Original Research Article

Nutritional Status of Children Residing In Social Welfare Hostel in Bangalore City

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Abstract:

Background: Health Care needs of children residing in Social Welfare Hostels is of utmost importance as they are in need of optimum health and nutrition care. **Methodology:** *Study Setting:* Social Welfare Hostel. *Study Design:* Cross sectional study. *Study Duration:* June to September 2013. *Study subjects:* Children(7-14yrs of age) residing in the Social Welfare Hostel. *Sample Size:* A total of 200 children were residing in the hostel and hence the complete enumeration of them were considered for the study (purposive Sampling). *Study variables:* Socio-Demographic profile, measurement of height, weight, estimation of Hemoglobin percentage by Sahli's method and clinical examination. Every child was examined physically from head to toe to assess their nutritional deficiencies. Enquiry was made about the health problems and occurrence of any ailment during previous two weeks. *Data Collection:* Using Semi- structured questionnaire, interview method. *Data analysis:* SPSS V 20. **Results:** Out of 200 subjects, 47(35.07%) of the study population were underweight, 71 (35.50%) had stunting and 38 (19%) had wasting. Prevalence of anemia was 47.5%. The common conditions observed were Flurosis (45.5%), skin problems (42.5%), dental caries (31.5%) and Cheilosis (24.5%). **Conclusion:** The nutritional status of children in social welfare hostels are not satisfactory. Periodic Health check up for the children residing in Social Welfare Hostels must be emphasized.

Key Words: *Social Welfare Hostel, Anaemia, Nutritional Assessment, WHO - Z -Score*

INTRODUCTION

Nutritional assessment is an essential part of clinical evaluation in paediatrics which can detect nutritional deficiencies, among which protein calorie malnutrition is of utmost importance. Malnutrition increases morbidity and mortality and also affects growth and development.

According to recent National Family Health Survey III and UNICEF reports, 46% of preschool and 30% of the adults in India suffer from moderate to severe grades of malnutrition.(1) The Ministry of Women and Child development is significantly involved in the issues of nutrition and development of children.

The Constitution of India provides certain special constitutional safeguards for the welfare of weaker sections of the population, so that they could take their rightful place in community. As citizens of India, they are fully entitled to certain rights and privileges, which were denied to them in the past. Keeping in view, the Constitutional mandate, The Government of Karnataka, through Social Welfare Department, formulated various programmes and schemes for the upliftment especially for their socio-economic and educational advancement. The Department of Social Welfare is maintaining 1157 Pre-Metric hostels, providing boarding and lodging facilities to students studying from V to X Std. Provision of hostels for the children hailing from oppressed sections of the community is an important social welfare measure.(2) The role of these hostels in their education advancement is considerable.

Health care of these children is of utmost important because these children are in the period of growth and development. The data regarding the nutritional status and morbidity conditions are sparse among the children residing in Social Welfare Hostels. In this context, the present study was conducted to identify the morbidities and assess their nutritional status so that the preventive and control activities will be implemented along with Health Educational programs for these group.

OBJECTIVES

1. To assess the Nutritional Status among children residing in a Social Welfare Hostel.
2. To study the morbidity conditions among these children

MATERIALS AND METHODS

This study was carried out by the Department of Community Medicine, Rajarajeswari Medical College and Hospital in a Social

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welfare hostel. This hostel comes under the purview of the Department of Community Medicine, 30 Kilometre away from the Institution, where we have started to conduct regular health check-up for the inmates of the hostel since one year duration. Since we did not have a baseline information of the health status of the inmates, this study helps us to have an idea about the health conditions of the children's. It was a cross -sectional study conducted from June to September 2013. The study subjects were the children (7-14yrs of age) residing in the Social Welfare Hostel. A total of 200 children were residing in the hostel and hence the complete enumeration of them were considered for the study. Pilot study was conducted to know about the feasibility of the study and to incorporate any changes required in the proforma for the study however, that data was not included in the main study. The variables included were socio-demographic profile, measurement of height, weight, estimation of hemoglobin percentage by Sahli's Hemoglobinometer and clinical examination. Every child was examined physically from head to toe to assess their nutritional deficiencies. Enquiry was made about the health problems and occurrence of any ailment during previous two weeks.

Nutritional Status

Assessment were made in terms of measurement of height, weight and calculation of Body Mass Index.

Measurement of Height

Height was recorded using a measuring tape applied to the wall. The measurements were taken with children barefoot with their back of heels, buttocks and head touching the wall. Readings were taken to the nearest 0.5cm.

Measurement of weight

A portable standard weighing (bathroom) scale with an accuracy of 100gms was used. The children were made to stand with light clothing and without footwear, feet apart, looking straight. The measurements were taken to nearest 0.5kgs.The weighing machine were checked daily for any possible error by comparing the results with a standard calibrated beam type of weighing machine available in our health centre. The weights were taken in kilograms.

Body Mass Index (BMI)

BMI was calculated by using the formula weight in kilogram divided by height in meter square.

Estimation of Hemoglobin

Estimation was done by Sahli's Hemoglobinometer (Cut off considered for the study was Hemoglobin level <11.5gm/dl as per WHO guidelines for the age group of 5 to 14 years) [3]

Age of the child was considered as per the records maintained in the Social Welfare Hostel.

Study Instruments

Semi-structured Questionnaire, portable weighing machine, measuring tape, Sahli's Hemoglobinometer (German Company, Superior Marienfeld Lab Glassware, 3243000) and stethoscope were used during the study.

Ethical Consideration and Consent

Ethical clearance was obtained from the Institutional Ethical Committee. Prior permission was obtained from the concerned authorities to conduct the study in the Social Welfare Hostel.

Data Analysis

Data collected were entered in Micro Soft Excel work sheet. Analysis was done using SPSS Version 20. Mean, Standard deviation, Percentages and Chi- square test were used to express the results. WHO Z- scores were calculated to classify the nutritional status of the children.

Table 1: Socio-demographic profile of the study subjects in the hostel

Age (years)	Male (%)	Female (%)	Total (%)
7-10yrs	53(62.35)	81(70.4)	134(67)
11-14yrs	32(37.65)	34(29.6)	66(33)
Total	85(42.5)	115(57.5)	200(100)

Table 2: Growth parameters and their interpretation using WHO Z – Scores

Z Scores (Percentile)	Growth parameters	Grades	No. (%)
<-1(15)	Weight / age	Normal	62(46.27)
<-2(3)	(5-9yrs)	Underweight	47(35.07)
<-3(1)		Severely Underweight	25(18.66)
<-1(15)	Height/ age	Normal	105(52.50)
<-2(3)	(5-9yrs)	Stunting	71(35.50)
<-3(1)		Severely Stunting	24(12.00)
<-1(15)	Body Mass Index/ age	Normal	128(64.00)
<-2(3)		Wasting	38(19.00)
<-3(1)	(10-14yrs)	Severely Wasting	25(12.50)
>1(85)		Risk over weight	8(4.00)

RESULTS

Among 200 children, 115(57.5%) of them were females while 85 (42.5%) of them were males.

Majority (67%) of them were in the age group of 7-10 years as seen in Table 1. The Mean age in months 116.09±25.53, Mean weight in kilograms: 22.52±5.35, Mean height in centimetres: 124.59±10.62 and Mean hemoglobin in gms/dl: 11.38±1.15.

Table 2 explains that 35.07% of them were underweight, 35.5% had stunting and 19% had wasting; with risk of overweight (4%). (The cut off considered was - 2SD)

47.5% of the study population was anemic. It was more among the girls (55.6%) than the boys (36.5%) which was statistically significant at $p< 0.001$

DISCUSSION

Malnutrition is documented public health problem contributing substantially to children's survival. There are scanty information on the nutritional status of children residing in the social welfare hostels. This study reveals that 57.5% of the inmates were girls and 42.5% were boys.

The proportion of underweight in this study was found to be of 35.07%, stunting(35.5%) in the age group of 5-9years.G K Mendhi[4] et al from Assam reported that wasting(21.1%), stunting (47.4%) and underweight (51.7%) were observed among their study population. Similar observations was reported by Chandra et al[5] in the villages of Dharwad.

The usefulness of World Health Organization –Z score in this study helped us in identifying the undernourished children in Social Welfare Hostel. World Health Organization (WHO) recommends that in the older children (>10years) BMI should be used instead of weight for the age to avoid errors in the assessment of nutritional status due to the changes during puberty.[6] In our study the overall wasting was 19% falling below the cut-off and the risk of overweight was 4%. Observations done by Anjum Fazili et al[7] quotes the overall prevalence of thinness of 29%.

In the present study 45.5% of the study population had Flurosis, skin problems (42.5%), dental caries (31.5%) and Cheilosis (24.5%). Flurosis could be attributed to the chemical composition of the drinking water; skin problems and caries could be because of lack of personal hygiene. Similar study conducted by Vinod Wasnik[8] showed that 27.1% had dental caries,16% had skin problems, 4% had defective vision and refractive errors, 2.4% had upper respiratory tract infections and other Ear, Nose and Throat infections (ENT 2.1%)

Prevalence of anemia in our study was estimated to 47.5% (Cut–off for Hemoglobin percentage is 11.5gm/dl). This was more among the girls (55.6%) than the boys (36.5%). Study by N Rema[9] found that the common deficiency diseases prevalent among school going children were anemia and skin infections (10.6% and 67%). The chief cause of anemia could be contributed to the lack of proper iron, Vitamin B 12 and folic acid in the diet of these children.

During the study period the team of doctors also found the few children had chicken pox. They were examined clinically and treated.

Since this study is limited by its small sample size, the results may therefore only be the representative of a small community but not to represent the State nor the Country. To obtain a broader representativeness, more studies could be undertaken with a larger sample size.

CONCLUSION

The present study reveals that children who are residing in Social Welfare Hostel were having poor nutritional status and lacks personal hygiene. This could lead to more morbidity conditions among these children.

Health Education programmes on common diseases, early screening for malnutrition should be emphasized. Inclusion of hygienic practices in health education should be stressed.

Periodic health check-up for these children residing in Social Welfare Hostel have to be conducted. Measures like continuous nutrition education for the hostel authorities for judicious use of locally available foods at affordable

Table 3: Common Morbidities among the study population

Morbidity conditions	No. (%)
Flurosis	91(45.5)
Skin problems	85(42.5)
Dental caries	63(31.5)
Cheilosis	49(24.5)

* Multiple morbid conditions were present in a single child

Table 4: Prevalence of anemia in children based on Hemoglobin (Hb%) estimation

Hb% in gm/dl	Male (%)	Female (%)	Total (%)
Normal(≥ 11.5)	54(63.5)	51(44.3)	105(52.5)
Anemia(<11.5)	31(36.5)	64(55.6)	95(47.5)
Total	**85**	**115**	**200**

df=1, χ^2=7.2, p<0.001

prices for weaker sections can be instrumental in bringing out an improvement among these children.

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