



Effect of Health mix Supplementation on Health status of the Selected Adolescent Girls

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ABSTRACT

Nutrition is an integral component of health and well being of all individual. Good nutrition enables one to lead a socially and economically active life and it improves the quality of life as evidenced through enhanced nutritional status of the population groups, better work efficiency rate, reduced mortality and morbidity rate by raising the standard of living. Thereby, nutrition plays a vital role in positive health, functional efficiency and productivity in later stages of life. Anthropometric measurements are systematic measurements and are used to assess the size, shape and composition of the human body. Low cost ingredients like rice flakes, wheat, roasted Bengal gram dhal, gingelly seeds are used for prepare the Healthmix. Food supplementation is one of the most effective ways of preventing or combating malnutrition especially deficiency disease to reach some or all population. Forty adolescent girls of age 13-18 years from RVL Nagulan Ammapillai Government Higher Secondary School, Sitharevu at Dindigul District were selected at random and categorized into two groups – Experimental group and control group of 20 each. For supplementation, 80g of sweet balls was prepared using Rice flakes, Wheat, Roasted Bengal gram, Gingelly seeds, Jaggery in three different variations. Among the three variations, variation II was selected for supplementation due to its highest acceptability scores. Variation II was prepared using 30g of rice flakes, 10g of wheat, 15g of roasted Bengal gram, 5g of gingelly seeds and 20g of jaggery. Variations II was prepared in the form of sweet balls. Nutritional assessment is determining the nutritional status of the subjects by analyzing an individual's medical, dietary and social history, anthropometric, biochemical and clinical data Effect of the



supplementation was evaluated through assessment of health status using anthropometric measurements at the beginning and the end of the supplementation period of 90 days. The mean weight of the study groups recorded a significant increase at one per cent level in Experimental Group before and after supplementation. The BMI of the selected adolescent girls in Experimental Group had significant improvement before and after supplementation, it is due to the supplementation of health mix for a period of 90 days. Thus, the present study proved that supplementation of health mix for undernourished adolescent girls had resulted in significant improvement of their health status

Keywords: *Anthropometric measurements, Healthmix, supplementation.*

I.INTRODUCTION

Nutrition is an integral component of health and well being of all individual. Good nutrition enables one to lead a socially and economically active life and it improves the quality of life as evidenced through enhanced nutritional status of the population groups, better work efficiency rate, reduced mortality and morbidity rate by raising the standard of living. Thereby, nutrition plays a vital role in positive health, functional efficiency and productivity in later stages of life. Nutrition during early childhood is of paramount importance because it is a foundation for life time health, strength and intellectual vitality. Childhood and adolescence are periods of continuous growth and development. Therefore, they need more and proper nutritional care to promote and maintain their nutritional and health status. ⁽¹⁾

Growth as an increase in size of the body leading to physical and mental maturation. Thus, growth during childhood and adolescence involves not only an increase in size but also a change in the function and body composition, which are reflected in increased nutritional requirements. Malnourished young adults have decreased overall resistance to diseases and increased disability at work, eventually affecting the overall quality of life. During these periods of childhood and adolescence, the child should be provided with good nutrition and protected them from deficiency diseases and infections.

Gopalan (2006) stresses the importance of consuming nutritious food items in sufficient amount of good quality protein, vitamins, minerals and energy in the diet for optimum growth to occur in young population especially adolescents. Anthropometric measurements are systematic measurements and are used to assess the size, shape and composition of the human body. Low cost ingredients like rice flakes, wheat, roasted Bengal gram dhal, gingelly seeds are used for prepare the Healthmix. Food supplementation is one of the most effective ways of preventing or combating malnutrition especially deficiency disease to reach some or all population



II.METHODOLOGY

(i) SELECTION OF SUBJECTS

Forty adolescent girls of age 13-18 years from RVL Nagulan Ammapillai Government Higher Secondary School, Sitharevu at Dindigul District were selected at random and categorized into two groups – Experimental group and control group of 20 each.

(ii) SUPPLEMENTATION OF HEALTH MIX

Food supplementation is one of the most effective ways of preventing or combating malnutrition especially deficiency disease to reach some or all population. Formulation of supplementary foods based on low cost, locally available ingredients familiar to homemakers has been one of the strategies suggested to improve nutritional status and to combat malnutrition among vulnerable population.

For supplementation, 80g of sweet balls was prepared using Rice flakes, Wheat, Roasted Bengal gram, Gingelly seeds, Jaggery in three different variations. Three variations were prepared separately and followed the same methods for sensory evaluation. Acceptability of sweet balls for supplementation was tested by sensory evaluation and the nutrient content. A pilot study was conducted. Three variations used for sweet ball preparation, were organoleptically tested by a trained taste panel members, based on the characteristics like colour, taste, texture and flavour. Among the three variations, variation II was selected for supplementation due to its highest acceptability scores. Variation II was prepared using 30g of rice flakes, 10g of wheat, 15g of roasted Bengal gram, 5g of gingelly seeds and 20g of jaggery. Variations II was prepared in the form of sweet balls.

Wheat, rice flakes, roasted Bengal gram dhal, gingelly seeds and jaggery were used in the formulation of the health mix. Rice flakes are a famous processed product from rice and have the highest iron content, compared to other cereals. Wheat is valuable for its gluten content. The other ingredients used were roasted bengal gram dhal, gingelly seeds and jaggery which are also rich in iron and are locally available and comparatively low cost food items.

Eighty gram of health mix was given in the form of sweet balls. The subjects were instructed to take one ball in the mid morning and other with the evening tiffin. Experimental group was monitored and consumption of the health mix throughout the study period for the supplemented group was ensured for a period of 90 days.

(III) ANTHROPOMETRIC MEASUREMENT

Nutritional assessment is determining the nutritional status of the subjects by analyzing an individual's medical, dietary and social history, anthropometric, biochemical and clinical data ⁽⁴⁾. Effect of the supplementation was evaluated through assessment of health status using anthropometric measurements at the beginning and the end of the supplementation period of 90 days.



Nutritional anthropometry is a technique concerned with the measurement of the physical dimension and the gross composition of the human body at different age group and degree of malnutrition. Anthropometry is a useful technique for estimation of body composition. It is considered to be the most sensitive parameter for assessing the nutritional status of the adolescent population ⁽³⁾. Hence, anthropometric measurements such as height and weight were carefully recorded and BMI was calculated for the assessing nutritional status of the selected subjects, before and after supplementation study.

III.RESULTS AND DISCUSSION:

Effect of supplementation of eighty gram of iron rich health mix was given in the form of sweet balls for a period of 90 days to the Experimental group and there was no supplementation to the Control group, and their health status was assessed by Anthropometric measurements, which is widely used to assess the nutritional status of individuals or a community.

IV.TABLE- 1

Anthropometric Measurements of the Selected Adolescent Girls in the study Groups

Anthropometric Measurements	Before Supplementation	After Supplementation	Mean difference
Height (cm) Std Height:155-164 (NCHS, 2004)			
Experimental Group	146.35± 5.931	146.825±5.9367	0.475*
Control Group	142.8±5.4926	143.135±5.5062	0.335*
Weight (Kg) Std Weight:44-54.4 (NCHS, 2004)			
Experimental Group	39.3±3.0967	39.923±3.1924	0.625*



Control Group	37.9±5.149	38.115±5.2152	0.215 ^{NS}
BMI			
Experimental Group	18.383±1.5388	18.56±1.5964	0.177*
Control Group	18.545±1.9319	18.45±1.9245	0.095 ^{NS}

*- Significant at 1 % level

NS-Not Significant

The mean height and weight of all the adolescent girls in the study groups, before and after supplementation study was lower than the standard value of NCHS, 2004. There was significant difference in the height of both the selected age groups before and after supplementation for the period of 90 days.

The mean weight of the study groups recorded a significant increase at one per cent level in Experimental Group before and after supplementation.

The BMI of the selected adolescent girls in Experimental Group had significant improvement before and after supplementation, it is due to the supplementation of health mix for a period of 90 days.

V.CONCLUSION:

Thus, the present study proved that supplementation of health mix for undernourished adolescent girls had resulted in significant improvement of their health status. Hence the regular intake of healthy foods should be encouraged among the adolescent girls with alliance between the public and sectors to reduce the malnourishment.

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