

NUTRITIONAL BEHAVIOURS OF IN- SCHOOL ADOLESCENTS IN JIGAWA STATE, NIGERIA: IMPLICATION FOR SUSTAINABLE LIVELIHOODS

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Abstract

*The study examined the nutritional behaviour patterns of in- school adolescents in Jigawa State, Nigeria. The study adopted descriptive survey research design. A sample of 3,192 in-school adolescent representing two per cent of the population participated in the study. Proportionate stratified random sampling was employed to draw the sample for the study. The instrument used for data collection was In-school Health Risk Behaviour Questionnaire (ISAHRBQ). Two research questions and two hypotheses guided the study. Data collected were presented and analyzed using descriptive statistic of mean for the research questions, while *t* – test was used to test the null hypotheses at 0.05 level of significance. Results showed that female students never exhibited healthy nutritional (1.18 ± 0.57) behaviours, while male students exhibited healthy nutrition (2.31 ± 0.76) behaviours rarely. Urban and rural students exhibited healthy nutrition (Urban = 2.05 ± 0.30 ; Rural = 2.08 ± 0.65) behaviours rarely, There was significant difference ($p > 0.05$) in the mean responses of in- school adolescents regarding nutritional behaviours according to gender. There was no significant difference ($p > 0.05$) in the mean response scores of in-school adolescents regarding nutritional behaviours according to location. The study concluded that both urban and rural in- school adolescent exhibited healthy nutrition behaviours rarely. The study recommends that Jigawa State government should implement a sustainable livelihood nutrition initiative at school and community levels in order to improve adolescent's nutritional behaviours in all the secondary school in the state.*

Keywords: Patterns, Nutritional Behaviours, Adolescents, Sustainable Livelihoods.

Introduction

Phillip (2010) explained that food is needed to provide energy for movement and warmth for our bodies. The authors rated that food is needed to build, maintain, and repair the body, and good health starts with eating right, which means eating enough of the right kind of foods. A livelihood is a means of gaining a living; it is seen as adequate stocks and flow of food and resources to meet basic needs. Unfortunately, about half the global population is inadequately or inappropriately nourished due to food insecurity (Garnatt, 2014). In addition to these, insurgency in some parts of the world including some parts of Nigeria made livelihood unsustainable for many people, because food and shelter becomes inadequate. From the foregoing, once food is scarce or inadequate people may not have choice of what to eat thereby increasing the likelihood of consuming unhealthy food or food that is of less nutritional value. For a livelihood to be sustainable there should be adequate provision of food, shelter and land for farming. Studies (Brener et al. 2004). show the link between the development of chronic diseases and unhealthy food intake among people including adolescents.

Health risk behaviour among adolescents is a major health concern globally. This is because this behaviour is associated with serious life-threatening consequences among adolescents in both developed and developing nations, including Nigeria. The impact of health risk behaviours (HRBs) on health is of such magnitude that it has become one of the priorities of national and international health organizations (Rutter and Quine, in Baban & Cracium, 2007). These organizations have been initiating programmes with a view to curbing this menace.

The global estimates of some identified risk behaviours of significance to warrant global concern include, unhealthy nutrition that accounts for 1.7 million deaths yearly (World Heart

Federation, 2013). The aforementioned statistic is an indication of the growing global health challenges, which mostly occur through adoption of health risk behaviours by individuals, including adolescents. Brener et al. (2004) reported that Center for Disease Control - CDC in 1992 developed the Youth Risk Behaviour Surveillance System (YRBSS) to monitor priority health-risk behaviours. These behaviours were categorized into six, namely; substance use, unsafe sex, unhealthy nutrition, physical inactivity, violence and suicide. Study by South African National Youth Risk Behaviour Survey - (SANYRBS 2003) found that adolescent's engaged in health compromising behaviours. One of these is unhealthy nutritional behaviour. In-school adolescents in Jigawa State may not be an exception to this unhealthy nutritional behaviour. This is because the insecurity challenges in the northern part of Nigeria that involves violence, political crises and poverty may have negatively influenced adolescents into some unhealthy nutritional behaviours.

Nutrition is the process of using food by the body for the maintenances of health and well being. Nutrition is the science of ingestion and utilization of food nutrients by the body (Sizer & Whitney, 2011). While behaviour is defined as the way in which an individual behaves or acts, and the way an individual conducts himself (UNESCO, 2000). Therefore, when behaviour relates to nutrition it is referred to as nutritional behaviour. Nutritional behaviour can, therefore, be regarded as the way and manner individuals consume food for the maintenance of health. DeClemente, Hansen and Ponton (1997) asserted that behaviour can be desirable or undesirable. This shows that nutritional behaviours can also be healthy or unhealthy. Healthy behaviours are those acts that are capable of enhancing individuals' health. While unhealthy behaviours refer to those behaviours that are undesirable, and are capable of causing harm to the body or health. Similarly, nutritional behaviour can be categorized into healthy or unhealthy. Unhealthy nutritional behaviours can lead to morbidity and mortality. In-school adolescents may fall victims of unhealthy nutritional behaviours due to poverty, illiteracy and insecurity in the area.

Unhealthy nutritional behaviour can manifest in different patterns. Pridemore, Andrew, and Spivak (2003) and Avendo (2005) classified pattern into three forms as spatial, temporal and demographic. In this study the demographic pattern of gender and spatial pattern of location as they relate to unhealthy nutrition of adolescents were considered. Pattern according to Ryan, Sponseller, Stuart, and Fisher (2008) is the distribution, occurrence and characteristics of things, substance and events in an environment.

Knowing the nutritional behaviour of adolescents is very important because of their developmental process of rapid growth that needs proper nutrition. Adolescents are regarded as young people within the age range of 10 – 19 years (WHO, 1998; WHO, 2003). Mungrulker, Whiteman, and Posner (2001) asserted that by the year 2010 there could be more adolescents (ages 10-19) alive in the world than ever before, who will constitute about 20 per cent of the world's population with about 85 per cent of them in developing countries (Morhason et-al, 2008) and about 30 per cent of the total population in Nigeria (Muyibi, Ajayi, Irabor, Ladipo, 2010). Majority of adolescents are students in secondary schools or other educational institutions. Therefore, considering the above proportion of adolescents in the world, and in developing countries including Nigeria, attention should be given to this population group in order to protect them from effects of unhealthy nutrition.

There is a serious lack of comprehensive documented data on adolescent's unhealthy behaviours in developing nations including Nigeria (United Nations Children Fund, 2002). Although data on unhealthy behaviours of adolescents are sparse in Africa, the available data showed a higher prevalence and diverse patterns of adolescent unhealthy behaviours in sub-Sahara Africa, including Nigeria (Hawkins, 1994). Jigawa State is one of the northern states which is currently facing serious political and religious crisis involving violence, suicide, vandalization and killing. Considering these happenings, in-school adolescents may not be free from one form of unhealthy behaviour or the other in the State. Though literature or statistics in relation to unhealthy behaviours in the state is limited, casual observation by the researcher shows that in-school adolescents in the state may not be free from health risk- taking behaviour, especially unhealthy nutrition which is the focus of the present study. The nutritional behaviours among in-school adolescents in the state were therefore the focus of this study. The study specifically sought answers to the following questions.

1. What are the nutritional behaviours of in- school adolescents in Jigawa State according to gender?

2. How does the nutritional behaviours of urban and rural in- school adolescents in Jigawa State differ?

Two hypotheses were tested at .05 level of significance and they were:

1. There was no significant difference in the mean responses regarding nutrition behaviours of in-school adolescents in Jigawa State according to gender.
2. There was no significant difference in the mean responses regarding nutritional behaviours of in-school adolescents in Jigawa State according to location.

Methods

A descriptive survey research design was adopted. According to Ali (1996) this design describes conditions or situations of what is being investigated as they exist in their natural settings. The population for the study consisted of all the in- school adolescents in government owned secondary schools in Jigawa State, which numbered 159,586 in 483 secondary schools as at 2012/2013 session. The sample for the study consisted of 3192 students drawn through multistage sampling procedure. This involved a proportionate stratified random sampling technic.

The ISAHRBQ (In-school Adolescent Health Risk Behaviour Questionnaire) questionnaire was adapted from the National Youth Risk Behaviour Surveillance Questionnaire and it was used for data collection. Therefore, some items of 2013 National YRBQ were selected and modified, while other items in the questionnaire were not included for some obvious reasons. First, some of these items were considered not relevant to the variables of the study. Secondly, some were not relevant to the Nigerian background. Face validity of the instruments was established by five experts. The observations and comments of the experts were used for the production of the final copies of the questionnaire. Spearman Brown Prophecy Formula was used to determine the reliability of ISAHRBQ. This gave a reliability coefficient index of 0.80 which was high enough for the instrument.

The researcher and six research assistants administered 3192 copies of the ISAHRBQ to the subjects. A total of 3002 copies of the instrument were collected back from the respondents which gave 94.04 per cent return rate. Some of the copies were discarded as spoiled and 2886 (are 90.4%) were used for the analysis.

The data were analyzed on an item-by-item basis. Four- point response options of 'Always', 'Sometimes', 'Rarely', and 'Never' which were weighted 4, 3, 2 and 1 respectively were used. Mean response were used to answer the two research questions and real limit of numbers were applied to interpret each item as well as the cluster means. Therefore, mean response ranging between 1.00 – 1.99 were interpreted as 'Never', 2.00 – 2.49 were interpreted as 'Rarely', mean scores between 2.50 – 3.49 were interpreted as 'Sometimes' while 3.50 – 4.00 were interpreted as 'Always'. t- test statistic was used to test the two null hypotheses. The results of the analyses were presented in the relevant tables. Hypotheses formulated for the study were tested and decisions were taken at .05 level of significance.

Results

Table 1: Mean Responses of Nutritional behaviours among in- School Adolescents According to Gender (n= 2886)

Gender	Male (n= 1468)		Female (n= 1418)	
	\bar{X}	Decision	\bar{X}	Decision
Nutritional Behaviours				
18. Fasting to lose weight	1.31	Never	1.31	Never
19. Vomit/laxative to lose weight	1.06	Never	1.07	Never
20. Eating fruit	2.75	Sometimes	1.87	Never
21. Eating carbohydrate	3.70	Always	2.83	Sometimes
22. Eating vegetable	2.65	Sometimes	2.09	Rarely
23. drinking milk	2.42	Rarely	1.73	Never
Cluster mean	2.31	Rarely	1.18	Never

Table 1 shows the cluster mean scores of male and female (Male = \bar{X} = 2.31 > Female = \bar{X} = 1.18) in- school adolescents regarding nutritional behaviours. These scores fall between the mean of 2.00 – 2.49 for males and 1.00 – 1.99 for females. These imply that male in – school adolescents’ demonstrated healthy nutritional behaviours rarely while females never exhibited healthy nutritional behaviours.

Table 2. Spatial patterns of Nutritional behaviours among in- School Adolescents According to Location (n= 2886)

Items	Urban (n= 1440)		Rural (n= 1446)	
	\bar{X}	Decision	\bar{X}	Decision
Nutritional Behaviours				
18. Fasting to lose weight	1.62	Never	1.00	Never
19. Vomit/laxative to lose weight	1.13	Never	1.00	Never
20. Eating fruit	2.23	Rarely	2.40	Rarely
21. Eating carbohydrate	2.96	Sometimes	3.59	Always
22. Eating vegetable	2.24	Rarely	2.51	Sometimes
23. drinking milk	2.14	Rarely	2.02	Rarely
Cluster mean	2.05	Rarely	2.08	Rarely

Data in Table 2 show the cluster mean scores of urban and rural (rural = \bar{X} = 2.08 > urban = \bar{X} = 2.05) in – school adolescents regarding nutritional behaviours. These scores fall between the mean of 2.00 – 2.49 which imply that both urban and rural in- school adolescents exhibited healthy nutritional behaviours rarely.

Table 3. t- Test Analysis s Regarding the Nutritional Behaviours Among In- school Adolescents According to Gender (n= 2886)

Variable	N	\bar{X}	SD	t- cal	Df	P- value
Gender						
Nutrition Behaviours						
Male	1468	13.89	3.703	18.731	2884	.000*
Female	1418	10.90	4.807			

***Significant**

Data in Table 3 show the t- calculate value and the corresponding P- values of nutritional behaviours (t-cal= 18.73, P=.000). The P- values is less than .05 level of significance. Therefore, the null hypothesis of no significance difference according to gender was rejected. This implies that male and female in- school adolescents differed according to nutritional behaviours.

Table 4. t- Test Regarding Nutritional Behaviours Among in- school Adolescents According to Location (n= 2886)

Variable	N	\bar{X}	SD	t- cal	Df	P- value
Location						
Nutrition Behaviours						
Urban	1440	12.33	58.45	-1.082	2884	.279**
Rural	1446	12.51	2.643			

**** Not significant**

Data in Table 4 show the t-cal value and the corresponding P- values for:, nutritional behaviours (t-cal= -1.08, P= .279). The corresponding P- values for nutritional behaviour is less than .05 level of significance. The null hypothesis of no significant difference in nutritional behaviours of in- school

adolescents according to location is accepted. This implies that there is no significant difference in the nutritional behaviours of urban and rural in- school adolescents.

Discussion

The finding in Table 1 shows that male in-school adolescents rarely exhibited healthy nutritional behaviours, while their female counterparts never exhibited healthy nutritional behaviours. This result was not a surprise, and therefore in consonance with the finding of Bester and Schnell (2004) who reported that girls have more unhealthy eating habits than boys and they are more at risk of developing unhealthy eating behaviours. In addition, the finding of Allafi, Al-Haifi, Al-Fayez, Al-Athari, Al-Ajmi, Al-Hazaa, Musaiger and Ahmad (2013) found that male adolescents exhibited healthy nutritional behaviours than their females counterparts.

The finding in Table 2 in which in- school adolescents exhibited nutritional behaviours rarely irrespective of their location was not expected and it was surprising. This finding was surprising because urban adolescents are more expected to be knowledgeable in nutritional matters than their rural counterparts in rural areas. However, this finding is not consistent with the finding of Drewnowski and Popki (1997) who stated that urbanization is normally accompanied by improvement in food supply. This might influence adolescents eating habits and the quality of food they eat.

The finding in Table 3 indicated that there was a significant difference on nutrition behaviours of male and female in-school adolescent. This finding was expected and not surprising, because naturally adolescents differ in their developmental characteristics as well as in behaviours. The finding in Table 4 indicated that there was no significant difference in the mean response of nutritional behaviours of urban and rural in- school adolescents. This finding was surprising because urban adolescents are more expected to be knowledgeable in nutritional matters than their rural counterparts. Again availability and accessibility of variety of foods are more in urban than in the rural areas. Expectedly, urban adolescents should exhibit more healthy nutrition behaviours than their counterparts in rural areas (Drewnowski and Popki, 1997). Nonetheless, this finding is consistent with the finding of Hoffmann, Bryll, Marcinkowski, Rzesoś, Wojtyła, Pupek-Musialik (2012) who reported no statistically significant difference between rural and urban adolescents in dietary behaviours.

Implication for Sustainable Livelihoods

A livelihood is a means of gaining a living; it is seen as adequate stocks and flow of food and resources to meet basic needs. While sustainability refers to the maintenance or enhancement of resource productivity on a long – term basis (Chambers & Conway, 1991). Sustainable livelihood therefore, refers to the capability of individuals to enhance and maintain adequate resources for basic needs on a long – term basis. Food production and consumption as a means of livelihood should be sustainable, but it is unfortunate that the food system today becomes a source of danger. Garnatt (2014) reported that the food system today is destroying the environment upon which future food production depends. It contributes to some 20-30% of anthropogenic greenhouse gas (GHG) emissions and is a major source of water pollution making food production more difficult and unpredictable in many regions of the world. While the food system generates enough food energy for our population of over 7 billion it does not deliver adequate and affordable nutrition for all. About half the global population is inadequately or inappropriately nourished (Garnatt, 2014). In addition to these, insurgency in some parts of the world including Nigeria also made livelihood unsustainable for many people. Food and shelter becomes inadequate. From the foregoing, once food is scarce or inadequate people may not have choice of what to eat thereby increasing the likelihood of consuming unhealthy food or food that is of less nutritional value. Studies (Brener et al. 2004) show the link between unhealthy nutrition and the development of unhealthy behaviours among people including adolescents.

Adolescents are said to be leaders of tomorrow who are the backbone of any nation's economy. Therefore, they should not be allowed to be destroyed by preventable health risk behaviour which is capable of leading to morbidity and mortality. Unhealthy nutritional behaviour is one of the health risk behaviours confronting adolescents. Phillip (2010) explained that food is needed to provide energy for movement and warmth for our bodies, and good health starts with eating right, which means eating enough of the right kind of foods. In-school adolescents may fall victims of food insecurity, which could lead to unhealthy nutrition due to the fact that poverty is on the increase especially in the study area because of joblessness, serious economic burden worsened by insecurity situation in the neighbouring

states. For these reasons, adolescents who are dependent on their parents may not have the chance of choosing what to eat. It is important to note that access to good nutrition will enhance the health of adolescents, and lack of good nutrition will be detrimental to their well being. Studies show that extreme poverty, inequality, social exclusion, deprivation due to internal migration and displacement, exposure to violence and abuse can lead to vulnerability to food insecurity (Young, Brown, Frize & Khogali, 2001).

The findings in the present study revealed that in – school adolescents rarely exhibit healthy nutritional behaviours which is counterproductive for sustainable livelihoods. In order to overcome these challenges there is a need for sustainable livelihood initiatives. Sustainable livelihoods refers to a livelihood that comprises the capabilities, assets (including both material and social resources), and activities required for a means of living (Krantz, 2001). A livelihood is sustainable when one can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.

To achieve sustainable livelihoods, Krantz (2001) reported a set of core sustainable livelihoods principles, which include among others the following: Putting people and their concerns at the centre, recognizing their current livelihood strategies, social environment, and adaptability and using responsive and participatory processes to identify priorities;

Adolescents and their families' nutritional behaviour can be improved by means of initiating sustainable livelihood strategies that put in to action these principles. This is because, according to Brown (2001) adolescents are important resources within families and communities, not only because of their potential as tomorrow's adults but also because they often make contributions to household livelihood and are part of today's human capital base. Improving nutrition behaviours through care groups, strengthening micronutrient intake through household gardens, increased incomes through improved value chains by increasing agricultural diversification, improving access to production inputs and the management of production outputs (e.g. storage, processing, and commercialization) are very important to achieving sustainable livelihoods (Project Concern International – PCI, 2013). In addition to these initiatives, there should be regular nutrition education seminars and workshops in schools and communities, emphasizing adolescent participation.

Conclusion

Based on the findings of the study, it was concluded that female never exhibited healthy nutritional behaviours, while male students exhibited healthy nutritional behaviours rarely. Urban and rural students exhibited healthy nutritional behaviours rarely. There was significant difference in nutritional behaviours of male and female in-school adolescents while urban and rural in-school adolescents' nutritional behaviours were the same.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Government should initiate a sustainable livelihood strategy (increased incomes through improved value chains by increasing agricultural diversification, improving access to production inputs and the management of production outputs) at school and community levels to empower adolescents and their families.
2. Nutrition education of adolescents at all school levels should be emphasized.
3. Government in collaboration with NGOs should organize workshops and seminars on food security and nutrition.

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