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Importance of Milk Consumption in the Diet of Secondary School Students in Nigeria

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Abstract: The purpose of this study was to investigate the importance of milk consumption in the diet of secondary school students in Ibadan North and Akinyele local government areas of Oyo State, Nigeria. Questionnaire was used to elicit information from the students and simple randomly sampling was used to select forty students each from public secondary schools students of urban and rural areas and also forty students from private secondary school in both rural and urban areas. The sample consisted of equal number of males and females. Frequency distributions and percentages were calculated. Student's t-test was used to determine whether there is significant difference between milk consumption and developmental indices of students. The findings revealed that respondents' preference was more to liquid than powdered milk while the purchasing power was also in-like manner. The private secondary school students had the highest daily consumption rate and purchasing power than the public school students. The results further revealed that there were statistical differences in height of students (both sexes) of the rural and urban secondary school students while there was no significant difference in the weight and forearms of private and the public secondary school students in both urban and rural. Milk is important in the diet of secondary school students since they are in their developmental stages of life, therefore the study recommends the introduction of school milk programme sponsored by government. Also, nutritional education should be introduced to academic curriculum of secondary school.

Key words: Importance, milk, milk consumption, students

INTRODUCTION

Food plays a major role in youth physical, psychological and mental development to evolve in a virile and mentally stable nation builder. But the one that is found in abundance, is the carbohydrate rich foods amongst are cereals, root and tubers which are mainly energy providing food stuff and minor quantity of other nutrients which are not adequate in quantity and quality to enhance the mental stability of our growing youth but only make them mal-nourished and highly vulnerable to diseases due to their low immune system. This of course led to gross infant mortality rate before they reach adolescent age, which is the growing age of attaining the role of nation building. This gross mortality rate is giving the government a lot of concern since they are our potential human resources of tomorrow. Depending on a person's living situation, available food supply, and health condition, individual nutritional status varies (Stanek, 1990). Evidences of optimal nutrient are well-developed body, ideal weight for body composition (ratio of muscle mass to fat), height, good muscle development and bone. (Formon and Ziegler, 1989). The skin is smooth and clear, the hair is glossy and the eyes are clear and bright. All these are brought about by protein and a good source of which is milk. Well-nourished persons are much more likely to be alert-mentally and physically. They are not only meeting their

day-to-day needs but also maintaining essential nutrient reserves for resisting infections diseases and generally extending their years of normal functioning.

It is enough to note that the dietary habits established in childhood persist into the adult life. Hence, the general objective of this research was to evaluate the importance of milk consumption in the diet of secondary school students in Ibadan North and Akinyele local government areas of Oyo State, Nigeria and the specific objectives comprise the following ensuing points:

- Examination of rate of milk consumption by the respondents.
- Determination of the respondents' purchasing power.
- Determination of the respondents' preference for evaporated and powdered milk

MATERIALS AND METHODS

The study used a survey design for data collection. By the use of simple randomization method, twenty males and twenty female students were selected from public secondary schools in both rural and urban areas. Also, equal number of students (20 males and 20 females) were randomly selected either from private secondary schools in rural or urban areas. This gave a total number of 120 respondents. A questionnaire was developed to measure the importance of milk

consumption in the diet of secondary school students in Ibadan North and Akinyele local government areas of Oyo State, Nigeria.

The questionnaire contained four parts: Part one contained importance of milk consumption to the development. Part two contained measurement of some developmental indices like weights (W), height (H), forearm (F) and chest sizes (C). Part three contained the respondents' preference for the kind of milk and their purchasing power. Part four contained the rate at which the respondents consume milk.

Test for validity and reliability were done by giving the instrument to the experts in the faculties of agriculture and education of the University of Ilorin and also it was pre-tested in some secondary schools in Kwara state respectively.

Data were analyzed using descriptive statistics such as frequency, percentage and mean score. Student's t-test (inferential statistic) was used to determine whether there was significant difference between milk consumption and developmental indices of students.

RESULTS AND DISCUSSION

Importance of milk consumption in the diet of secondary school students: The results in Table 1 revealed that all the respondents (100.0%) were aware that consumption of milk aids growth and development and majority (98.33%) also indicated that milk is used in the feeding of babies, expectant and nursing mothers, old people and adolescents. High percentages (90.00%) also agreed that milk also aids ideal weight for body composition (ration of muscle to fat), height and good muscle development. This was in line with the work of Stanek (1990). Many of them (81.67%) indicated that they drank milk due to its nutritional value, it makes the skin smooth and clear, the hair is glossy and the eyes are clear and bright and maintain essential nutrient reserves for resisting infectious diseases and generally extending their years of normal function (Stanek, 1990). Less than half of the respondents (46.67%) indicated awareness of proteinous value of milk. Although this was amazing but it is likely that they thought that since milk is not compulsorily meant for daily uses due to their low educational background and showing interest in taking milk.

Developmental indices: Milk consumption did not show any significant difference in the body weight of males and females school students in neither private nor public secondary schools (Table 2). This thus revealed the fact that physiological variation between the two sexes does not have any relation with their nutritional status. This confirms the findings of Hitchcak and Gracey (1980) who reported that there was no significant difference in the body weight of adolescent living in Perty, Australia.

There was no difference in the forearm circumference for both sexes drawn from public (both rural and urban) and private secondary school students. This may be attributed to the fact that protein diet has nothing to do with the enlargement of the muscle of the forearm; although carbohydrate rich diet and strenuous physical activities may enhance the enlargement. This conforms to the study of Hussain and Akinyele (1980) that there was no significant relation between arm circumference and tricipital skinfold thickness in a group of Nigeria village adolescent.

A significant increase in the chest size was observed among the males of private secondary schools than that of their females' counterparts. This might be due to increase in the basal metal metabolic activities engaged in by males with attendant large respiratory tract which may necessitate the increase in chest size in male than females through enhance metabolism of the milk protein which thus aid their utilization to the cells, tissues and muscle. Thus, further vindicated the result of Brozhek (1980), Hussain and Akinyele (1980) who reported a good relation between protein rich diet and increase in chest size. The results in Table 2 further shows that consumption of milk does not have any relationship with sex of students drawn from private secondary schools. This thus, conformed to the results of Hitchcak and Gracey (1980), Black (1990) who reported no significant difference in the mean heights of students in Australia. While in public urban school, there were significant differences in the height of female students when compared to that of male students hence males are taller than females. This further agreed with the findings of Hitchcak and Gracey (1980) that boys of the richer group were significantly taller than females from the same group.

Consumption preference and purchasing power: The consumer's preference responses as shown in Table 3 revealed that liquid milk was more favoured than powder milk by school students from the three groups of classification but with a parallel purchasing power. Majority preferred liquid milk to powdered according to various school categories as follows: 72.5% (urban); 62.25% (rural) and 67.50% (private). There was a high purchasing power for powdered milk and this could be attributed to the cheap prices in relation to the retail sizes of liquid milk. While the low purchasing power of liquid could be due to its exorbitant price. The result was in agreement with the finding of Tanyeri-Abur and Parr Russon (1997) who reported that demand for fluid milk is most responsive to price changes and non-fat dry milk demand is elastic with respect to its own price.

The results obtained in Table 4 revealed that more than half of the respondents from private (68.75%) and urban public (52.5%) schools consumed milk daily while less than one third (32.5%) of the students in rural secondary schools consumed milk on daily basis.

Table 1: Importance of milk consumption in the diet of secondary school students

Importance	Frequency	Percentage
Aids growths and Dev.	120	100.00
Feeding of babies, expectant and nursing mother	118	98.33
Aids weight for body composition	108	90.00
Has proteinous values	56	46.67
Has nutrient composition	98	81.67
Makes the body smooth and clear	98	81.67

Source: Field survey, 2008.

Table 2: Showing the development indices of the respondents

URBAN-Public (%)								RURAL-Public (%)							
Female				Male				Female				Male			
W	H	F	C	W	H	F	C	W	H	F	C	W	H	F	C
46	5.0	13	15	66	5.1	13	14	59	5.8	12	17	56	5.3	10	15
53	5.8	13	15	60	5.2	13	15	53	5.1	10	14	49	4.8	11	14
53	5.1	13	16	58	4.7	12	15	52	5.5	10	17	60	5.2	11	15
53	5.1	14	16	57	4.7	13	16	62	5.5	11	16	54	5.5	11	15
51	5.5	14	15	48	5.0	14	14	56	5.6	11	18	54	5.2	10	16
55	5.4	14	14	49	5.7	14	15	48	5.6	12	14	52	5.5	9	16
45	5.4	14	15	47	5.4	14	15	56	5.5	12	14	58	5.3	10	16
57	5.5	14	16	48	4.3	14	16	47	5.2	11	13	56	5.0	11	15
54	5.4	13	16	37	5.0	15	14	56	5.8	15	13	47	4.9	12	14
49	5.1	14	14	44	5.2	13	15	46	5.5	11	14	52	4.3	11	14
55	5.6	15	15	47	5.2	13	15	49	5.6	12	15	52	4.8	11	14
52	5.4	13	15	44	4.8	15	15	51	5.6	11	16	53	4.7	11	17
51	5.4	14	16	45	5.2	13	15	57	5.4	10	17	59	5.7	12	15
54	5.5	13	17	48	5.1	15	15	52	5.4	12	19	50	4.5	12	14
56	5.3	14	15	55	4.9	14	15	53	4.5	11	19	54	5.5	13	15
46	5.1	15	17	42	5.3	13	16	55	5.1	12	15	55	5.3	11	15
51	5.0	13	15	45	4.6	12	14	66	5.3	11	16	55	5.3	11	14
42	5.3	15	16	42	4.6	13	15	59	5.8	12	15	56	5.2	11	15
53	5.2	12	16	43	5.0	14	14	54	5.5	12	14	57	5.4	12	15
55	5.1	13	15	47	5.1	14	15	54	5.4	12	15	55	5.3	11	15

Table 2: Continue

Private%							
Male				Female			
W	H	F	C	W	H	F	C
48	5.5	13.3	14	81	5.9	14.5	16
47	5.5	13.5	14	54	5.6	13.5	14
49	5.6	14.0	15	53	5.5	13.3	14
51	5.5	13.5	14	45	5.1	13.5	14
59	5.4	15.0	16	52	5.1	13.3	14
56	5.5	14.0	15	50	5.3	13.5	14
54	5.8	14.0	14	53	5.7	14.0	15
52	5.5	13.5	14	54	5.4	14.3	14
61	5.7	13.0	16	47	5.0	13.0	14
14	69	5.8	14.0	15	52	5.6	13.5
51	5.8	15.8	16	68	5.1	13.0	15
49	5.5	13.5	15	56	5.6	13.3	13
15	54	5.5	14.0	15	51	5.4	13.3
14	48	5.0	13.0	15	51	5.0	13.0
51	5.6	13.0	14	54	5.3	13.8	14
52	5.8	14.5	15	59	5.4	14.0	14
14	44	5.1	12.8	15	44	5.5	13.5
15	50	5.2	13.5	15	56	5.4	14.0
57	5.5	14.0	15	50	5.1	14.0	13
53	5.4	13.0	16	48	5.2	13.5	14

Legend: W-Weight, H-Height, F-Fore-arm, C-Chest breadth

Testing of hypothesis: The null hypothesis stated that there is no significant difference between milk consumption and developmental indices of students and the results in Table 5 showed that there was no

significant difference between milk consumption and weight of forearms of student from privates (P), rural-public (R) and urban-public (U) schools for both sexes (m-male and f-females). The results further showed that

Table 3: Respondents consumption preference and purchasing power

	Consumption Preference		Purchasing Power	
	Powder	Liquid	Powder	Liquid
Urban-Public	27.50	72.50	62.5	37.50
Rural-Public	38.75	62.25	38.75	35.00
Private	32.50	67.50	65.0	61.50

Source: Field Survey, 2008.

Table 4: Consumption rate of the respondents

	Daily	Weekly	Monthly	Occasionally
Private	68.75	25.00	-	0.25
Urban-Public	52.50	36.55	2.5	10.50
Rural-Public	32.50	47.50	5.00	15.00

Source: Field Survey, 2008.

Table 5: Showing importance of milk consumption on the developmental indices of the respondents

	t-cal.	t-tab	Remark
Weight			
Pm and Pf	0.51	2.09	NS
Um and Uf	1.69	2.09	NS
Rm and Rf	0.02	2.09	NS
Height			
Pm and Pf	2.01	2.09	NS
Um and Uf	3.09	2.09	Sig.
Rm and Rf	3.20	2.09	Sig.
Forearm			
Pm and Pf	0.78	2.09	NS
Um and Uf	0.19	2.09	NS
Rm and Rf	1.16	2.09	NS

Source: Field survey, 2008. Legends: Pm- Males respondents from private secondary schools, Pf Females respondents from private secondary schools, Um- Males respondents from public urban secondary schools, Uf Females respondents from public urban secondary schools, Rm- Males respondents from public rural secondary schools, Rf Females respondents from public rural secondary schools.

there were significant differences between milk consumption and height of student from rural-public (R) and urban-public (U) schools for both sexes. The finding showed that sex of the respondents was independent of the weight and forearm of various school groups while they were found to be significantly different in the height of public urban and rural school students.

Conclusion: Most of the students were aware of the importance of milk to their development and they consumed milk on daily basis except respondents from urban public secondary schools. Liquid milk was preferred to powdered milk by school student from the

three groups of classification but purchasing power was toward the powdered milk due to its availability, size of various forms and its afford ability in terms of price. There was no significant difference between milk consumption and developmental indices of students except for the height of the respondents. The study therefore recommends the following:

- School milk programme should be introduce in all our public secondary schools having realized its importance to enhance proper and adequate development of youth who are the leaders of tomorrow.
- More emphasis should be placed on nutritional education in the school curriculum in all public schools.
- Parent and guardians should be adequately informed on the importance of good nutrition on the proper development and safety of the health of their children and wards. This could be achieved through public talks and workshop in market places as well as during PTA meeting, in hospitals (ante-natal unit) and during the end of the year schools' parties.

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