

An Interventional Study to Evaluate the Effectiveness of Selected Nutritional Diet on Growth of Pre-Schooler at Selected Slums Area of Bhopal (M.P)

Akhil Kumar Pandey¹, Sunita Singh²

¹Assistant Professor, L.N. Nursing College, Bhopal, Madhya Pradesh, India

²Lecturer, Baba Educational Society Institute of Paramedical College of Nursing, Lucknow, Uttar Pradesh, India

ABSTRACT

Background: Children are the future pillars of a nation. Nutrition of these children would determine the strength of tomorrow's nation. Inadequate nutrition of these children leads to retarded growth and development and may cripple the child for life long. Malnutrition is a worldwide problem and a major public health concern. More than half of the yearly 10.8 million deaths of children younger than 5 years are attributed to malnutrition according to the international reference recommended by the World Health Organization (WHO). **Objectives:** The study aimed to evaluate the effectiveness of selected nutritional diet on growth of pre-schooler. **Methods:** The research approach adopted for this study was quantitative approach. The research design selected for the study was pre-experimental study one group pre & post-test design. Data was obtained from 30 Pre-schooler children. And sample was selected used purposive sampling technique. Data was collected with the help of demographic Performa and standardized tools. The obtained data was analyzed by using descriptive and inferential statistics. **Results:** The hypothesis was tested using paired 't' test. The value of 't' was calculated to analyses the difference between mean pre and interventional effect of selected nutritional diet on children. **Weight-** The value of t- test is $t = 23.77$ which is greater than table value therefore research hypothesis is accepted. **Height-** The value of t- test is $t = 6.42$ which is greater than table value therefore research hypothesis accepted. **Conclusion:** The study concluded that intervention was effective in increasing the weight and height of pre-schooler children through selected nutritional diet.

KEYWORDS: Parents, Pre-schooler children, Growth, Intervention, Selected nutritional diet

INTRODUCTION

William C. Shiel Jr, The process of taking in food and using it for growth, metabolism, and repair. Nutritional stages are ingestion, digestion, absorption, transport, assimilation, and excretion. A nourishing substance, such as nutritional solutions delivered to hospitalized patients via an IV or IG tube.

Christine Joy T. Soldao, (2017) Reported that malnutrition is a worldwide problem and a major public health concern. A report by the International Food Policy and Research Institute indicated that developing countries have the largest proportions of

malnourished children. over one third of the children in developing countries are malnourished. Malnutrition is a major health concern because a large number of young children die each year due to complications resulting from poor nutritional status. Malnutrition coupled with the high incidences of infections account for the high mortality rates observed among children in developing countries. A young child's eating plan should consist mostly of healthy foods, such as lean meats, poultry, seafood, eggs, and legumes; whole grains, such as whole-wheat bread and cereals; at least two servings of dairy foods

How to cite this paper: Akhil Kumar Pandey | Sunita Singh "An Interventional Study to Evaluate the Effectiveness of Selected Nutritional Diet on Growth of Pre-Schooler at Selected Slums Area of Bhopal (M.P)" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-5, August 2021, pp.1597-1602, URL: www.ijtsrd.com/papers/ijtsrd45072.pdf



Copyright © 2021 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



daily; and fresh or lightly processed fruits and vegetables.

Preschool-age children are still developing their eating habits and need encouragement to eat healthy meals and snacks. These children are eager to learn. They will often imitate eating behaviors of adults. They need supervision at mealtime as they are still working on chewing and swallowing skills.

Elsevier,(2018) Good nutrition in early childhood is essential to ensure children reach their growth and developmental potential. Furthermore, dietary health behaviours and food preferences are learnt early and carry through into adulthood. In all ages, and increasingly in younger populations, poor food choices and overconsumption are associated with a higher risk of developing obesity. Excessive weight developed in early childhood is particularly problematic as it is associated with an increased risk of developing physical, social and psychological conditions and earlier onset of non-communicable diseases (NCD). Contrary to popular belief, many children carrying extra weight do not outgrow it and childhood-onset obesity is particularly difficult to address in later life. As such, concern for children's health, and escalating rates of NCD, have prompted the prioritization of healthy diets for young children globally.

Pre-schooler children need to develop healthy eating and physical activity habits early on. Children pattern habits after parents and caregivers. Pre-schoolers quickly grow and change physically, mentally, and socially. Pre-schoolers need healthy food to meet their growth and developmental needs. These can best be met by following national and/or local food guide recommendations for ages 2-5. Meal and snack times teach sharing and socializing skills. Small children have small stomachs and get full quickly. They need child-sized servings for meals and snacks that respect local traditions and customs.

Need For the Study:

In a developing country, like India there are many constraints to better living and adequate nutrition. Lack of awareness about the dietary requirements and nutritive value of different food is the main cause for growth retardation among pre-school children.

Over all nearly half of the young children in India are underweight (46%) and one in six children were wasted (16%). The levels of under nutrition are much higher in rural areas than in urban areas. Under nutrition is most prominent in the states of Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan. About half the children are stunted in Assam and Haryana. In the rural areas. 20.3% of children were severely

malnourished; 30.2% were moderately nourished; 50.5% were malnourished (moderate and severe). In the urban areas, 12% of the children were severely malnourished and 27% were moderately malnourished and 39% were malnourished (moderate and severe). Malnutrition levels were much higher among tribal children in rural areas. In Madhya Pradesh the incidence is as high as 73.6%.

The final report of this study revealed that nutritional awareness had increased among mothers and the incidence of malnutrition and growth retardation dropped from 6.5% to 1.8% as measured against the weight for height.

PROBLEM STATEMENT:

“An interventional study to evaluate the effectiveness of selected nutritional diet on growth of pre-schooler at selected slums area of Bhopal M.P.”

OBJECTIVES:

- To assess the pre-interventional growth of pre-schooler.
- To assess the effectiveness of selected nutritional diet on growth of pre-schooler.
- To find out the difference between pre and post interventional growth of pre-schooler.
- To find out the association between weight and height of the pre-schooler with selected demographic variables.

HYPOTHESIS:

H₁: There is a significant difference between the post-interventional and pre-interventional mean score regarding growth of pre-schooler.

H₂: There is a significant association between pre-interventional mean of weight with selected demographic variables.

H₃: There is a significant association between pre-interventional mean of height with selected demographic variables.

OPERATIONAL DEFINITIONS:

Evaluate: It is a measurement of growth of pre-schooler children

Effectiveness: It refers to outcome of the growth in term of height and weight among pre-schooler children after the intervention regarding selected nutritional diet pattern.

Intervention: It means action taken or intervening to improve the growth of pre-schooler children by in calculating the selected nutritional diet among pre-schooler.

Growth: It is a quantitative changes that make some varies in term of height and weight intervention period of the pre-schooler at prescribed.

Nutrition diet: It means protein rich food that researcher is provide to measure the growth of pre-schooler children, eg: sprouted grams, butter and milk, egg (optional).

Pre-schooler: In this study preschooler denotes the children between the age group of 3-6years at selected slums area, Bhopal.

MATERIAL AND METHODS:

Research approach:

Quantitative with evaluative approach.

Research design:

Pre-Experimental.

Variables:

- **Independent variables:** Assessment of intervention nutritional dietary pattern on the growth among pre-school children.
- **Dependent variables:** Growth of pre-schooler in term of height and weight.
- **Demographic variables:** Such as Age, sex, type of family, Occupation of the parents, Education of the parents.

Research setting:

The study was conducted in Slum Area of Bhopal district.

Population: Pre-schooler children at Selected Slum Area of Bhopal district.

Sample:

Pre-schooler children at slums area of Bhopal.

Sample size: 30 Pre-schooler children.

Sample techniques:

Purposive sampling technique

Criteria for sample selection:

Inclusion criteria:

1. Who were in pre-school age in Selected Slum Area.
2. Who were available at the time of data collection.
3. Who were willing to participate.

Exclusion criteria:

1. Who were not willing to participate.
2. Who were not available at the time of study.

Tool and method of data collection:

Methods of data collection include selection and development of tool, testing of tool for validity and reliability and pre-testing by administering on few samples and data collection procedure.

Description of the tool:

PROTOCOL OF SELECTED NUTRITIONAL DIET-

According to- National health portal of India

Energy rich foods (Carbohydrates and fats)-whole grain cereals, millets, vegetable oils, ghee, nuts and oilseeds and sugars.

Body building foods (Proteins)- Pulses, nuts and oilseeds, milk and milk products, meat, fish, poultry.

Protective foods (Vitamins and minerals) - Green leafy vegetables, other vegetables, fruits, eggs, milk and milk products and flesh foods.

PROJECTED OUTCOME:

The finding will give on insight into the assessment of interventional nutritional dietary pattern on growth of pre-schooler children.

Data collection procedure:-

- The investigator obtained written permission from the Selected slum area Bhopal.
- The purpose of the study was explained to them and confidentiality was assured to all the respondents. The children were selected by convenient sampling technique.
- The pre-assessment of height and weight done for 10 days on a total of 30 respondents following the administration of intervention diet for 10 days along with assessment of height and weight then assess the height and weight post-intervention for 10 days.

Ethical consideration:

- Formal permission was obtained from the Banjari and Fanda slums areas, Chief medical officer, Child development programme officer, Bhopal, Block medical officer.
- After explaining the purpose of the study written consent will be taken from the mother of preschooler children at Banjari and Fanda slums area.

Plan for data analysis:

The data will be analyzed using both descriptive and inferential statistics.

- Demographic variables & knowledge scores would be analyzed by using mean, mean percentage, mean difference and standard deviation.
- 't-test' will be used for effectiveness of assessment of interventional diet on growth of pre-schooler children.
- Chi square test used for finding the association between preinterventional score with selected demographic variables.

RESULTS:**Table No.1 Frequency and percentage distribution of pre-schooler children based on demographic variable.**

S/N	Demographic Variable	Frequency	Percentage
1	Age	4	70
		5	30
2	Sex	Male	53.33
		Female	46.7
3	Type of family	Joint Family	56.7
		Nuclear Family	43.33
		Extended Family	0
4	Parent education	Non- Family	40
		Primary	20
		High School	10
		Higher Secondary	20
		Graduate	10
		Post Graduate	0
5	Parent occupation	Labour	60
		Private job	26.7
		Government job	0
		Business	13.33

Table 1. Described about the frequency, percentage distribution of demographic variable. Distribution of the subject by age revealed that majority of the subject, i.e. higher (70%) belongs to 4 years followed by (30%) of pre-schooler in the age group of 5 year. With regard to sex higher of pre-schooler (53.33%) are male and (46.7%) are female. With regard to type of family that higher of pre-schooler belong to (56.7%) joint family and (43.33%) belongs to nuclear family. With regard to parent education that higher of Parents (40%) non-formal, (20%) of primary and higher secondary, (10%) of high school and (10%) of graduate. With regard to parent occupation higher of Parents are (60%) labour, (26.7%) having Private job and (13.33%) having self business.

Table 2: Analysis of effectiveness of selected nutritional diet in weight

N=30

Mean score	Pre-interventional mean	Post Interventional mean	t-test
Weight	13.66	13.90	23.77

This shows that intervention mean is greater than pre intervention mean. There is effectiveness of selected nutritional diet.

For proved it, paired T-test done. The result of T-test shows that obtained value is **23.77** which is greater than table value is **2.05**. so hypothesis H1 is accepted.

Table 3: Analysis of effectiveness of selected nutritional diet in height

N=30

Mean score	Pre-interventional mean	Post-interventional mean	t- test
Height	102.88	103.02	6.42

This shows that post intervention mean is greater than pre intervention mean. There is effectiveness of selected nutritional diet.

For proved it, paired T-test done. The result of T-test shows that obtained value is **6.42** which is greater than table value is **2.05**. so hypothesis H1 is accepted.

Table 4. Chi-square Test showing the association between pre-interventional mean of weight with selected demographic variables

Selected demographic variables	Category	Selected nutritional diet mean		Df	Table value	Obtained value	Significance
		≤	≥				
Age of children	4	15	6	1	3.84	6.19	S
	5	2	7				
Sex	Male	10	6	1	3.84	0.45	NS
	Female	7	7				
Education of parents	Non formal	5	7	5	11.07	1.77	NS
	Primary (1-4)	4	2				
	High school(7-10)	2	1				
	Higher secondary(11-12)	4	2				
	Graduate	2	1				
	Post graduate	0	0				
Occupation of parents	Labour	10	8	3	7.82	0.16	NS
	Private job	5	3				
	Govt. job	0	0				
	self Business	2	2				
Type of family	Nuclear	10	7	2	5.99	0.09	NS
	Joint	7	6				
	Extended	0	0				

NS= Not significant S= Significant

The table No 4. shows that there is significant association between pre-interventional score of weight and selected socio-demographic variables of children such as Age of child, and no significant association between pre-interventional score of weight and selected socio-demographic variables of children such as Sex, Type of family, Education of parents, Occupation of parents. So majority of demographic variable had no significant association hence the research hypotheses H2 is not accepted.

Table 5. Chi-square Test showing the association between pre-interventional mean of height with selected demographic variables

Selected demographic variables	Category	Selected nutritional diet mean		Df	Table value	Obtained value	Significance
		≤	≥				
Age of children	4	16	5	1	3.84	7.63	S
	5	2	7				
Sex	Male	8	8	1	3.84	1.41	NS
	Female	10	4				
Education of parents	Non formal	7	5	5	11.07	2.56	NS
	Primary (1-4)	3	3				
	High school(7-10)	3	0				
	Higher secondary(11-12)	3	3				
	Graduate	2	1				
	Post graduate	0	0				
Occupation of parents	Labour	11	7	3	7.82	0.18	NS
	Private job	5	3				
	Govt. job	0	0				
	self Business	2	2				
Type of family	Nuclear	10	7	2	5.99	0.02	NS
	Joint	8	5				
	Extended	0	0				

NS= Not significant S= Significant

Table No 5-Shows that there is significant association between pre-interventional score of height and selected socio-demographic variables of children such as Age of child, and no significant association between pre-interventional score of height and selected socio-demographic variables of children such as Sex, Type of family, Education of parents, Occupation of parents. So majority of demographic variable had no significant association hence research hypotheses H3 is not accepted.

DISCUSSION:

- The result of T-test shows that obtained value is **23.77** which is greater than table value is **2.05**. so hypothesis H1 is accepted.
- Majority of demographic variable had no significant association hence the research hypotheses H2 & H3 is not accepted.

Conclusion: Intervention was effective in increasing the weight and height of pre-schooler children through selected nutritional diet.

Recommendations:

1. Provide nutritional training for the teachers about good nutrition to the preschool children.
2. Provide dietary services to recognize the preschool malnutrition disease and put the treatment healthy programs for them.
3. Apply nutritional programs to the fathers and mothers about the recommended daily allowances and good healthy nutrition to the preschool children.
4. Preventing buy any candy foods like gas drinks or chips in the Kindergarten.
5. Making nutritional programs to the teachers about dental care in the preschool children.
6. Integrate nutritional courses to the children in the kindergarten to learning good food habits and practices.

Conflict of interest: No

Financial support: Self

REFERENCE:

[1] Swaminathan. M, Advanced Text Book of Food and Nutrition. 2nd Edition; Published by

Bangalore Printing and Co limited: page no 230, 540

[2] Kumar. A, Jai A. K: Mittal P. et. al, “Weight and Height of 5-10 yrs, old children of upper socio-economic status” Indian paediatrics. 1990;27(8);835

[3] Pari R, Chawla P and Menta S, “Retention of nutrition and health knowledge and proteins – After an in-service training programme”, Indian journal of nutrition and Dietetics. 1994; 21(11); 437-443.

[4] Shanti Ghosh, Nutrition and Child care, 2nd Edition, Jaypee brothers, 178.

[5] Malnutrition in India”. <http://www.Nutritionorg/misc/terms.shtml>.

[6] Malekafzali H. Community based nutritional intervention for reducing malnutrition among children under five years of age in the Islamic republic of iran. East Mediters Health Journal 2000, Mar-May:6(2-3)238-45.

[7] Sadka, L. Nancy, “Integrated child development services” New Delhi; published by UNICEF. 1984; 8-12pp.

[8] WHO Report, “Life in the 21st Century – a vision forals” WHO Geneva, 1998.

[9] Getanesh T. Protein Energy Malnutrition in urban children Prevalence and Determinants. Ethiop Medical Journal 1998; 36(3); 153-156.

[10] Rikimaru T, Risk Factors for the prevalence of Malnutrition among children science vitaminol (Tokyo). 1998 June; 44(3); 391-407.