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A Study to Assess the Effectiveness of Mixed Cereals Porridge on Malnutrition among Underfive Children in Seleceted Villages, Jabalpur

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ABSTRACT

A study was done to evaluate the Effectiveness of Mixed Cereals Porridge on Malnutrition among under five Children in Selected Villages, Jabalpur.

A Quasi experimental pre test post test with control group design was adopted. Data collection was done over a period of 4 weeks .The investigator had selected the 30 samples each for experimental group and control group from Panagar and Tilwara Villages respectively through convenient sampling technique. Then the subjects from the experimental group were provided mixed cereals porridge for 27 days. Post test was conducted on every 5th day for both experimental and control group and the weight of the children were measured and analyzed by Observational Proforma.

Findings of the study reveal that the mean pre-test and post-test weight of experimental group was 11.93and12.12. where as in control group the mean pre test and post test weight was11.80 and 11.79. There was significant difference found in the Post test mean weight of under five children in experimental group and control group.

The findings of the study showed that mixed cereals porridge produced a significant increase in body weight of malnourished under five children. This study would help the Child health nurse to motivate the under five children to consume mixed cereals porridge to maintain their good nutritional status.

Keywords: Mixed cereals porridge, malnutrition, underfive children

INTRODUCTION

"To eat is a necessity, but to eat intelligently is an art"

The importance of level of nutrition on health can never be underestimated. The word nutrition simply means the availability of nutrients and energy for body cells with respect to the requirements of the body and malnutrition pertain to the disproportion of body requirements and availability of nutrients. Malnutrition in under five children are mainly caused due to the synergic effect of improper or inadequate intake to food.

Malnutrition is a very critical and notably a life threatening case due to the lack of important minerals, vitamins, fats and proteins. The mortality rate due to treatable diseases like cold or diarrhea is ten times higher in people suffering from malnutrition because of their compromised immune system.

OBJECTIVES

- To evaluate the existing nutritional status of children under five years of age in experimental and control group.
- To evaluate the effectiveness of mixed cereals porridge on malnutrition among under five children in experimental group.
- To associate the nutritional status of under five children in experimental and control group with their selected demographic variables.

RESEARCH HYPOTHESIS

H1: There will be significant difference between the post test nutritional status of under five children in experimental and control group at P< 0.05 level

H2: There will be significant association between the nutritional status of under five children with their demographic variables at p < 0.05 level

ASSUMPTIONS

1. Mixed cereals porridge may improve the nutritional status of under 5 children.
2. Demographic variables may influence the nutritional status of under five children.
3. Children in rural area may have higher incidence of malnutrition.

DELIMITATIONS

1. The study will be limited to under five children.
2. The study will be limited to only selected villages, Jabalpur.
3. The study period will be limited to four weeks.

METHODOLOGY

Research Approach: Quantitative Evaluative Approach was considered as an appropriate research approach to evaluate the outcome of malnutrition among the samples.

Research Design: Quasi experimental pretest and post test with control group research design was used for this study.

Population: All first degree malnourished under five children residing in selected villages, Jabalpur.

Sample : The sample of this study was first degree malnourished under five children who are present at Panagar and Tilwara villages, Jabalpur.

Sample size: Sample size consist of 30 subjects in experimental group and 30 in control group who full fill the inclusion criteria.

Sampling technique: Convenience sampling technique was used to select the samples.

Criteria for the sample selection

Inclusion criteria

Under five children With only first degree malnutrition.

Exclusion criteria

Under five children

- with complications like mental retardation
- suffering with illness like diarrhoea, vomitting, fever

Variables

- **Independent variable:** Mixed cereals porridge.
- **Dependent variable:** Nutritional status of under five children.

DESCRIPTION OF THE TOOL

Section-A: Demographic variables: A structured interview schedule was used to assess the demographic data like age, sex, birth order, child is attending, type of diet, type of family, educational status of father and mother, occupation of the father and mother, and family income.

Section-B: Observational Proforma:

(Body weight---------in kg)

Interpretation: Assessments of body weight with IAP standard were used to assess the malnutrition.

$$\text{Degree of malnutrition} = \frac{\text{Actual weight}}{\text{Expected weight}} \times 100$$

IAP classification of malnutrition: When the child is having weight more than 80% of expected weight for age, considered as normal.

Grade of malnutrition:

Grade I – Between 71-80% of expected weight.
Grade II – Between 61-70% of expected weight.
Grade III – Between 51-60% of expected weight.
Grade IV- 50% or less of expected for the age.

Section C: Mixed cereals porridge:

A soft food made by boiling cereals like Ragi, wheat, corn, rice, groundnut and green gram in water with jaggery.

DATA ANALYSIS AND INTERPRETATION

Section-A: Distribution of under five children according to their selected demographic variables in experimental and control group.

Section-B: Comparison of mean Pretest weight of under five children in Experimental and Control group.

Section-C: Comparison of mean pretest and post test weight of under five children in experimental and control group.

Section-D: Effectiveness of mixed cereal porridge on nutritional status of under five children in Experimental and Control group.

Section-E: Association between the post test weight of under five children in experimental and control group with their selected demographic variables.

Section -A Distribution of under five children according to their Demographic Variables in Experimental and Control group

Table – 4.1: Frequency and percentage distribution of under five children according to their demographic variables in experimental and control group
n=60

Demographic variable of child	Experimental group(30)		Control group(30)	
	Frequency	%	Frequency	%
Age				
2.1-2.5yrs	2	6.7	6	20
2.6-3yrs	3	10	8	26.7
3.1-3.5yrs	10	33.3	4	13.3
3.6-4yrs	11	36.7	4	13.3
4.1-4.5yrs	2	6.7	2	6.7
4.6-5yrs	2	6.7	6	20
Gender				
Male	12	40	18	60
Female	18	60	12	40
Child is attending Anganwadi				
Yes	6	20	10	33.3
No	24	80	20	66.7
Type of Diet				
Vegetarian	2	6.7	-	-
Non vegetarian	28	93.3	30	100
Order of Birth				
First	9	30	12	40
Second	14	46.7	10	33.3
Third	7	23.3	8	26.7
Type of family				
Joint family	4	13.3	5	16.7
Nuclear family	25	83.3	23	76.7
Extended family	1	3.3	2	6.7

Table 4.2: Frequency and percentage distribution of under five children according to the selected demographic variables of parents in experimental and control group
n=60

Demographic variable of parents	Experimental group(30)		Control group(30)	
	Frequency	%`	Frequency	%
Education level of Father				
Middle school	6	20	7	23.3
Primary school	20	66.7	19	63.3
No formal education	4	13.3	4	13.3
Education level of mother				
High school	2	6.7	2	6.7
Middle school	4	13.3	6	20
Primary school	16	53.3	17	56.7
No formal education	8	26.6	5	16.7
Occupation of father				
Clerical worker	7	23.3	6	20
Semiskilled worker	8	26.7	8	26.7
Un skilled worker	15	50	16	53.3
Occupation of mother				
Unskilled worker	8	26.7	4	13.3
Unemployed	22	73.3	26	86.7
Family monthly income				
Rs.9787-7323	6	20	10	33.3
Rs.7322-4894	8	26.7	8	26.7
Rs.4893-2936	16	53.3	12	40

Section-B Comparison of mean Pre test weight of under five children in Experimental and Control group.

TableNo:4.3: Comparison of Mean Pre test weight of Under five children in Experimental and Control Group.

n=60

Group	Pre test		Difference in Mean
	Mean	SD	
Experimental group	11.93	1.04	0.13
Control group	11.80	1.39	

The above table shows that in experimental group the mean pre-test weight is 11.93± 1.04 whereas in the control group the mean pre test weight is 11.80±1.39 revealing a difference of 0.13. This reveals that the mean pre-test weight is higher among children in experimental group (11.93) when compared to control group (11.80).

Section-C a) Comparison of Mean Pre test and Post test weight of under five children in Experimental and Control group

TableNo:4.4: Comparison of Mean, SD and difference in Mean of Pre test and Post test weight of Under five children in Experimental and Control Group.

n=60

Group	Pre test		Post test		Difference in Mean
	Mean	SD	Mean	SD	
Experimental group	11.93	1.04	12.12	1	0.19
Control group	11.80	1.39	11.79	1.42	0.01

The above table shows that in experimental group the mean pre-test weight is 11.93± 1.04 whereas the mean post test weight is 12.12 ±1 revealing a difference of 0.19.However, in the control group the mean pretest weight is 11.80±1.39 and the post test weight is 11.79±1.42 revealing a difference of 0.01.

This reveals that the difference between the mean pre- test and post- test weight is higher among children in experimental group (0.19) when compared to control group(0.01).

Section-C b) Comparison of mean weight of five post test observations of under five children in experimental and control group

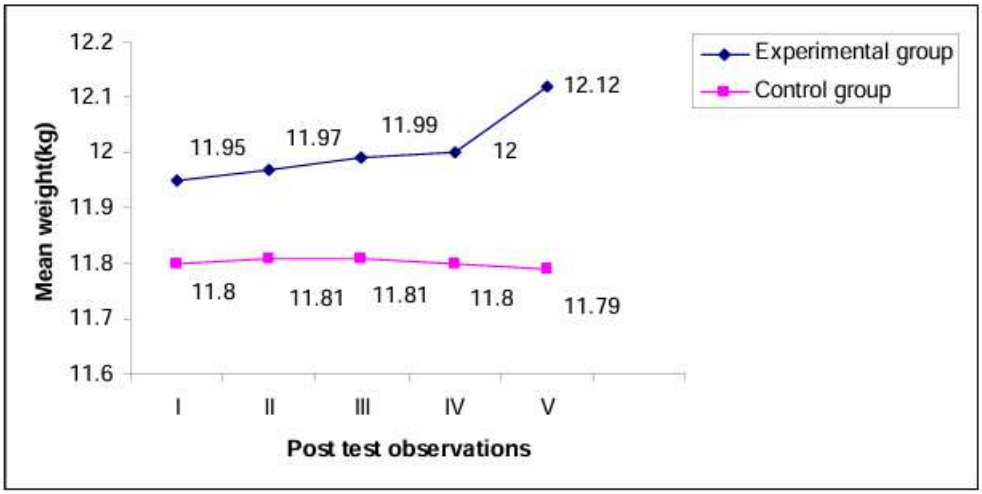

Figure – 4.7: Comparison of Mean weight of five post test observations of under five children in experimental and control group.

The above figures shows that the comparison of mean weight of five post test observation in experimental group (11.95, 11.97, 11.99, 12 and 12.12) is higher than the mean weight of under five children in control group (11.8, 11.81, 11.81, 11.80 and 11.79) for all the five observations. Further the difference in the Mean weight of Experimental and Control group increased as the number of observation increased
Hence, it can be interpreted that the mixed cereals porridge is improving the nutritional status of children's in the experimental group.

Section-D: Effectiveness of mixed cereal porridge on nutritional status of under five children in Experimental and Control group.

Table-4.5: Effectiveness of Mixed cereals porridge on Nutritional status of Under five children in experimental and control group

n=60

Group	Mean	SD	't' value
Experimental group	12.12	1	2.41*
Control group	11.79	.42	

***Significant at p<0.001 level; table value – 2.39, df-59**

The above table shows that in experimental group the mean post test score is 12.12±1 whereas in control group the mean post test score is 11.79±1.42 and 't' value is 2.4. Which is higher than the table value at 0.001 level. Hence significant difference is found in the post test mean weight of under five children in experimental group and control group ($P < 0.001$).
This reveals effectiveness of mixed cereal porridge in improving the nutritional status of malnourished children.

Section-E: There is significant association between the nutritional status of under five children with their demographic variables at $p< 0.05$ level.

Table-4.6: Association between post test weight of under five children and their selected demographic variables in experimental and control group.

n=60

S. No	Demographic variables for child	Experimental group (n=30)			Control group (n=30)		
		df	table value	χ^2	df	table value	χ^2
1	Age	5	11.07	18.80*	5	11.07	25.5*
2	Gender	1	3.84	1.53	1	3.84	0.625
3	Anganwadi	1	3.84	1.29	1	3.84	25.67
4	Type of Diet	1	3.84	1.24	1	3.84	0
5	Order of birth	2	5.99	1.97	2	5.99	0.6
6	Type of family	2	5.99	3.34	2	5.99	0.10

***** significant at p<0.05 level**

The above table showed that there is no significant association between weight of under five children and their selected demographic variables in both experimental and control group (P>0.05) except age where significant association is found (p

Table-4.7: Association between post test weight of under five children and the selected demographic variables of parents in experimental and control group.

n=60

S. No	Demographic variables for parent	Experimental group (n=30)			Control group (n=30)		
		df	table value	χ^2	df	table value	χ^2
1	Education level of father	2	5.99	7.03*	2	5.99	4.6
2	Education level of mother	3	7.82	8.2*	3	7.82	5.54*
3	Occupation of father	2	5.99	13.67*	2	5.99	13.12*
4	Occupation of mother	1	3.84	7.03*	1	3.84	2.30
5	Family Monthly income	2	5.99	14.3*	2	5.99	13.12*

*** significant at p<0.05 level**

The above table shows that there is significant association between weight of under five children and selected demographic variables of parents in experimental and control group
(p 0.05) .

Conclusion

A study was done evaluate the Effectiveness of Mixed Cereals Porridge on Malnutrition among Under five Children in selected villages, Jabalpur. The settings were Panagar and Tilwara Village. The samples were selected by convenience sampling technique and sample size was 60, 30 were assigned to experimental and 30 were assigned to control group. The results of the study showed that mixed cereal porridge was effective in improving the nutritional status of under five malnourished children.