



A study to assess the effectiveness of roasted bengal gram dhal and jaggery ball on prevention of pica among underfive children in selected villages, Nellore



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Abstract: Under five age group are vulnerable and special risk group constituting a major portion of total population with high death rate. Adequate nutrition is vital for growth and development of children. **Methodology:** The research approach adopted for this study was quantitative approach. An experimental pre test - post test design was adopted for conducting the study.. Samples were underfive children between 2-5 years of age group residing at selected villages at Nellore. Data collection for a period of 6 weeks. The sample size of the study was 60 children with pica; subjects were selected by using Probability - simple random sampling technique by means of lottery method. The tool used for the data collection was interview based questionnaire and observational checklist to assess physical examination. **Results:** With regard to effectiveness of intervention on pica behavior In experimental group during post test 7(23%) had occasional pica and 23(76.7%) did not have pica. Where as in control group 11(36.7%) had occasional pica and 19(63.3%) had frequent pica. In **experimental group**, the post test, mean score on pica behaviour was 0.23 with SD of 0.035, where as in control group the mean was 1.63 with SD of 0.13. The calculated independent 't' test value was 15.35 which exceeds the table value of 2 ($p < 0.001$). Hence, null hypothesis (H₀) was rejected research hypothesis (H₁) was accepted. **Conclusion:** Roasted bengal gram dhal and Jaggery ball showed improvement in nutritional status significant reduction in pica.

Introduction: Underfive age group are vulnerable and special risk group constituting a major portion of total population with high death rate. Morbidity and mortality of this age group are mainly high. Adequate nutrition is vital for growth and development of children. Pica behaviour is eating of substance other than food (non food items) example mud, dust, clay, sand, flanks of paint, plaster from wall, fabrics, and ice cubes. Pica as manifestation of inclination for mouthing and tasting in the absence of any associated problems may be taken as normal until 2 years of age. Thereafter it will be considered as a deviant behaviour requiring attention.

Need for the study: Pica is one of the common nutritional problem among under five children with low socio economic status. Pica may lead to risk factors like gastrointestinal obstruction and nutritional deficiencies in day today practice. There are so many factors which influences these nutritional problems. Among which one of the factor is pica. Since it is duty of nurse to identify this problem and to provide health education to prevent this behavioral disorder, there should be proper evidence to explore nature of relationship between pica and nutritional status of children. Incidence of pica problem is increasing more and more among under five children. The researcher



has under taken the present study to redirect the children with Roasted bengal gram dhal and jaggery ball supplementation for the prevention of pica behaviour. It will help to improve the hemoglobin and also the nutritional values like protein, iron and calorie.

Statement of the problem: *A study to assess the effectiveness of Roasted Bengal gram dhal and jaggery ball on prevention of pica among underfive children in selected villages, Nellore.*

Objectives:

- To identify the under five children with pica behaviour.
- To evaluate the effectiveness of Roasted Bengal gram dhal and jaggery ball on prevention of pica among under five children in experimental group.
- To compare the effectiveness of Roasted Bengal gram dhal and jaggery ball with nutritional status of under five children in experimental group and control group.
- To find association between the effectiveness of Roasted Bengal gram dhal and jaggery ball among under five children with the selected demographic variables.

Null hypotheses:

Ho: There is no statistically significant difference with effect of Roasted Bengal gram dhal and jaggery ball on pica behaviour among underfive children in experimental group and control group.

H0: There is no statistically significant difference with effect of Roasted Bengal gram dhal and jaggery ball on nutritional status of underfive children in experimental group and control group.

OPERATIONAL DEFINITIONS

Effectiveness: It refers to prevention of pica in children and the extent to which the objectives are achieved after administration of nutritional

supplementation with roasted bengal gram dhal and jaggery ball.

Roasted bengal gram dhal and jaggery: It refers to a nutritional intervention, which contain iron and protein supplementation to redirect the pica behavior and to improve the nutritional status.

Ball is prepared with 30 grams of Roasted bengal gram dhal flour and 100 grams of powdered jaggery and each ball weighs 130 grams and supplemented twice daily in the morning 10 am and evening 5 pm.

Prevention: It refers to action directed to reduce and redirect the pica behaviour and improve the nutritional status among under five children.

PICA: It refers to the persistent craving and compulsive eating of nonfood substances such as dirt, clay, chalk, glue, ice cubes, starch, hair, paint chips, plaster, cornstarch, laundry starch etc.,

Delimitations: The study is delimited to:

1. Under five children (2-5 years) residing selected villages, at Venkatachalam and Buja - Buja Nellore only.
2. Sample size of 60 under five children only.
3. Data collection period of 6 weeks only.

METHODOLOGY

Research Approach: quantitative research approach

Research Design: An experimental pretest – post test design

Setting of the Study: The settings selected for this study were rural villages Venkatachalam and Buja - Buja Nellore, Nellore district.

POPULATION

Target population : Under five children of 2-5 years of age with pica behaviour.

Accessible Population: Under five children (2-5years) with pica behaviour residing in Venkatachalam



and Buja-Buja Nellore.

Sample: Under five children (2-5years) with pica behavior.

Sampling Technique: Probability-simple random sampling technique by means of lottery method.

Sample Size: 60 under five children with pica behavior. Among 30 children to experimental group and 30 children were assigned to control group.

Sampling Criteria: Inclusive criteria:

1. Under five children (2-5years) with pica behavior who are residing at Venkatachalam and Buja- Buja Nellore.
2. Under five children of both Boys and Girls.
3. Parents of children who are willing to participate in the study.
4. Parents who can understand and speak Telugu or English.

Exclusive criteria:

1. Children with mental retardation and chronic illness
2. Children who are not available at the time of data collection.

VARIABLES

Independent variable: Roasted bengal gram dhal and Jaggery ball.

Dependent variable: Pica behavior and nutritional status.

Demographic variables: Age, sex, developmental stage, immunization status, weaning, history of exclusive breast feeding, weight, term maturity.

Description of the tool: The investigator developed interview based questionnaire and the observational check list to assess pica behavior among under five children.

Plan for Data Analysis.

Data analysis was done by descriptive statistics and inferential statistics.

RESULTS AND DISCUSSION

Table-1: Frequency and percentage distribution of pica behaviour in experimental and control group. (N=60)

Sl.	Pica behavior	Experimental group				Control group			
		Pre test		Post test		Pre test		Post test	
		F	%	F	%	F	%	F	%
1.	Occasional Pica behaviour present	6	20	7	23.3	12	40	11	36.7
2.	Frequent Pica behaviour present	24	80	-	-	18	60	19	63.3
3.	Absence of pica behavior	-	-	23	76.7	-	-	-	-

In experimental group in post test 7(23.3%) had occasional Pica, 23(76.7%) did not have pica behaviour. In control group during in post test 11(36.7%) had occasional Pica, 19(63.3%) had frequent pica.

In experimental group, the post test, mean score on pica behaviour was 0.23 with SD of 0.035, where as in control group the mean was 1.63 with SD of 0.13. The calculated independent ‘t’ test value is 15.35 which exceeds the table value of 2 (p<0.001). Hence, null hypothesis (H0) was rejected, research hypothesis (H1) was accepted.

Table 2: Comparing the effectiveness of Roasted Bengal gram dhal and jaggery ball with nutritional status.

Sl. Criteria	Experimental group		Control group		Independent “t” test
	Post test weight		Post test weight		
	Mean	SD	Mean	SD	
	kgs		kgs		
1 Boys	11.9	1.64	10.2	1.84	3.73*
2 Girls	11.6	1.47	10.2	1.68	

S* significant at p<0.01, df (n-1)

With regard to weight in experimental group, among boys post test mean weight was 11.9kgs with SD of 1.64 where as in control group, mean weight



was 10.2kgs with SD of 1.84. Among girls in experimental group the post test mean weight was 11.6kgs with SD of 1.47 where as in control group mean was 10.2kgs with SD of 1.68. The calculated independent 't' test value is 3.73 which exceeds the table value of 2.($p < 0.01$) Hence null hypothesis (H_0) was rejected and research hypothesis (H_2) was accepted.

Table-3: Comparison of mean and standard deviation of MAC among children in experimental group and control group (N=60)

Sl.	Criteria	Experimental group		Control group		Independent "t" test
		Post test weight		Post test weight		
		Mean	SD	Mean	SD	
		kgs		kgs		
1.	Boys	13.4	1.17	12.2	0.97	4.207*
2.	Girls	13.4	1.10	12.1	0.87	df-2.00

S* significant at $p < 0.01$, df (n-1)

With regard to MAC in experimental group, among boys post test mean was 13.43cms with SD of 1.17 where as in control group mean MAC was 12.2cms with SD of 0.97. Among girls in experimental group post test mean was 13.4cms with SD of 1.10 where as in control group mean was 12.1cms with SD of 0.87. The calculated independent 't' test value is 4.2 which exceeds the table value of 2. Hence, null hypothesis (H_0) was rejected and research hypothesis (H_2) was accepted. Control group during pre test 12(40%) had occasional Pica, 18(60%) had frequent pica.

Discussion: There is a significant reduction of pica behaviour among children in experimental group when compared to control group. There is significant

improvement in nutritional status of children in experimental group when compared to the control group.

Conclusion: The study concluded that the children who were given the nutritional intervention with Roasted bengal gram dhal and Jaggery ball showed significant reduction in pica behaviour and improvement in nutritional status.

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