

## Demographic Variables of Unsafe Nutritional Behaviours Among Secondary School Adolescents in Nsukka Local Government Area, Enugu State

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### ABSTRACT

*The study investigated demographic variables of unsafe nutritional behaviours among secondary school adolescent in Nsukka Local Government Area, Enugu State. Four research questions and three null hypotheses were formulated to guide the study. A descriptive survey design was adopted for the study. A sample of 385 secondary school adolescents which was drawn from a population of 10,221 secondary school adolescents from 31 public secondary school was used for the study. Structured questionnaire titled "Democratic Variables" of Unsafe Nutritional Behaviour Questionnaire (DVUNBQ)" which was validated by three experts two from the Department of Human Kinetics and Health Education and one from the Department of Science and Computer with reliability coefficient index of 78 was the instrument used for data collection. Mean statistics was used to analyse data collected in relation to research questions while t- test statistics was used to test the 3- nul hypothesis at 05 level of significance. The finding of the study were; that secondary school adolescents in Nsukka LGA, both male and female secondary school adolescents, urban and rural secondary school adolescents, and upper basic and senior secondary adolescents were involved in unsafe nutritional behaviour to a high extent. The difference in the extent of unsafe nutritional behavior based on gender, location and education level were significant. It was concluded that secondary school adolescents of Nsukka Local Government Area were involved in unsafe nutritional*



*behaviours. Thu, it was recommended among others that the state government through the Post Primary School Management Board “PPSMB” should organize orientation, seminars and workshop for secondary school adolescents in the areas of proper feeding.*

**Keywords:** Nutrition, Unsafe Nutrition, Nutritional Behavior, Secondary School Adolescents.

## **Introduction**

Unsafe nutritional behaviours among Secondary School adolescents especially those in secondary school has become a major public health concern. The increasing prevalence of unsafe nutritional behaviours of adolescents have attracted both international and local concern because of their contribution to disease burden. For instance, World Health Organization (WHO) (2019) report on unsafe nutritional behaviours show that the proportion of adolescents aged 15 to 19 years currently involving in unsafe nutritional behaviours (Dietary Risk Behaviour) was 31.2% globally, 51.5%, 62.7%, 29.8% and 25.1% in Europe, America, Western Pacific Region and Africa respectively. In California nearly 1.3 million adolescents were involved in risky nutritional behaviour.

In Nigeria nutritional risk behaviours follow the same trend. Alarm has been raised by the Federal Ministry of Health (2018) over the increasing prevalence of unsafe nutritional behaviours by adolescents. Ochiaka (2019) in a study of dietary risk behaviours among in-school adolescents in Enugu State found that 76.9% engage in over eating, 86.3% eat food low in dietary fibre, 85.3% eat food low in protein and other dietary risk behaviours

Unsafe nutritional behaviour are frequent and unwise taking of food nutrients in inadequate proportion. Poor eating habits include under or over eating, not having enough of the healthy foods the body needs each day or consuming too many types of food low in fiber, or high in fats, salt and or sugar{Pius Josephat and Agozie (2014). These unwise eating habit can affect our nutritional intake including proteins, carbohydrates, essential fatty acids, vitamins and mineral salt as well as fiber and fluid. The imbalance nutrient consumption can lead to malnutrition. (Pius, Josephat and Agozie (2014) defined malnutrition as the state of nutrition where the weight for age, height for age and weight for height indices are below -2



Z-score of the NCHS references. This condition according to the authorities constitute a major public health problem in developing countries especially Nigeria and serves as the most important risk factor for burden of diseases especially among adolescents. Borrowing from the American dietary guidelines, three cardinal points are necessary in eating properly. They include aiming for fitness, building a healthy base and choosing sensibly what to eat. Okafor (2018) reported that these three cardinal points had been made most difficult if not impossible to attain by people's disposition towards food myths, taboos and beliefs. Although, eating habits have a sustainable impact on health and quality of human life, five of the leading causes of death (Coronary Heart Disease, kidney diseases, cancer, stroke and adult-onset diabetes) are nutritional related (Okafor, 2018).

Onuoha and Obukokwo (2010) stated that while unsafe nutritional habit impact seriously on the health of individuals its prevalence has increased in recent decade with most of it occurring in developing countries. In Sub-Sahara Africa, evidence of unsafe nutritional behaviour has been established among the youths regardless of educational level (National Survey on Nutritional Behaviour and Health. 2017). Here in Nigeria, Ochimus (2014) found that poor dietary behaviours were very common among college students and young adults many of whom were first introduced to in family setting by their parents out of ignorance. For instance, WHO (2019) reported that Nigerians has the second burden of stunted children and youth in the world with a national prevalence rate of 32% of children under five and 28% of the youth under 12 and 22 years. These are the age of adolescents in secondary school. Continuing, WHO (2020) reported that an estimated 2 million children and youths in Nigeria suffer from severe acute malnutrition (SAM), but only two out of every 10 affected is currently reached with treatment. Johnhill (2012) reported 61% of dietary risk behaviours among undergraduate students of University of Port Harcourt. Emmauel, Morah, Sewany and Olaniyi (2017) reported that the prevalence of alcohol use, which is part of nutrition, among secondary school teachers in South West Nigeria was 1.4% in the last 12 months; 80 (75.4%) male and 68 (56.6%) female, teachers drank alcohol. This consumption is considered high. In some countries, some set of individual unsafe nutritional behaviour is found not to be high. For instance, Maurice, Darius and Vedaste (2015) reported that dietary risk behaviours among Rwanda youths was 34% which they considered low. This shows that unsafe nutritional



behaviours is not a matter of ethnicity but a matter of habit and lifestyle. Luza and Viries (2010) reported that there is no significant differences between senior high school students and university students in Romania regarding risk dietary behaviour in the last two months. No one knows what the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka Local Government Area will be.

Unsafe nutritional behaviours, among adolescents and young youths has a mirage of problems which has a negative impact on their health. It is a major risk factor for cardiovascular disease and stroke, type 2 diabetes and cancer which has been recognized as a leading cause of death among adolescents and young youths in the United States of America (Malta, Mascarchus, Porto (2011). Nutritional deficiencies and poor eating habits established during adolescent can have long-term consequences including delayed sexual maturation, loss of final adult height, osteoporosis, hyperlipidemia and obesity (Ochimus,2017). Chudubem (2011) listed the following as the health problems of poor nutrition; overweight, or obesity, tooth decay, high blood pressure, high cholesterol, heart disease and stroke, type 2 diabetes, osteoporosis, some cancers, depression and eating disorders. Excess consumption of sugar and other sweet things appear to adversely affect the nervous system, impaired behaviour pattern and attitude. Excessive intake of salt and other sodium containing additives could trigger headache in some people (Chidubem, 2011).

Unsafe nutritional risk behaviours have been known to be associated with certain demographic variables. Such demographic variables among others include gender, location and educational level (class level). Gender as a variable has been widely discussed in the field of health. Enebechi and Ejike (2010) defined gender as the characteristics and expected behaviour and roles of men and women which a particular society has deemed against such sex. The definition implies that gender is the categorization of people into male and female. It is claimed that it is a serious factor influencing the nutritional behaviours of people. For instance, Okechukwu and Adani (2017) found in their study that there is a significant difference between the male and female adolescent of senior secondary school in Anambra State in their exhibition of unsafe nutritional behaviour. Male gender has been reported by Joel and Sharoh (2017) as a significant socio-demographic characteristic associated with dietary risk behaviours among secondary school teachers in South West Nigeria. A study by



Schwartz et al (2010) revealed that gender differences with regards to health risk behaviours vary with country and regions or locations as may be termed.

Location are delineated into urban and rural setting which are regarded as epidemiological spaces. Location refers to variety of different epidemiological spaces occupied by people (Ezema, 2014). Organisation of people into these epidemiological spaces could predispose them into involvement in health risk behaviours. The author further added that lower income per capital which is more prominent in the rural setting has been associated with accumulation of unsafe nutritional behaviours. On the same hand, the rural setting provides some cultural conditions that may promote or reduce unsafe nutritional behaviours than the urban area. Aquodo (2018) reported that dietary risk behaviour of secondary school students in Enugu East LGA of Enugu State are predicted by location.

Apart from gender and location, educational level or class level is another demographic variable that has been identified to be associated with health risk behaviours. Education level here means upper basic (JS) and senior secondary school (SS). The level of one's education has been known to influence certain conditions. Since the secondary school adolescents fall into different educational level (classes), it will be rewarding to determine the relationship between unsafe nutritional behaviours and the adolescent's educational level (Emmanuel, 2017).

Adolescent is a young person who is no longer a child but who has not yet become an adult. United Nations Emergency Fund (UNICEF) (2015) sees adolescents as individuals between the ages of 10 and 19 years who constitute approximately twenty percent of the world population. WHO (2014) chronologically describes adolescents as a span of life which comes roughly between 10-19 years of age. It is a phase of maturation; a transition period of physical and psychological human development between childhood and adulthood, the cultural purpose of which involves preparation to assume adult roles. Secondary school adolescents are the adolescents in secondary school.

Adolescent age is often characterized by confusion, exuberance, desire for independence, zealousness, curiosity, and penchant for experimentation especially with drug,



sex, alcohol and certain kind of food. Many adolescents manage this transition successfully while others experience major stress and find themselves engaging in behaviours (eg. Risk dietary behaviours) that place their health and well being at risk. This characteristic nature of adolescents makes them more prone to unsafe nutritional behaviours, hence worthy of study.

The choice of secondary school adolescents was informed by the fact that cases of unethical behaviours associated with lifestyle have been reported more among them. The study of secondary school adolescent's unsafe nutritional behaviour is critical at this stage of their development because it is established that health risk behaviour which may be initiated in adolescents could become damaging in adulthood, if it is over looked at the onset. More especially considering the fact that these adolescents especially those of them in secondary school are assets and future hopes of their families, society and nation at large, usually seen as the leaders of tomorrow and that whatever affects them, affects the future of their families, society and nation. Due to the heavy burden that unsafe nutritional behaviours exert on the global burden of diseases (especially among adolescents) more especially its contribution to poor academic performance, it becomes pertinent that this study be carried out and necessary action taken if the.. unsafe nutritional behaviour is established.

### **Research Questions.**

To give direction to this study four research questions were raised to guide the study.

1. What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka Local Government Area?
2. What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA based on gender.
3. What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA based on location.
4. What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA based on education level?

### **Hypotheses**



The following hypotheses were formulated and tested at .06 level of significance.

1. There is no significant difference in the extent to which unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA is based on gender.
2. There is no significant difference in the extent to which unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA is based on location.
3. There is no significant difference in the extent to which unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA is based on educational level.

### **Method:**

Descriptive survey design was used for the study. This method was chosen because it is concerned with the present and it permits the description of the situation as they exist in their natural setting (Best 1977). The population for the study was 10221 secondary school adolescents from 31 secondary schools in Nsukka LGA. The sample size for the study was 398 which was determined by the use of Taro Yamene (1964) formula. Structured questionnaire titled "Unsafe Nutritional Behaviour Questionnaire (UNBQ)" was the instrument used for data collection. The instrument was validated by three experts, two from the Department of Human Kinetics and Health Education and one from Science and Computer Education Department, all in Enugu State University of Science and Technology (ESUT). Reliability of the instrument was established through the use of Cronbach Alpha statistics which yielded reliability coefficient value of 0.75.

The questionnaire was administered on the respondents with the help of 4 trained research assistants. Three hundred and eighty-nine (389) copies of the

instrument were administered on the sampled students but at the end 373 copies (161 males, 212 females, 192 urban and 181 rural, 208 upper basic (JS) and 165 (SS)) were correctly completed and returned giving a return rate of about 92%

Data collected were analysed using mean and standard deviation. To make decision, mean scores greater than 0.1 but less than or equal to 1.1 ( $0.1 < x \leq 1.1$ ) was regarded as Very low extent, mean greater than 1.1 but less than or equal to 2.1 ( $1.1 < x \leq 2.1$ ) was regarded as low extent, mean score greater than 2.1 but less than or equal to 3.1 ( $2.1 < x \leq 3.1$ ) was regarded as high extent, mean greater than 3.1 but less than or equal to 4.0 ( $3.1 < x \leq 4.0$ ) was



regarded as very high extent' (Anugwu and Asogwa, 2015). t-test statistics was used to test the three hypotheses at 0.05 level of significance. When the p-value is greater than .05 level of significance it means that the hypothesis stated is not rejected but when it is less than or below .05 level of significance the hypothesis is rejected

## Results

Data collected for the study was presented and analysed based on the research questions and hypotheses that guided the study.

### Research Question 1

What is the extent of unsafe nutritional behaviours among secondary school adolescents in Nsukka Local Government Area?

**Table 1: Mean Scores of the Secondary School Adolescents on the extent of unsafe nutritional behaviours in Nsukka LGA**

S/N	Items	X	SD	DEC
1	Eat in-between meal	2.99	.83	HE
2	Sometimes skip breakfast	2.98	.78	HE
3	Engage in over eating	2.28	.91	HE
4	Eat food low in dietary fiber	2.50	.84	HE
5	Drink too much sugar-based drink	2.59	.89	HE
6	Eat food low in carbohydrates	2.47	.79	HE
7	Eat food low in proteins	2.57	.83	HE
8	Eat food high in fats	2.52	.85	HE
9	Eat food low in vitamins	2.59	.80	HE
10	Eat too salty food	2.66	.82	HE
11	Eat food low in mineral	2.96	.76	HE
	<b>Grand mean</b>	<b>2.64</b>		<b>HE</b>

Table I shows 11 unsafe nutritional behaviour of the students. It indicates from the table that the students were involved in all the unsafe nutritional behaviours (ie items





1,2,3,4,5,6,7,8,9,10 and 11). This means that the unsafe nutritional behaviour of the secondary school adolescents is to a high extent.

### Research Question 2

What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA gender?

**Table 2: Mean Response Score of Male and Female Secondary School Adolescents on the Extent of Unsafe Nutritional Behaviours in Nsukka LGA**

S/N	Items	Male	DEC	Female	DEC
1	Eat in-between meal	2.49	HE	2.39	HE
2	Sometimes skip break fast	2.55	HE	2.29	HE
3	Engage in over eating	2.45	HE	2.41	HE
4	Eat food low in dietary fibre	2.54	HE	2.53	HE
5	Drink too much sugar-based drinks	2.62	HE	2.57	HE
6	Eat food low in carbohydrate	2.75	HE	2.71	HE
7	Eat food low in proteins	2.77	HE	2.73	HE
8	Eat food high in fats	2.79	HE	2.77	HE
9	Eat food low in vitamins	2.81	HE	2.72	HE
10	Eat too salty food	2.99	HE	2.75	HE
11	Eat food low in minerals	2.85	HE	2.57	HE
	<b>Grand mean</b>	<b>3.70</b>	<b>HE</b>	<b>2.59</b>	<b>HE</b>



Table 2 shows the unsafe nutritional behaviour among male and female students. It shows that the mean for male adolescent ranges from 2.45 to 2.99 with a grand mean of 3.70. on the other hand, the mean of female adolescent ranges from 2.29 to 2.77 with a grand mean of 2.59. This shows that both male and female secondary school adolescents are involved in unsafe nutritional behaviours to a high extent with male higher than female.

### Research Question 3

What is the extent of unsafe nutritional behaviours among secondary school adolescents in Nsukka LGA by location.

**Table 3: Mean Response Score of Urban and Rural Secondary School Adolescents on the Extent of Unsafe Nutritional Behaviour in Nsukka LGA**

S/N	Items	Urban	DEC	Rural	DEC
1	Eat in-between meal	2.49	HE	2.41	HE
2	Sometimes skip breakfast	2.57	HE	2.29	HE
3	Engage in over eating	2.43	HE	2.51	HE
4	Eat low in dietary fiber	2.54	HE	2.60	HE
5	Drink too much sugar-based drink	2.61	HE	2.71	HE
6	Eat food low in carbohydrate	2.72	HE	2.73	HE
7	Eat food in low proteins	2.75	HE	2.79	HE
8	Eat food high in fats	2.79	HE	2.81	HE
9	Eat food low in vitamin	2.81	HE	2.75	HE
10	Eat too salty food	2.89	HE	2.59	HE
11	Eat food low in minerals	2.77	HE	2.47	HE
	<b>Grand mean</b>	<b>2.63</b>	<b>HE</b>	<b>2.47</b>	<b>HE</b>

Table 3 above shows that the mean for urban adolescent's ranges from 2.43 to 2.89 with a grand mean of 2.63. On the other hand, the mean of rural school adolescents ranges from 2.29



to 2.81 with a grand mean of 2.47. This shows that both urban and rural see school adolescents are involved in unsafe nutritional behaviour to a high extent with urban higher than the rural adolescent.

#### Research Question 4

What is the extent of unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA based on education level?

**Table 4: Mean Response score of upper basic and senior secondary (ss) adolescents on the extent of unsafe nutritional behaviour**

S/N	Items	Upper basic	Dec	SS	Dec
1	Eat in-between meal	2.23	HE	2.55	HE
2	Sometimes skip breakfast	2.32	HE	2.57	HE
3	Engage in over feeding	2.35	HE	2.49	HE
4	Eat low in dietary fiber	2.52	HE	2.61	HE
5	Drink too much sugar-based drink	2.55	HE	2.69	HE
6	Eat food low in carbohydrate	2.52	HE	2.75	HE
7	Eat food in low proteins	2.63	HE	2.81	HE
8	Eat food high in fats	2.57	HE	3.13	HE
9	Eat food low in vitamin	2.51	HE	3.51	VHE
10	Eat too salty food	2.53	HE	3.23	VHE
11	Eat food low in minerals	2.63	HE	2.83	HE
	<b>Grand mean</b>	<b>2.49</b>	<b>HE</b>	<b>2.83</b>	<b>HE</b>



Table 4 above shows that the mean for upper basic (SS) adolescents ranges from 2.23 to 2.63 with a grand mean of 2.49. On the other hands, the mean for Senior Secondary (SS) adolescents ranges from 2.49 to 3.51 with a grand mean of 2.83. This shows that both upper basic adolescents and senior secondary adolescents are involved in unsafe nutritional behaviour to a high extent with senior secondary (SS) students higher than the upper basic adolescents.

### Hypotheses

Ho1: There is no significant difference in the extent to which unsafe nutritional behaviours among secondary school adolescents in Nsukka LGA is based on gender

**Table 5; Summary of t-test Analysis of Difference Between Male and Female Secondary School Adolescents on the Extent of Unsafe Nutritional Behaviour in Nsukka LGA**

Gender	N	$\bar{X}$	df	P-Value	DEC
Male	161	2.70			
Female	212	2.59	371	.040	Reject Ho1

Data in table 5 above shows that the p-value for unsafe nutritional behaviour (.040) is less than 0.05 level of significance(  $p < 0.05$  ). Therefore, the null hypothesis was significant or rejected.

Ho2: There is no significance difference in the extent to which unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA is based on location.

**Table 6. Summary of t- test Analysis of Difference Between the Urban and Rural Adolescents on the Extent of Unsafe Nutritional Behaviour.**

Location	N	$\bar{X}$	df	P-Value	DEC
Urban	192	2.73			



Rural	181	2.54	371	.000	Reject Ho2
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Data in table 6 above shows that the p-value for unsafe nutritional behaviour (.000) is less than .05 level of significance ( $p < .05$ ). Therefore, the null hypothesis was significant or rejected. This means there is a significant unsafe nutritional behaviours between urban and rural secondary school adolescents

Ho3: There is no significance difference in the extent to which unsafe nutritional behaviour among secondary school adolescents in Nsukka LGA is based on education level.

**Table 7: Summary of t-test Analysis of Difference Between the Upper Basic and Senior Secondary School Adolescent on the Extent of Unsafe Nutritional Behaviour**

Education level	N	$\bar{X}$	df	P-Value	Dec
Upper basic	208	2.49			
Senior sec	165	2.83	371	.000	Reject Ho3

Data in table 7 above shows that the P-value for unsafe nutritional behavior “.000” is less than 0.05. Therefore, the null hypothesis was significant or rejected. It then means that is a significant difference between upper basic and senior secondary adolescent in the extent of involvement in unsafe nutritional behavior.

## Discussion

The finding pertaining to research question 1 showed that secondary school adolescent in Nsukka Local Government Area involve in unsafe nutritional behavior to a high extent (2.64). This finding is a bad omen though expected considering the economic situation in the country



which might have contributed to the observed situation. People find it difficult to engage in adequate and proper feeding more especially in the period of austerity in the country of which the students are inclusive. However, his finding is in consonance with okoja (2014) report which state that secondary schools in Anambra state are involved in poor dietary behaviour to a high extent. The present finding show that the adolescents breakfast and eat two times to a high extent. This might be because adolescents especially females are more interested in grooming, their physical appearance and shape. They always watch their weight and shape at all times which makes them starve. This disposition calls for concern due to the fact that the habit could be harmful to the digestive track as well as being detrimental to their physical, mental and emotional development. Eze and Nnmani “2014” recognized this in their report in which they stated that starvation was a harmful practice which should be discouraged. This finding is not a good development because this group of people need adequate nutrition to develop. This is a period of their growth and development.

The findings pertaining to research question 2 revealed that both male and female secondary school adolescent in Nsukka Local Government Area are involved in unsafe nutritional behavior to a high extent (males 2.70 females 2.59) Both male and female involvement in health risk behavior (unsafe nutritional behavior) to a high extent is not in agreement with the common sense that male indulge in risky behavior than female. This finding is in agreement with the finding of Ochiaka (2019) who found in his study that both females and males of in-school adolescent in Enugu state are involved in dietary risk behavior to a high extent.

The findings pertaining to research question 3 revealed that both urban and rural secondary school adolescents in Nsukka LGA are involved in unsafe nutritional behaviours to a high extent (urban 2.66 rural 2.47 This finding is not expected that rural secondary school adolescents be indicted with high involvement in unsafe nutritional behaviours. According to Ezema (2014) lower income capital which is more prominent in the rural area has been associated with the accumulation of unsafe nutritional behavior. On the same hand, the rural areas provide some cultural condition that may promote unsafe nutritional behaviour.

The findings pertaining to research question 4 shows that upper basic (JS) and senior secondary school(SS) adolescents in Nsukka LGA are involved in unsafe nutritional behavior



to a high extent(upper basic 2.49, SS 2.83). This finding is expected because both the upper basic and the SS students are all adolescents. Adolescents have almost the same eating habits. They eat too much because of their development and growth spurt.

The findings pertaining to hypothesis I revealed that the difference in unsafe nutritional behaviour between male and female adolescents is significant or dependent on gender. This means that gender has influence on the extent of unsafe nutritional behavior of adolescents. This finding is in disagreement with Ochiaka (2019) report which shows that no significant difference exists between male and female in-school adolescents of Enugu State in the extent of health risk behaviours which unsafe nutritional behavior is included. This finding agrees with that of Onuoha and Obukokwo (2010) who observed that alcohol drinking which is part of nutrition was more in males than females. This may be that males have more time to drink than female and society and culture frown more at women drinking alcohol than males

### **Conclusion**

Based on the findings of the study the following conclusions was made. Secondary school adolescent in Nsukka Local Government Area involves in unsafe nutritional behavior to a high extent. Also unsafe nutritional behavior of the school adolescent is not depend on gender, location and education level.

### **Recommendation**

Based on the findings of the study it was recommended among others that the state government through Post Primary School Management Board (PPSMB) should organize orientation program seminars and workshop for secondary school adolescent in the area of proper feeding.

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