

# Effectiveness of Nutri Shots on Weight Gain Pattern among Children Aged 4-5 Years at Selected Schools in Thiruvavarur District

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## Abstract

A study to assess and compare effectiveness of Nutri Shots on weight gain pattern among children aged 4-5 years. The quantitative approach and quasi experimental research design was adopted to assess effectiveness of Nutri Shots on weight gain pattern among 40 underweight children aged 4-5 years. The 40 underweight children were selected by purposive sampling method at selected schools in Thiruvavarur district who fulfilled the inclusion and exclusion criteria. Pretest weight gain pattern was assessed and supplementation of Nutri Shots for selected 40 underweight children aged 4-5 years was administered for a period of 30 days and posttest level of weight gain pattern was explored. The study results revealed that the posttest mean weight gain pattern score was 14.81 with S.D of 2.01. The calculated unpaired 't' value ( $t = 8.561$ ) of pre and posttest level of weight gain pattern indicates there was highly statistical significance at  $p < 0.0001$  among underweight children aged 4-5 years. The results find that Nutri Shots was effectively increasing the weight pattern of underweight children aged 4-5 years and can be further utilized as a preventive measure in precluding malnutrition.

**Keywords:** Nutri Shots, Under-Nutrition, Weight Gain Pattern.

## 1. Introduction

Childhood is a most sensitive period, particularly in human development that can impact later education and career opportunities. The starting five years of life is very important for children's growth and development. Infants and pre-school children are most vulnerable to the vicious cycle of malnutrition, especially under-nutrition. Poor feeding practices in infants and childhood, resulting in malnutrition, contribute to hindered mental and social development, unfortunate school execution and decreased efficiency in later life.

Malnutrition refers to a lack or excess of nutrient intake, an imbalance of essential nutrients, or improper use of nutrients. Underweight is defined as low weight for their age and the child can be stunted, wasted or both.

An adequate level of nutrition is very important to a child's growth and health development. Nutritional

supplements are considered to be the most appropriate method to improve children's growth and physical health.

### 1.1 Statement of the Problem

A study to evaluate the effectiveness of Nutri Shots on weight gain pattern among children aged 4-5 years at selected schools in Thiruvavarur district.

### 1.2 Objectives

- To formulate the Nutri Shots for underweight children aged 4-5 years.
- To perform the nutritive analysis for Nutri Shots supplementation.
- To supplement the Nutri Shots for underweight children aged 4-5 years.
- To assess and compare the effectiveness of Nutri Shots on weight gain pattern among underweight children aged 4-5 years.

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- To correlate a subset of demographic characteristics with the average differential in weight gain pattern among children who are underweight aged 4-5 years at selected schools in Thiruvavur district.

### 1.3 Hypotheses

#### 1.3.1 Null Hypotheses

**NH1** - There will be no significant effect in the pre and posttest level of weight gain pattern among underweight children aged 4-5 years at  $p < 0.05$  level.

**NH2** - There will be no significant association between the selected demographic variable on weight gain pattern among underweight children aged 4-5 years at  $p < 0.05$  level.

#### 1.3.2 Alternative Hypotheses

**AH1** - There will be significant effect in the pre and posttest level of weight gain pattern among underweight children aged 4-5 years at  $p < 0.05$  level.

**AH2** - There will be significant association between the selected demographic variable on weight gain pattern among underweight children aged 4-5 years at  $p < 0.05$  level.

## 2. Materials and Methods

A quasi-experimental research design was adopted to assess the effectiveness of Nutri Shots in increasing the level of weight gain pattern in underweight children aged 4-5 years. The sample size consisted of 40 underweight children (who met the inclusion and exclusion criteria) selected by purposive sampling. The independent variable of the study was Nutri Shots. The dependent variable was the pattern of weight gain. The study was conducted at The Merit Higher Secondary School and Gandhi Kamaraj Matriculation School in Thiruvavur district. The study includes underweight children aged 4-5 years who are willing to participate in the study, and the study excluded those with a normal BMI range.

The tool consisted of two items, a data collection tool and an intervention tool. The data collection tool used in this study was a self-structured questionnaire. After the pretest was completed, an evaluation of the weight gain pattern using Nutri Shots was performed. The Nutri Shots intervention tool was prepared by the investigator. Ingredients like ragi, green gram, roasted groundnut, moringa leaves, jaggery, ghee have been

used in the formulation of Nutri Shots. The intervention was provided for 30 days. After the intervention, the researcher conducted a post-test assessment of the weight pattern of underweight children aged 4-5 years. The collected data was analyzed and compared to identify the effectiveness of Nutri Shots in the pattern of weight gain in underweight children aged 4-5 years.

The findings of the study revealed that the intervention was administered for 30 days and reported that there was a significant difference in the pattern of weight gain before and after the test among the selected underweight children aged 4-5 years.

### 2.1 Ethical Consideration

The formal administrative approval was obtained from the Ethics Committee of Ganga College of Nursing and Allied Health Sciences. The written consent was obtained from the participant's mother and assent from the correspondent and principal of the selected Thiruvavur schools. The researcher was guided by basic ethical principles, such as the right to freedom from harm and discomfort, and respect for human dignity. The researcher gave freedom to all participants to voluntarily decide to participate or withdraw from the study and the right to ask questions at any time during the study. The investigator maintained the privacy of the study participant during the study.

### 2.2 Statistical Analysis

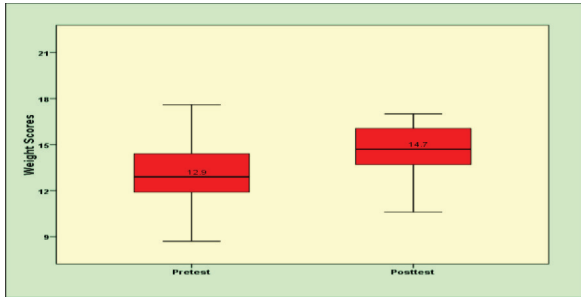
The demographic variables were described using descriptive statistics. One-way ANOVA/unpaired "t" test was used to analyze the pre and post-test level of weight gain pattern in children aged 4-5 years.

## 3. Result and Discussion

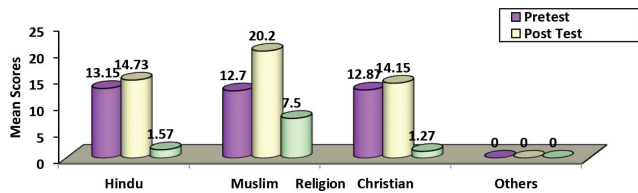
The participants most of them 21(52.5%) were in the age group of 5 years, 22(55.0%) were from male gender, 23(57.5%) were from urban area, 21(52.5%) were living in nuclear family, 24(60%) were have 3-4 members in their family, 35(87.5%) belongs to Hindu religion, 16(40.0%) were have 1-2 siblings. Regarding educational status of parents, 27(67.5%) of their father possessing any degree and above, 25(60.0%) of their mother possessing any degree and above. Regarding occupation, 17(42.5%) fathers were Self – employed/Skilled/Unskilled landless labourers and 24(60.0%) mothers were Homemaker/

**Table 1.** Effectiveness of Nutri Shots on weight gain pattern among underweight children aged 4-5 years

Test	Mean	SD	Mean Difference	Paired 't' Test and p-Value
Pretest	13.11	2.14	1.70	t = 8.561 p = 0.0001, S***
Post test	14.81	2.01		



**Figure 1.** Effectiveness of Nutri Shots on weight gain pattern among underweight children aged 4-5 years.



**Figure 2.** Association of weight gain scores among underweight children aged 4-5 years with selected demographic variables.

Unemployed but able to work with 14(35.0%) family income per month of Rs. 6,715-18,496 and 12(30.0%) were in the lower middle class.

Table 1 shows the effectiveness of Nutri Shots on weight gain pattern among selected underweight children. After supplementation with paired 't' test and there was a significant difference between pre and posttest while the calculated 't' value of t = 8.561 showed that it was statistically significant at p<0.001 level indicating that Nutri Shots was highly effective in increasing weight pattern.

The Figure 2 shows that the association of weight gain score among underweight children aged 4- 5 years with selected demographic variables, the findings revealed that there was a statistically significant association of mean improved weight gain score with Muslim religion with a mean score of 7.5 which showed a statistically significant value of p<0.0001. The other demographic variables showed no significant association with weight gain scores.

## 4. Discussion

The result of the study shows that the intervention was administered for 30 days states that the effectiveness of Nutri Shots was effective in increasing the weight pattern among underweight children aged 4-5 years.

Post test analysis on the level of weight gain pattern among selected underweight children revealed that the overall mean improved score for weight gain pattern was 1.70 and calculated 't' value was t = 8.561, showed statistically significant at the p<0.0001 level indicating that Nutri Shots were highly effective in improving weight gain pattern.

## 5. Limitations

The study was only conducted for a period of 30 days.

The investigator faces struggles to get permission from the mothers of participants.

## 6. Conclusion

The study aimed at developing a nutrient rich product Nutri Shots and assessing the effectiveness in increasing the level of weight gain pattern among underweight children aged 4-5 years. The results of the study revealed that there was a slight improvement in the level of weight gain pattern in underweight children aged 4-5 years. As compared to pretest, the posttest weight gain pattern score was improved after the administration of Nutri Shots.

Thus, study finding states that Nutri Shots was more effective in increasing the weight pattern among underweight children aged 4-5 years.

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## 8. Contributors

MSD: The conceptualization of the research, data collecting and analysis, manuscript preparation and finalization, and manuscript guarantor ship; NG, ER: edited and critically reviewed the manuscript.

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