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## ASSESSMENT OF NUTRITIONAL STATUS OF STREET URCHINS

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### **Abstract**

*This work is to assess the nutritional status of street urchins in kakuri, Kaduna state. The study was descriptive and cross sectional covering areas of kakuri, Kaduna state. A total of 89 children were sampled using snowballing technique. A well-structured questionnaire was used to assess socio-demographic variation, food habits and food frequency of the subjects. The entire subjects were males with ages from 6 to 20 years. 61.8% of the subjects were uneducated. Socio-demographic characteristics revealed that most of the occupation of the subjects' parents was majorly farming (39.3%) and petty trading (29.3%). 66.3% of the subjects were underweight, 18.0% were normal, 12.0% were overweight and only 3.4% were obese. The most frequently consumed foods were cereals, legumes and fruits. None of the subjects consumed animal protein up to two times in a week. Majority of the street children suffers from chronic malnutrition and are malnourished due to poor nutrient intake. The study revealed that the problem of malnutrition among the subjects is multi-facets and have various links to socio-economic and demographic factors as well as faulty or poor dietary practices. Hence the nutritional status of street urchins in Kakuri is poor. Urgent intervention efforts by the appropriate authorities to improve their access to nutritious foods and ultimately their nutritional status should be executed.*

**Keywords:** *Nutritional status, Street urchins, Malnutrition, Food habits*

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### **INTRODUCTION**

Malnutrition is the greatest single threat to global public health. Malnutrition is by far the largest contributor of child mortality globally. Severe hunger is especially prevalent among the street children who are most vulnerable to disease and live under extremely difficult conditions (Priya and Neelam, 2014). According to United Nations Office for Drugs control and Crime Prevention, (2006); street children are persons under the age of 18years who spend all or

most of their time on the streets, maintaining little or no contact with their families hence lacking supervision, protection and guidance. Generally, such children are identified as children on the street or children of the street. Children of the street are those who roam and seek shelter and economic opportunities within the streets while children on the streets are those who return to their homes at the end of the day (Scanlon *et al.*, 2001). Children leave their homes and come on the street because of the inter-connection and relationship between three reasons; poverty, family violence and allure of modernity, which have destabilize the traditional family structure, whose consequence is broken families and child abuse (Hatley *et al.*, 2005).

The bulk of street children are on the rise day by day and they may reach 800 million if apt initiatives are delayed to overcome the faced problems in this regards (Rita, 2010). There are 63% of them going to bed hungry and 53% are chronic malnutrition sufferers, 27million are severely underweight and 33million are not in school entry at all (UNICEF, 2007)

In spite of Nigeria's wealth, poverty is epidemic with 61.2% of the population living on less than \$1 a day (Nigerian poverty profile Report, 2010). This has led to an increase in the number of vulnerable street children, put at an estimate of fifteen million in Nigeria (Adegun, 2007).

Malnutrition is especially prevalent among street children who are most vulnerable to diseases and live under extremely difficult condition, deprived of basic amenities and facilities. They are directly exposed to the ill effects of environmental conditions. Moreover, they reside in very unhygienic conditions. The effects of malnutrition on human performance, health and survival have been the subject of extensive research for several decades and studies show that malnutrition affects physical growth, morbidity, mortality, cognitive development, reproduction, and physical work capacity (Pelletier and Frongillo, 2002). Malnutrition is an underlying factor in many diseases in both children and adults, and it contributes greatly to the disability-adjusted life years worldwide (Murray and Lopez, 2000). Malnutrition is particularly prevalent in developing countries, where it affects one out of every three pre-school age children (UN, 2004)

Factors that contribute to malnutrition are many and varied. The primary determinants of malnutrition, as conceptualized by several authors relate to unsatisfactory food intake, severe and repeated infections, or a combination of the two (UNICEF, 2000). The interactions of these conditions with the nutritional status and overall health of the child-and by extension-of the populations in which the child is raised have been shown in the UNICEF conceptual frame of

child survival(UNICEF,2000).Briefly, the model characterizes the correlates of malnutrition as factors that impact the growth of children. Consequently, the assessment of children's growth is a suitable indicator for investigating the wellbeing of children, and as well as for examining households' access to food, health and care (De Onis *et al*, 2003)

Malnutrition is a condition that results from an inadequate or excessive intake of nutrients (A P J C N, 2008). One child dies every five seconds as a result of hunger-700 every hour -16000 each day-6million each year – this accounts for 60% of all child deaths (Human Right Council, 2008). This problem is especially prevalent amongst children who are most vulnerable to diseases and adverse environmental conditions, with no assistance or guidance on how to maintain a well-balanced diet or even the guarantee of saving their next source of sustenance.

The objective of this work was to assess the nutritional status of street urchins in Kakuri, Kaduna State, based on the anthropometric indices of the respondents and their dietary intake using food habits and food frequency.

## **MATERIALS AND METHOD**

### **Study population**

The study was conducted in Kakuri a popular area in Kaduna state metropolis with an estimated population of over ten thousand people. The subjects were street urchins found in the street of Kakuri. Eighty-nine male children between the ages of 6 – 20 years old were selected. The study was descriptive and cross sectional covering areas of Kakuri, Kaduna state.

### **Sample Size/Sampling Techniques**

These subjects are mobile in nature, they change location at any given time depending on the drive for what they want, thus they are not easy to come by and their entire population cannot be accurately determined. However, for this purpose, snowballing sampling technique being a non-probability sampling technique was adopted to select the subjects (Table 1). A rough estimate of their number was obtained from the guardians of the subjects according to the directives of the social welfare unit of Kakuri local government secretariat from which the number of subjects for this study was obtained in two major areas.

Table1: Location, population and sample size

<b>Location</b>	<b>Population of subjects</b>	<b>Sample size</b>
Airport road	42	35

General pump (tap)	61	54
Total	103	89

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### Method of Data Collection

A well-structured questionnaire was self-administered with the following sections.

- i. Socio-economic and demographic data: This includes age of the subjects, religion, ethnic group, education level, occupation of the parents and household size
- ii. Anthropometric measurement: The standard measurement of their height and weight in meters and kilograms respectively using a calibrated heightometer rod and a portable mechanical weighing scale, and their body mass index (BMI).
- iii. Food frequency questionnaire: A seven day chart showing frequency of the consumption of a particular food group in a week.
- iv. Food habit: This shows how often the subject eats, the number of times and mode of acquisition.

### Equipment used for Data Collection

Anthropometric heightometer was used to measure heights of the subjects in (m) and weighing scale was used to measure weight in (kg) and the BMI was calculated to the nearest kg/m<sup>2</sup>.

### Ethical Consideration

The study protocol and letter of recommendation was submitted to the authority of the local government secretariat through the social welfare unit and leaders of the selected areas and assent approval from the selected subject was obtained.

### Data Analysis

The data was collected and analyzed using statistical package for social science (SPSS) software, version 20.0. The data generated was subjected to descriptive statistics such as (mean, standard deviation, percentage, and frequencies). The anthropometric measurements were analyzed using World Health Organization (WHO, 2008) classification.

### RESULT AND DISCUSSION

The entire subjects of study were males (100%) with no female (Table 2). The findings of Mercy and Adamu (2014) on the nutritional status of children in

Kastina state, revealed that a large number (81.9%) of the street children were uneducated (lack formal education). This relates to the result from this study that 61.8% of the subjects were uneducated save a few who were either opportune to have been to primary school by saving money to enroll themselves in school. Most of the parents of the subjects were low income earners (their occupations being peasant and petty trading) thus, living in poverty and hunger, hence, being a major reason behind their being on the streets. The finding of the Malawi Government in 2002 testifies to this fact stating that 65.2% of children are forced to leave home majorly because of poverty.

In this study, socio-demographic and economic reasons such as low family income, household sizes, and poverty are the reasons why these children are on the streets thus relating to the findings of Mercy and Adamu (2014) on the sanitary practice, Health and Nutritional Status of Street Children in Kastina Stated that 81.9% of the subjects are on the street due to socio-economic reasons. Almost half (48.3%) of the subjects fall between the age of 11-15years, this relates to the findings of Mercy and Adamu (2014) in Kastina that 41% of the subjects (street children) are within the age range of 11-15years. 64% of the subjects were houses.

In this study, 59.5% of the subjects eats three times a day, this is because, they are within the confines of people who believe strongly in charity and thus gives out food to these children, and this is in relation to the findings of Alexander and Chipwatali (2007) on dietary pattern and prevalence of wasting among street children in Lilongwe, Malawi about (65.2% of them). Most of the subjects (77.5%) do not snack save a few of them (22.5%) among those who snack, it is either once or twice in a week. This study reveals that 67.4% of the subjects obtain their food by means of begging. This is related to the findings of Rita et al., (2010) on Nutrients Intake and Nutritional Status of Street children in Bandung (Indonesia) but in contrast to the findings of Mercy and Adamu (2014) which revealed that 65.7% of street children (in Matazu village, Kastina State) eat meals prepared at home. This could be because the research was carried out in a rural area with a relatively small population where there is connection and contact between these street children and their parents. However, in this study all most all of the subjects have no contact or connection with their parents except a few thus denying them of the chance to eat at home leaving them with no option other than begging.

Globally, street children are chronic malnutrition sufferers as a result of their lifestyle (nomadic in nature), poor diet consumption, their environment as well as lack of access to health facilities, thus, they are underweight, stunted or wasted. For some, marasmic, with few being obese. The discovery from this study is not an exemption in this regard having 66.3% of the subjects as underweight among which majority are stunted and wasted with 61% of them being in the age range of 6-10years and 28.8% in the age range of 11-15years. This relates to the findings of other researchers on the nutritional status of street children with the likes of Mercy and Adamu (2014) in kastina state with 77.2% of them being

underweight, Neelam and Priya (2014) 43.7% and 47.2% being underweight and stunted respectively, in Eldoret (Kenya), 64.3% of street children were underweight (according to East African medical Journal, 2001), in Dhaka city 73% suffering chronic malnutrition.

In this study (Table 5), the major foods consumed by the subjects were mainly staple and starchy foods, fruits and legumes this is because they are the common foods found in the north and are less expensive (as in the case of fruits due to the presence of fruits tree around). However, these foods are not adequately balanced foods as thus they supply only a particular nutrient in large amounts neglecting others giving rise to nutritional deficiencies which give reasons why most of them were malnourished. This relates to the findings of Neelam and Priya (2014) in India indicating that 54.5% of the subjects were malnourished due to poor nutrient intake. Another report from Calcutta city (India) stated that 69.4% of the street children were undernourished (International Journal of Public Health, 2000),

Majority of the street children suffers from malnutrition due to poor nutrient intake. The present study revealed that the problem of malnutrition among them is multi-facets and had various links to socio-economic and demographic factors as well as faulty or poor dietary practices. Hence, the nutritional status of street Urchins in Kakuri, Kaduna state is very poor.

**Table 2: Socio- Demographic Characteristics of the Subjects**

<i>Variables</i>	<i>Frequency (F)</i>	<i>Percentage (%)</i>
<b><i>AGE (YEARS)</i></b>		
<i>1-5</i>	-	-
<i>6-10</i>	31	34.8
<i>11-15</i>	43	48.3
<i>16-20</i>	15	16.9
<b><i>ETHNIC GROUP</i></b>		
<i>Hausa</i>	57	64
<i>Others</i>	32	36
<b><i>RELIGION</i></b>		
<i>Islam</i>	89	100
<b><i>EDUCATIONAL LEVEL</i></b>		
<i>No education</i>	55	61.8
<i>Primary School</i>	24	57
<i>Secondary School</i>	10	11.2
<b><i>OCCUPATION OF PARENT</i></b>		

<i>Farmers</i>	35	39.3
<i>Traders</i>	26	29.2
<i>Civil servant</i>	9	10.1
<i>Others</i>	19	21.4
<b>HOUSEHOLD SIZE</b>		
<i>1-5</i>	15	16.9
<i>6-10</i>	53	59.5
<i>11-15</i>	13	14.6
<i>15 and above</i>	8	9

**Table 3a: BMI Classification of the Subjects**

<i>Variables</i>	<i>Frequency (F)</i>	<i>Percentage (%)</i>
<i>Underweight (&lt; 5<sup>th</sup> percentile)</i>	59	66.3
<i>Normal (5<sup>th</sup> percentile to &lt; 85<sup>th</sup> percentile)</i>	16	18.0
<i>Overweight (85<sup>th</sup> percentile to &lt; 95<sup>th</sup> percentile)</i>	11	12.4
<i>Obese (&gt; 95<sup>th</sup> percentile)</i>	3	3.4

World Health Organization (WHO, 2008) classification.

**Table 3b: Age Difference in BMI of the Subjects**

*Anthropometric Measurement*

<i>Age of subjects (Years)</i>	<i>Underweight</i>		<i>Normal</i>		<i>Overweight</i>		<i>Obese</i>		<i>Total</i>
	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	<i>F</i>	<i>%</i>	
<i>1-5</i>	-	-	-	-	-	-	-	-	-
<i>6-10</i>	36	61	0	-	1	9.1	-	-	37
<i>11-15</i>	17	28.8	11	68.8	4	36.4	-	-	32
<i>16-20</i>	6	10.2	5	31.2	6	54.5	3	100	20
<i>Total</i>	59	100	16	100	11	100	3	100	89

**Table 4: Frequency of Food Habit of the Subjects**

<i>Variable</i>	<i>Frequency (F)</i>	<i>Percentage (%)</i>
<b><i>How many times do you eat in a day?</i></b>		
<i>Twice</i>	11	12.4
<i>Three times</i>	53	59.5
<i>Four times</i>	13	14.6
<i>More</i>	12	13.5
<b><i>TOTAL</i></b>	<b>89</b>	<b>100</b>
<b><i>Do you snack?</i></b>		
<i>Yes</i>	20	22.5
<i>No</i>	69	77.5
<b><i>TOTAL</i></b>	<b>89</b>	<b>100</b>
<b><i>If yes, how often?</i></b>		
<i>Once in a week</i>	11	55.0
<i>Twice in a week</i>	78	45.0
<b><i>TOTAL</i></b>	<b>89</b>	<b>100</b>
<b><i>How do you obtain the food you eat?</i></b>		
<i>Prepared at home</i>	7	7.9
<i>Through begging</i>	60	67.4
<i>Purchased</i>	4	4.5
<i>Other means</i>	18	20.2
<b><i>TOTAL</i></b>	<b>89</b>	<b>100</b>
<b><i>In typical week, how many days do you eat fruits?</i></b>		
<i>Once</i>	5	5.6
<i>2 times</i>	5	5.6
<i>3 times</i>	9	10.1
<i>4 times</i>	13	14.6
<i>5 times</i>	19	21.4
<i>6 times</i>	15	16.9
<i>7 times</i>	23	25.8
<b><i>TOTAL</i></b>	<b>89</b>	<b>100</b>



*In a typical week, how many times do you eat vegetables?*

	16	18.0
<i>Once</i>	12	13.5
<i>2 times</i>	37	41.5
<i>3 times</i>	10	11.2
<i>4 times</i>	4	4.5
<i>5 times</i>	4	4.5
<i>6 times</i>	6	6.8
<i>7 times</i>	89	100
<b>TOTAL</b>		

**Table 5: Food Frequency of the Subjects**

	DAY 1		DAY 2		DAY 3		DAY 4		DAY 5		DAY 6		DAY 7	
	%	F	%	F	%	F	%	F	%	F	%	F	%	F
<b>FRUITS</b>														
<i>Orange</i>	5	5.6	13	14.6	23	25.8	5	5.6	9	10.1	15	16.9	19	21.4
<i>Mango</i>	23	25.8	19	21.4	15	16.9	13	14.6	5	5.6	9	10.1	5	5.6
<i>Guava</i>	4	4.5	9	10.1	21	23.6	16	18	11	12.4	13	14.6	15	16.9
<i>Cashew</i>	8	9	28	31.5	3	3.4	1	1.1	1	1.1	23	25.8	25	28.1
<i>Tangerine</i>	1	1.1	1	1.1	25	28.1	8	9	23	25.8	3	3.4	28	31.5
<i>Banana</i>	21	23.6	16	18	4	4.5	13	14.5	11	12.4	15	16.9	9	10.1
<i>Apple</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Watermelon</i>	4	4.5	15	16.9	9	10.1	16	18	13	14.6	11	12.4	21	23.6
<b>CEREALS/GRAINS GROUP</b>														
<i>Bread</i>	32	36	13	14.6	15	16.9	4	4.5	16	18	9	10.1	-	-
<i>Semolina</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pap</i>	32	36	20	22.5	-	-	17	19.1	15	16.9	5	5.6	-	-
<i>Millet</i>	23	25.8	19	21.4	13	14.6	9	10.1	15	16.9	6	6.7	4	4.5
<i>Rice</i>	11	12.4	-	-	25	28.1	-	-	28	31.5	-	-	25	28.1
<i>Spagetti/Indomie</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Wheat</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Tuwo</i>	28	31.5	12	13.5	20	22.5	11	12.4	18	20.2	-	-	-	-
<i>Maize</i>	30	33.7	28	31.5	11	12.4	-	-	8	9	-	-	12	13.5

**ROOTS AND TUBERS**

<i>Garri</i>	4	4.5	15	16.9	9	10.1	16	18	13	14.6	11	13.4	21	23.6
<i>Amala</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Yam Porridge</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Pounded Yam</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Boiled Yam</i>	-	-	41	46	-	-	23	25.8	25	28.1	-	-	-	-
<i>Eba</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fufu</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**LEGUMES AND PULSES**

<i>Beans</i>	30	33.7	-	-	20	22.5	19	21.3	10	11.2	8	9	2	2.2
<i>Akara</i>	23	25.8	19	21.4	13	14.6	15	16.9	9	10.1	6	6.7	4	4.5
<i>Moi-moi</i>	-	-	-	-	-	-	-	-	29	32.6	-	-	60	67.4
<i>Soybean product</i>	-	-	36	40.4	31	34.8	-	-	-	-	-	-	22	24.8

**FAT AND OIL**

<i>Palm oil</i>	24	27	19	21.3	21	23.6	11	12.4	4	4.5	10	11.2	-	-
<i>Margarine</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Vegetable oil</i>	-	-	-	-	41	46	48	54	-	-	-	-	-	-
<i>Groundnut oil</i>	11	12.4	27	30.3	10	11.2	20	22.5	4	4.5	9	10.1	8	9

**MILK AND MILK PRODUCT**

<i>Cheese</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Powdered milk</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Evaporated milk</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ice cream</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Yoghurt</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**PROCESSED FOODS AND BEVERAGES**

<i>Milo</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Bournvita</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Sweetened drink</i>	-	-	25	28.1	-	-	45	50	19	21.3	-	-	-	-
<i>Sugar</i>	46	51.7	-	-	-	-	-	-	-	-	23	25.9	20	22.5
<i>Tea</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**MEAT AND MEAT PRODUCTS**

<i>Beef</i>	-	-	21	23.6	-	-	-	-	36	40.4	-	-	32	36
<i>Offal</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Chicken</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Turkey</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Fish</i>	-	-	-	-	-	-	-	-	-	-	-	-	89	100

## CONCLUSIONS

Majority of the street children suffers from chronic malnutrition and are malnourished due to poor nutrient intake. The present study revealed that the problem of malnutrition among them is multi-facets and have various links to socio-economic and demographic factors as well as faulty or poor dietary practices. Hence, the nutritional status of street Urchins in kakuri is very poor.

## RECOMMENDATIONS

From the findings of this study I hereby recommend the followings:

- ❖ Urgent intervention efforts by the appropriate authorities to improve their access to nutritious foods and ultimately their nutritional status should be executed.
- ❖ The agenda of the past Governments in regards to educating every Nigerian child through the Universal Basic Education (UBE) program should be revisited and implemented just as the saying goes “knowledge is power” the more knowledge these street children acquire, the lesser they will become on the street and the better the nation will become.

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