40.0	40	11.5		
	JSS3	19	44.2	24	55.8	43	12.3		
	SS1	24	40.0	36	60.0	60	17.2		
	SS2	29	40.3	43	59.7	72	20.7		
	SS3	42	50.6	41	49.4	83	23.9		

Table 4 shows more females 33/178 (18.5%) had sex in the past than males 24/170 (14.1%). More participants in age group 19-21 5/15 (33.3%) had sex in the past. Only 8/65 (12.3%) of those in age group 10-12 years had sex in the past.

Table 4. Participants who had sex before and relationship with sex, age, and class

Variables	Category	Had sex before Yes/No				Total	%	X ²	P
		N	%	N	%				
Sex	Male	24	14.1	146	85.9	170	48.8	2.371	0.306
	Female	33	18.5	145	81.5	178	51.2		
Age (Years)	10-12	8	12.3	57	87.7	65	18.7	7.122	0.524
	13-15	25	17.4	119	82.6	144	41.4		
	16-18	19	15.4	104	84.6	123	35.3		
	19-21	5	33.3	10	66.7	15	4.3		
	>21	0	0	1	100	1	0.3		
Class	JSS1	9	18.0	41	82.0	50	14.4	5.175	0.879
	JSS2	7	17.5	33	82.5	40	11.5		
	JSS3	9	20.9	34	79.1	43	12.3		
	SS1	10	16.7	50	83.3	60	17.2		
	SS2	10	13.9	62	86.1	72	20.7		
	SS3	12	14.5	71	85.5	83	23.9		

Table 5 shows that more males 28/170 (16.5%) than females 19/178 (10.7%) had smoked in the past. More participants in the age group 19-21 years 12/15 (80%) had smoked tobacco in the past, while 4/65 (6.2%), 16/144 (11.1%), 15/123 (12.2%) were in the age groups 10-12, 13-15, 16-18 years respectively.

Table 5. Participants who had smoked tobacco before and relationship with sex, age, and class

Variables	Category	Had smoked before Yes/No				Total	%	X ²	P
		N	%	N	%				
Sex	Male	28	16.5	142	83.5	170	48.8	6.246	0.044
	Female	19	10.7	159	89.3	178	51.2		
Age (Years)	10-12	4	6.2	61	93.8	65	18.7	9.563	0.297
	13-15	16	11.1	128	88.9	144	41.4		
	16-18	15	12.2	108	87.8	123	35.3		
	19-21	12	80.0	3	20.0	15	4.3		
	>21	0	0	1	100	1	0.3		
Class	JSS1	4	8.0	46	92.0	50	14.4	8.544	0.576
	JSS2	6	12.0	44	88.0	50	11.5		
	JSS3	7	16.3	36	83.7	43	12.3		
	SS1	7	11.7	53	88.3	60	17.2		
	SS2	8	11.1	64	88.9	72	20.7		
	SS3	15	18.1	68	81.9	83	23.9		

Table 6 shows majority of males among the participants 124/170 (72.9%) had engaged in physical violence in the

past while females were 84/178. Physical violence was highest among the age group 19-21 years 11/15 (73.3%), while age groups 10-12, 13-15, and 16-18 years were 28/65 (43.1%), 81/144 (56.3%), and 88/123 (71.5%) respectively.

Table 6. Participants who had physical violence and relationship with sex, age, and class

Variables	Category	Yes		No		Total	%	X ²	P
		N	%	N	%				
Sex	Male	124	72.9	46	27.1	170	48.8	0.00	21.478
	Female	84	47.2	94	52.8	178	51.2		
Age (Years)	10-12	28	43.1	37	56.9	65	18.7	0.015	18.885
	13-15	81	56.3	63	43.7	144	41.4		
	16-18	88	71.5	35	28.5	123	35.3		
	19-21	11	73.3	4	26.7	15	4.3		
	>21	0	0	1	100	1	0.3		
Class	JSS1	16	32.0	34	68.0	50	14.4	0.000	33.149
	JSS2	23	57.5	17	42.5	40	11.5		
	JSS3	23	53.5	20	46.5	43	12.3		
	SS1	37	61.7	23	38.3	60	17.2		
	SS2	51	70.8	21	29.2	72	20.7		
	SS3	58	69.8	25	30.1	83	23.9		

Figure 7 reveals that 71/178 (39.9%) females preferred junk food while males were 60/170 (35.3%). Those who preferred junk food in age groups 10-12, 13-15, 16-18, and 19-21 years were 23/65 (35.4%), 57/144 (39.6%), 43/123 (34.9%), and 7/15 (46.7%) respectively.

Table 7. Participants who preferred food junks and relationship with sex, age, and class

Variables	Category	Yes		No		Total	%	X ²	P
		N	%	N	%				
Sex	Male	60	35.3	110	64.7	170	48.8	0.066	6.953
	Female	71	39.9	107	60.1	178	51.2		
Age (Years)	10-12	23	35.4	42	64.6	65	18.7	0.542	5.435
	13-15	57	39.6	87	60.4	144	41.4		
	16-18	43	34.9	80	65.1	123	35.3		
	19-21	7	46.7	8	53.3	15	4.3		
	>21	1	100	0	0	1	0.3		
Class	JSS1	22	44.0	28	56.0	50	14.4	0.897	4.916
	JSS2	15	37.5	25	62.5	40	11.5		
	JSS3	18	41.9	25	58.1	43	12.3		
	SS1	20	33.3	40	66.7	60	17.2		
	SS2	26	36.1	46	63.9	72	20.7		
	SS3	30	36.1	53	63.9	83	23.9		

Table 8 shows that higher prevalence of participants from the schools in urban areas 85 (24.4%) had taken alcohol

than those from the schools in rural schools 70 (20.1%). More participants from schools in rural areas 33 (9.5%) had used tobacco/ smoked cigarettes than those from urban schools 14 (4%). More participants from rural areas 29 (8.3%) had sex intercourse in the past than those in urban areas 28 (8%).

Table 8. Participants health risk behaviours and relationship with schools in rural/urban

Health risk behaviours	Schools in Rural Areas				Schools in Urban Areas				X ²	P
	Yes		No		Yes		No			
	N	%	N	%	N	%	N	%		
Had taken alcohol	70	20.1	104	29.9	85	24.1	89	25.6	22.486	0.013
Tobacco use/ smoking	33	9.5	141	40.5	14	4.0	160	46.0	29.695	0.001
Sex intercourse	29	8.3	145	41.7	28	8.0	146	42.0	17.769	0.059
Physical violence	120	34.5	54	15.5	88	25.3	86	24.7	47.737	0.000
Preferred food junks	75	21.6	99	28.4	56	16.1	118	33.9	11.055	0.353
Sports and other exercises.	152	43.7	22	6.3	138	39.7	36	10.3	29.205	0.001

4. Discussion

A total of 360 students were included in our study with a response rate of 96.7%. Majority of the respondents were between 13 and 18 years and with the mean age of 15.2 ± 5.1 years. This indicates that they were relatively young and in adolescent period when they are engaged in Health Risk Behaviours (HRB) such as alcohol consumption, tobacco use/cigarette smoking, sexual activities, physical violence, and unhealthy dietary behaviours. A little more than half of our participants were females. This is similar to studies conducted in some countries including Nigeria (Adeleye, Rohan, Paula, & Shamin, 2009; John, Opirite, & Eme, 2012). It is not surprising that majority of the participants were Christians because Christianity is the main religion in Southern Nigeria.

More than three quarters of participants in our study were older than 12 years, and majority were in senior classes (SS1-SS3). Majority of the parents of the participants had secondary education and above, but majority of them were civil servants and traders. This findings could be because the study was conducted in urban and rural areas of the country. Our study also showed that more than three quarters of the participants were living with both parents. This finding confirms that parents have a great role to play in health behaviours of students and not only schools.

Our study revealed that almost half of the participants had consumed alcohol in the past. This report is lower than the study conducted among undergraduate students in Nigeria where sixty-one percent was reported (John, Opirite, & Eme, 2012). However, it is similar to the one done among high school students in USA (Miller, Naimi, Brewer, & Jones, 2007). The result in our study could be as a result of easy accessibility to alcohol in the communities especially during ceremonies such as wedding, burial and child dedication. Many studies showed high alcohol consumption among adults in the study areas. Surprisingly, more females had consumed alcohol in this study. This could be because more females attend ceremonies than males. The study also showed that alcohol drinking rates increased with age and almost all participants in all school grades had drunk alcohol except in JSS1 where only 34% of the participants were involved. This health risk behaviour should be discouraged as studies have demonstrated that students who drank alcohol were more likely to have poor academic performance, negative effects on some organs, and engage in other health risk behaviours such as irresponsible sexual activities, violence, smoking cigarettes and other drugs abuse (Miller, Naimi, Brewer, & Jones 2007, McCarty, Ebel, Garriso et al., 2004). Also, studies conducted in Western countries and sub-Saharan Africa have reported consistent causal relationships between alcohol consumption and sexual risk behaviours, sexual violence and HIV/AIDS (George & Stoner, 2000; Leigh, 2002; Qing, Xiaoming, & Bonita, 2010; Weinhardt & Carey, 2000; World Health Organization, 2005).

The prevalence of 13.5% in our study concerning smoking of cigarettes is lower than the percentage of US high school students who engaged in smoking where prevalence of 16-52% was reported in the United State Youth Risk Behaviour Survey in 2009 (Centers for Disease Control and Prevention, 2009). It is also lower than the findings in the studies done in Philippines and the English-speaking Caribbean (Karl et al., 2016; Rohan et al., 2009). However, the findings are similar to some studies in Nigeria (Ekanem, Asuzu Anunobi et al., 2010; Adeleye, 2011). Our findings is slightly higher than the result of the tobacco survey conducted in 2007 among youth in Nigeria (Aghaji, Omotowo, & Ekwueme, 2010), and in the study conducted in Northern Nigeria among in school

adolescents where prevalence of 7.6% and 8.3% were reported respectively (Raji, Abubakar, Oche, & Kaoje, 2013). The difference could be because all participants in our study were day students unlike the study done in Northern Nigeria where about 72% of them were day students. More males abuse tobacco just like in some other studies conducted in Nigeria and other countries (Karl et al., 2016; Rohan et al., 2009; Ekanem et al., 2010; Adeleye, 2011; Aghaji et al., 2010; Raji et al., 2013). Our findings revealed also that rate of smoking increases with age and class of students. This finding was not statistically significant.

Our study revealed that 16.4% of the participants had sex in the past. This result is slightly lower than the findings in studies done in Nigeria (Adeleye et al., 2014) and Ethiopia (Emebet, S. Debebe, & T. Deresse, 2014) where they reported prevalence of 22.9% and 18.3% respectively. The prevalence of the participants that had sexual intercourse with condom (31.6%) among those that had sex in our study was lower than 51.4% reported in the study conducted in Ethiopia. The differences could be due to the fact that those studies were conducted among only female students unlike in our study that involved both males and females. This findings concerning high prevalence of participants that had intercourse without condom could be due to lack of effective sexuality education among adolescents in schools (World Health Organization, 2012). This is a very dangerous trend that could lead to increase in teenage pregnancies, abortion, sexual transmitted diseases including HIV/AIDS.

When we examined the relationship between the participants that had sex in the past with sex, age and class, the proportion of females that had sex was higher 18.5% compared to 14.1% among males. Our study revealed that the prevalence of participants that had sex also increases with age and class of the participants. This is similar to findings in some other studies conducted in Nigeria and Ethiopia (Adeleye et al., 2014; John et al., 2012; Emebet et al., 2014):

In our study, more than half (59.8%) had engaged in physical violence, but more males had significantly engaged in physical violence than females. This is not surprising because males take more physical risks than females. Also the prevalence of participants that engaged in physical violence significantly increases with the age and class.

The findings of our study concerning dietary behaviour showed that 37.6% preferred junk food, but more among females 39.9% compared to males 35.3%. This findings differ from the study conducted among undergraduates in Egypt (Abolfotouh, Bassiouni, Mounir, & Fayyad, 2007). This mean that students in higher institutions engaged more in unhealthy dietary behaviours. The prevalence of unhealthy dietary behaviours in this study also increases with age and class of the participants.

Our study revealed that almost all participants 83.3% reported engagement in physical activity. The findings showed that more males participated in physical activities than females. This could be because males are more mobile and exercise with their peers more often than females.

Our study revealed significant disparity in health risk behaviours among participants in secondary schools in rural and urban areas. Participants from schools in rural areas engaged more in health risk behaviours than those that were in urban areas. More students in rural areas had taken alcohol before, had used tobacco, had sex, involved in physical violence, and unhealthy dietary behaviour. However, the prevalence of participants that drank alcohol and engaged in physical inactivity were more among students in urban areas than rural areas. The findings are different from the study done in Canada where they reported no difference in involvement of health risk behaviours among urban, semi urban and rural areas (Pirie & Simmons 2014).

5. Conclusions & Recommendations

The prevalence of health risk behaviours was high among students in secondary schools both in rural and urban areas in our study. We therefore recommended awareness creation among parents, community members, school staff, and the students by media to bring about behavioural changes in terms of alcohol consumption, smoking, sexual activities, healthy dietary habits, physical violence and physical activity practiced by the students. A peer-education programme should be introduced where students in schools encourage each other on adopting good health behaviour and discourage risky ones.

Acknowledgments

We sincerely thank Enugu State Commissioner of Education. We acknowledged the principals, and students of the schools where this study was conducted. The authors also thank the research assistants; Akubuko, Akwazie, Alor and Alum that collected the data for their commitment.

Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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