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ASSESS THE EFFICACY OF CONSUMPTION OF DRUMSTICK POWDER BY MALNOURISHED CHILDREN AT SELECTED AANGANWADI CENTRES OF DATRENGA, RAIPUR, CHHATTISGARH

***Mrs. Swati Das**

**Professor cum Principal, Aadarsh Nursing Institute, Raipur, Datrenga, Chhattisgarh, India.*

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ABSTRACT

Malnutrition is a major public health problem all over the developing world and is an underlying factor in over 50% of the 10-11 million children under 5 years of age who die each year of preventable causes. Malnutrition is an extremely common disorder, associated with high rates of mortality and morbidity requiring specialised treatment and prevention intervention. Aim: To assess the effectiveness of drumstick powder among malnourished children at selected Aanganwadi centres of Datrenga, Raipur. Methodology: Experimental research involving 30 malnourished children, among them 20 were in experimental group and 10 were under control group. Samples were selected through purposive sampling technique. Result: Total 30 children participated in the study; out of the total participants, 60% children had improvement in their health and weight. There is an association found of poor health of the children with selected demographic variables such as education of mother and father, type of family, monthly income, number of children, previous knowledge and source of information at P- value<0.05 significance level. Conclusion: On the basis of the findings of the present study it is concluded that majority of the children have gained weight, and health status improved after consumption of drumstick powder. More emphasis should be given to knowledge and practice of parents on suitable infant and young child nutrition needs and caring practice.

Key Words: *Malnutrition, Drumstick powder, Aanganwadi, Malnourished children.*

ABOUT AUTHORS:

Mrs. Swati Das is Professor cum Principal, Aadarsh Nursing Institute, Raipur, Datrenga, Chhattisgarh, India.

INTRODUCTION

Undernutrition is one of the leading causes of morbidity and mortality in children under the age of 5 years in developing countries. Malnutrition is still a major health hazard to children, as the mortality rates among malnourished children are nine times higher than those in well nourished children. Every 3rd malnourished child in the world lives in India. Worldwide, around 20 million children under 5 years of age have malnutrition and 40 percent of these (8 million) are in India.

Malnutrition is defined by a very low weight-for-height (below -3 weight-for-height z scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema. Decreasing child mortality and improving maternal health depend heavily on reducing malnutrition, which is responsible, directly or indirectly, for 35% of deaths among children under five.

It is estimated that one third of the world's children who have muscle wasted, lives in India. A study done in Bihar on less-than-5 year children reveals 28.7% are under category of muscle wasting and 8.3% have been diagnosed with severe acute malnutrition.

A study was conducted by Chetan S Patali of Department of community health Nursing, Rajiv Gandhi University of Health Sciences, Bangalore, Karnataka, in 2018, concluded that there is significant association between knowledge and age, educational and occupation of mother, religion, type of family, total number of under-five children in the family, monthly income and area of residence. Therefore education programme should give importance to equip the mothers with adequate knowledge regarding nutrition which means preventing the risk of nutritional deficiencies.

Malnutrition is an important public health problem in India. Relevant information about severe acute malnutrition is very effective. Along with it knowledge about infant feeding practice, working status, family beliefs, socioeconomic status and any underlying infections from which the child may be suffering have impact on overall nutrition and weight gain.

METHODS AND MATERIALS

The study was conducted to assess the efficacy of consumption of drumstick powder by malnourished children at selected Aanganwadi Centres of Datrenga, Raipur in Chhattisgarh. Experimental research design was used in the study. The population of the current study comprises a total of 30 participants selected by purposive sampling techniques. In the present study, the researcher used a self structured questionnaire on demographic characteristics of respondents such as age, gender, religion, education of mother, education of father, occupation, type of family, monthly income, number of children in family and previous knowledge of malnutrition. Section-II deals with nutritional assessment and complete blood count of children to self assess the severity of malnutrition and effectiveness of consumption of drumstick powder by malnourished children. Through the use of questionnaires, data were gathered.

Inclusion criteria:

Children who were available at the time of data collection, those children who are malnourished, and the children aged up to 5 years only.

Exclusion criteria:

Children aged more than 5 years.

RESULTS

Socio-demographic profiles

The socio-demographic profiles of the study populations are presented in Table - 1. As per the table, the majority of the participants (40%) were within 2 to 3 years of age group, majority (54%) of participants were male, 100% participants were Hindus, 60% mothers of participants were educated up to the secondary level, 67% fathers of participants were educated up to the higher secondary level, 43% of mothers and 50% of fathers were farmers, majority (80%) of participants belonged to joint family, 54% of participants were having a monthly income of rupees 3908- 11,708, maximum (70%) participant-parents were having two children, all the participants (100%) were living in rural areas.

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Table .1: Frequency and percentage distribution of socio demographic profile of participants. n= 30

Socio- demographic characteristics		frequency	Percentage
		f	%
Age (years)	0- 12 months	5	16
	1- 2 years	6	20
	2- 3 years	12	40
	3- 5 years	7	24
Gender	Male	16	54
	Female	14	46
Religion	Hindu	30	100
	Muslim	0	0
	Christian	0	0
	Other	0	0
Education of mother	Primary	5	16
	Secondary	18	60
	Higher secondary	7	23
	Graduation	0	0
Education of father	Primary	3	10
	Secondary	6	20
	Higher secondary	20	67
	Graduation	1	3
Occupation of mother	House wife	9	30
	Labourer	8	27
	Farmer	13	43
	Self employed	0	0
Occupation of father	Farmer	15	50
	Labourer	7	24
	Service	4	13
	Self employed	4	13
Type of family	Nuclear	6	20
	Joint	24	80
	Extended	0	0
	Separated	0	0
Monthly income of family	<=3907	0	0
	3908-11707	16	54
	11708-19515	12	40
	>19516	2	6
Total number of children	One	5	17
	Two	21	70
	Three	4	13
	Four	0	0
Area of residence	Rural	30	100
	Urban	0	0

Table .2 Nutritional status of children through anthropometric measurement and HB before consumption of drumstick powder

Sl. No.	Head circumference [in cm]	Chest circumference [in cm]	Abdomen [in cm]	Mid upper arm circumference [in cm]	Height [in cm]	Weight [in Kg]	Hb
1	42	43	42	12.0	93.0	10.0	10.1
2	40	41	41	12.0	80.1	9.2	11.0
3	43	44	43	13.0	90.0	12.1	10.0
4	42	45	43	11.0	80.1	9.1	9.1
5	43	45	44	11.0	90.5	10.0	9.1
6	41	40	42	10.0	78.0	8.5	10.0
7	43	42	44	12.0	86.0	11.5	10.0
8	42	43	42	12.0	83.0	10.0	9.6
9	43	42	42	13.0	87.0	11.0	11.9
10	42	43	42	11.5	90.0	12.0	9.0
11	43	44	42	12.0	98.0	13.0	9.5
12	42	42	43	12.5	90.5	13.0	9.1
13	43	42	43	12.0	95.0	10.0	10.2
14	43	42	44	12.0	86.0	11.5	10.0
15	42	43	42	12.0	83.0	10.0	9.6
16	43	44	43	11.0	90.0	12.0	9.0
17	43	42	43	12.0	95.0	12.0	6.4
18	42	45	43	11.0	80.0	9.0	8.0
19	45	48	46	15.0	82.0	10.6	10.1
20	43	43	42	11.5	85.0	10.5	11.1
21	43	42	44	12.0	86.0	11.5	10.0
22	42	43	42	12.0	83.0	10.0	9.6
23	43	42	44	12.0	86.0	11.5	10.0
24	42	43	42	12.0	83.0	12.0	9.4
25	42	42	43	12.5	90.5	13.0	9.1
26	42	45	43	11.0	80.0	9.0	8.0
27	42	45	43	11.0	80.1	9.1	9.1
28	43	45	44	11.0	90.5	10.0	9.1
29	41	40	42	10.0	78.0	8.5	10.0
30	43	45	44	13.0	90.0	12.0	8.6

Table .3 Nutritional status of children through anthropometric measurement and HB after consumption of drumstick powder

Sl. No.	Head circumference [in cm]	Chest circumference [in cm]	Abdomen [in cm]	Mid upper arm circumference [in cm]	Height [in cm]	Weight [in Kg]	Hb [gram %]
1	43.0	43.2	43.0	12.2	94.1	10.7	10.3
2	40.1	41.0	42.0	12.0	80.5	9.6	11.1
3	43.0	45.0	43.5	13.5	90.4	12.6	10.2
4	42.0	45.0	44.0	11.0	80.4	9.3	9.3
5	43.5	45.0	44.0	12.0	90.8	10.1	9.3
6	41.5	40.1	42.0	10.5	79.0	8.9	10.3
7	44.0	46.0	45.5	13.3	90.6	12.6	9.0
8	44.0	45.1	45.0	14.0	93.5	12.2	11.5
9	43.0	42.5	42.3	13.2	88.0	11.5	11.9
10	42.5	43.0	42.1	11.8	90.6	12.6	9.3
11	43.0	44.0	42.0	12.0	98.6	13.5	9.6
12	43.0	42.0	43.5	12.8	91.3	13.5	9.4
13	43.0	42.0	43.2	12.6	96.1	10.4	10.3
14	43.0	43.0	44.0	12.5	86.5	12.1	10.3
15	42.0	43.0	42.0	12.2	84.1	10.5	9.8
16	43.0	44.0	44.0	11.3	90.5	12.3	9.3
17	43.2	42.0	43.2	12.3	96.1	13.0	7.1
18	42.0	46.0	44.0	11.5	80.3	9.3	9.1
19	45.0	48.0	47.0	15.0	83.5	10.9	10.3
20	43.0	43.4	42.0	11.6	85.6	10.9	11.4
21	43.0	42.0	44.0	12.0	90.0	12.0	11.0
22	42.0	43.0	42.0	12.0	86.0	11.0	9.6
23	43.0	42.0	44.0	12.0	86.0	11.5	10.0
24	42.0	43.0	42.0	12.3	88.0	12.1	9.4
25	42.0	43.0	44.0	12.5	90.7	13.0	9.1
26	43.0	45.0	43.0	11.0	80.0	9.0	8.0
27	42.0	45.0	43.0	11.0	80.1	9.1	9.5
28	43.0	45.0	44.5	12.0	90.5	11.0	10.5
29	42.0	40.0	42.0	10.0	78.0	10.0	10.0
30	43.0	45.0	44.0	13.0	90.0	13.0	9.0

DISCUSSION

Out of total 30 participants, 20 participants were in experimental group and 10 participants were in control group. After comparison of 'before' and 'after' consumption of drumstick powder, the findings illustrate that the majority (60%) of participants had improvements in their health status, and rest of the participants (40%) had no major changes in their health. A similar study by Manohar(2017) in India showed that out of 120 children 69 (57.5%) had good improvement, followed by 36 (30%) who had moderate improvement and 15 (12.5%) who had no improvement in their health status.

CONCLUSION

On the basis of the findings of the present study it is concluded that majority of the children are suffering from malnutrition in India. Demographic status plays an important role in health status of under-five children. This study was designed to evaluate the effectiveness of consumption of drumstick powder in improving the nutritional status of children. The monitoring of malnourished children allowed us to objectively assess the effectiveness of drumstick powder consumption by these children.

This study allowed us to appreciate the benefits of the drumstick powder for nutritional recovery, by assessing parameters such as weight gain, height (anthropometric measurements) and haemoglobin rate. The acceptability of drumstick powder amongst malnourished children was good.

This study shows that drumstick powder, packed with nutritional potential, can be used as a dietary supplement, and may even contribute to the fight against malnutrition.

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