

# A Descriptive study to find out the association between the anthropometric measurements and the selected demographic variables of preschool children

<b>Paper ID</b>	IJIFR/V5/ E3/ 016	<b>Page No.</b>	8894-8900	<b>Subject Area</b>	Education
<b>Key Words</b>	Anthropometric Measurements, Selected Demographic Variables & Preschool Children				

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## Abstract

*This study finds out the association between the anthropometric measurements and the selected demographic variables of preschool children. The objective of the study was to find out the association between the anthropometric measurements (weight in kg, height in cm & mid upper arm circumference in cm) with their selected demographic variables (such as gender, age, types of food, educational status of father, educational status of mother, occupational status of father, occupational status of mother, family income, area of residence, type of family) of preschool children. The sampling technique chosen for this study was non probability – purposive sampling technique and the sample size was 60 preschool children. The structured questionnaire to assess the demographic variables of pre school was formulated and the anthropometric measurements assessed and it was interpreted by the WHO Z score scoring system. The study findings also revealed that the majority of the pre school children were having normalnutritional status according to weight, height & mid upper arm circumference. Few preschool children were having severe malnutrition and very few pre school children were having extremely over nutrition. The study results revealed that there was significant association between the anthropometric measurements such as weight, height 7 mid upper arm circumference of preschool children with their selected demographic variables.*

## I. INTRODUCTION

A Nations Wealth depends on its healthy citizens. A Healthy adult emerges from healthy child. Early childhood constitutes the foundation of adult productivity and nutrition is a major determinant of the quality or strength of this foundation. As far as mankind is concerned, the earlier stager of growth and development is the vital factor in determining the 'whole' personality of an individual. Weight, height and mid arm circumference are considered as the most sensitive parameters for assessing anthropometric measurement of under five children. The worldwide malnutrition estimation rates indicate that 35.8% of pre school children in developing countries are underweight, 42.7% are stunted, and 9.2% are wasted. Many study results shows that the socio demographic variables greatly influences the nutritional status of the preschool children. The current study aimed to find out the association between the anthropometric measurement (weight in kg, height in cm & mid upper arm circumference in cm) with their selected demographic variables (such as gender, age, types of food, educational status of father, educational status of mother, occupational status of father, occupational status of mother, family income, area of residence, type of family) of preschool children.

## II. OBJECTIVES OF THE STUDY

To find out the association between the anthropometric measurements (weight in kg, height in cm & mid upper arm circumference in cm) with their selected demographic variables (such as gender, age, types of food, educational status of father, educational status of mother, occupational status of father, occupational status of mother, family income, area of residence, type of family) of preschool children.

## III. METHODOLOGY

- **Research Design:** Non experimental descriptive type of design was selected for the study.
- **Research setting:** The study was conducted at Pediatric Out Patient Department, Chettinad Hospital & Research Institute, Kelambakkam, Tamilnadu, India.
- **Population:** Children either male or female in the age of 3-5 years attending out patient pediatric department in a selected tertiary care hospital at Kelambakkam, Kanchipuram district, Tamil nadu.
- **Sample size & Sampling Technique:** The minimal sample size for this study was 60 preschool children who were satisfying the inclusion criteria. The participants of the present study were selected by non probability purposive sampling technique.
- **Sampling Criteria**
  - a. **Inclusion criteria:** The study include the pre school children who were
    - Attending outpatient pediatric department.
    - Willing (child & parents) to participate.
  - b. **Exclusion criteria:** The study exclude the pre school children who were
    - Mentally challenged

- Having medical & surgical emergencies.

➤ **Study Instruments**

- **Part-1: Structured demographic variable questionnaire** (The investigators collected the information through structured questionnaire distributed to the mothers of preschool children).
- **Part-2: Assessment of Anthropometric Measurements** (weight in kg, height in cm & mid upper arm circumference in cm) with WHO Z score interpretation.

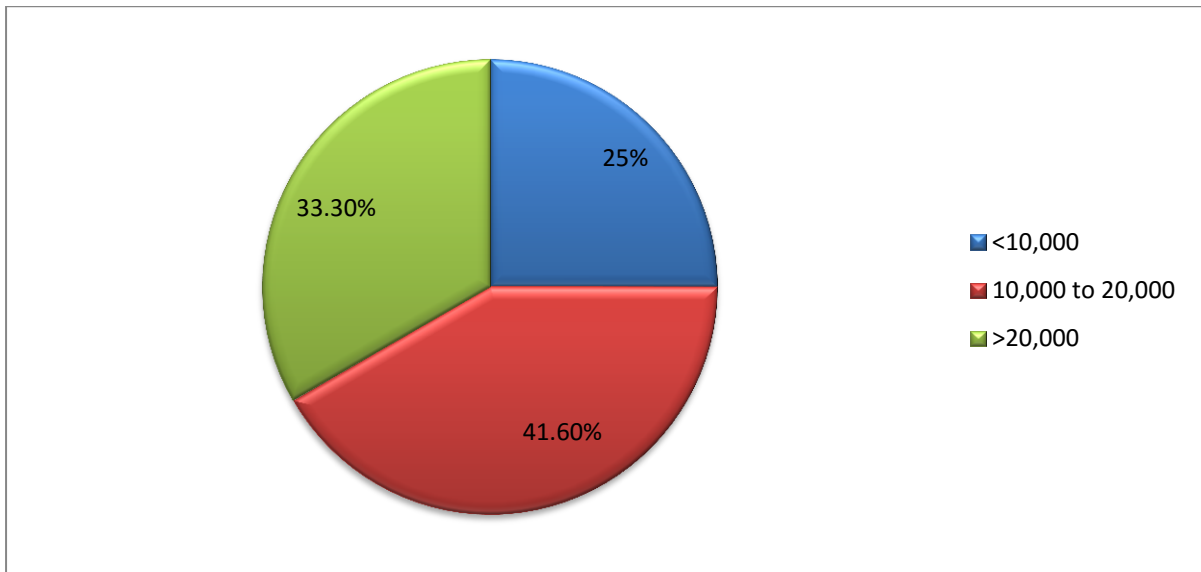
➤ **WHO Scoring interpretation**

Cut Of -Level	Weight For The Age	Height For The Age	Mid Upper Arm Circumference For The Age
Median $\pm$ 3sd	Over Weight	Over Length	Large Size
Median $\pm$ 2sd	Normal	Normal	Normal
Median $\pm$ 1sd	Moderately Under Weight	Moderately Stunting	Moderately Small Size
Median<1sd	Severely Under Weight	Severely Stunting	Severely Small Size

#### IV. DATA ANALYSIS

**Table 1: Frequency and percentage distribution of selected demographic variables of preschool children (N=60)**

S.No.	Characteristics	Category	F	P
1	Gender	Male	27	55%
		Female	33	55%
2	Age	3 - 4years	30	50%
		4 - 5years	30	50%
3	Types of food	Vegetarian	7	11.6%
		Non vegetarian	4	6.6%
		Both	49	81.6%
4	Educational status of the father	Non –literate	10	16.6%
		Primary/secondary education	18	30%
		Highschool/higher secondary education	15	25%
		Diploma/graduate	17	28.3%
5	Educational status of mother	Non-Literate	5	8.3%
		Primary/Secondary education	22	36.6%
		High School/ higher secondary education	12	20%
		Diploma/graduate	21	35%



**Figure 1: Percentage distribution of family income per month of preschool children.**

**Table 2: Association between weight and selected demographic variables of pre school children (N=60)**

S.No	Demographic Variables	Severe Malnutrition	Moderate Malnutrition	Normal	Over Nutrition	Extremely Over Nutrition	$\chi^2$
1	Gender						1510.914
	A)Male	1	1	24	1	-	
	B)Female	4	3	26	-	-	
2	Age						12.1956
	A)3-4years	2	2	28	-	-	
	B)4-5years	3	2	22	1	-	
3	Types Of Food						2522.63
	A)Vegetarian	1	1	5	-	-	
	B)Non Vegetarian	2	1	1	-	-	
	C)Both	2	2	44	1	-	
4	Educational Status Of The Father						68.1574
	A)Non –Literate	2	3	5	-	-	
	B)Primary/Secondary Education	1	1	16	-	-	
	C)Highschool/ Higher Secondary Education	2	-	12	1	-	
	D)Diploma/Graduate	-	-	17	-	-	
5	Education Status Of The Mother						21.7099
	A)Non-Literate	4	-	1	-	-	

	B)Primary/Secondary Education	-	2	19	1	-	
	C)High School/Higher Secondary Education	1	1	10	-	-	
	D)Diploma/Graduate	-	1	20	1	-	
6	Occupational of Father						38.8324
	A)Government Employee	1	1	1	-	-	
	B)Private Employee	3	3	33	1	-	
	C)Business	1	-	16	-	-	
7	Occupational Of Mother						27.6661
	A)Government Employee	-	-	1	-	-	
	B)Private Employee	2	1	7	-	-	
	C)Business	-	1	2	-	-	
	D)Home Maker	3	2	40	1	-	
8	Family Income Per Month In Rupees						16.454
	A)<10,000	2	1	12	-	-	
	B)10,000 To 20,000	1	1	23	-	-	
	C)>20,000	2	2	16	1	-	
9	Area Of Residency						29.78
	A)Rural	3	1	27	-	-	
	B)Urban	1	2	14	1	-	
	C)Semi Urban	1	1	10	-	-	
10	Type Of Family						40.4313
	A)Singleparent Family	2	-	17	-	-	
	B)Nuclear Family	-	1	21	-	-	
	C)Joint Family	2	1	8	-	-	
	D)Extended Family	1	2	4	1	-	

## V. DISCUSSION

### 1. Frequency & percentage distribution of demographic variables of preschool children:

The study results showed that majority of Pre School children were females. 50% of children in the age of 3-4 years and 50% of children in the age group of 4-5 years. Majority of them (81.6%) were belonging to both vegetarian and non vegetarian food group. Few (16.6%) of the preschool children father's were non-literate. Very few (8.3%) of the pre school children mothers were non- literate. Most of the pre school children father are private employers, majority of pre school children mothers

are home makers, most of the pre school children family income is 10,000 to 20,000, most of the pre school children living in rural area, most of the pre school children family is nuclear family.

**2. Mean value of anthropometric measurements of preschool children:**

The study findings shows that the mean value of weight is 13.38kgs, the mean value of height is 95.95cm and the mean value of mid upper arm circumference is 15.18cm.

**3. Frequency and percentage distribution of degree of malnutrition among preschool children:**

The study findings show that majority of the pre school children were having normal nutritional status according to weight, height & mid upper arm circumference. Few preschool children were having severe malnutrition and very few pre school children were having extremely over nutrition.

**4. Association between weight and selected demographic variables of preschool children:**

The study results shows that shows that there is a significant association between the selected demographic variables of preschool children such as gender, age, type of food, type of family, education of mother, education of father, occupation of mother, occupation of father, family income, place of residence and sources of information with their weight at  $p < 0.05$  level.

**5. Association between height and selected demographic variables of preschool children:**

The study findings shows that there is a significant association between the selected demographic variables of preschool children such as gender, age, type of food, type of family, education of mother, education of father, occupation of mother, occupation of father, family income, place of residence and sources of information with their height at  $p < 0.05$  level.

**6. Association between mid upper arm circumference and selected demographic variables of preschool children:**

The study results shows that there is a significant association between the selected demographic variables of preschool children such as gender, age, type of food, type of family, education of mother, education of father, occupation of mother, occupation of father, family income, place of residence and sources of information with their mid upper arm circumference at  $p < 0.05$  level.

## VI. CONCLUSION

The study results showed that there was a strong association between the selected demographic variables and the level of anthropometric measurements (weight, height and mid upper arm circumference) of preschool children. The data provides baseline information for conducting future research on malnutrition.

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ISSN: 2347-1697

*International Journal of Informative & Futuristic Research (IJIFR)*

*Volume - 5, Issue -3, November 2017*

*Page No. : 8894-8901*

#### PAPER CITATION

Prasad, J.L. , Pavithra.M, Vijay.S, Subbulakshmi.S:: “A Descriptive study to find out the association between the anthropometric measurements and the selected demographic variables of preschool children” *International Journal of Informative & Futuristic Research (ISSN: 2347-1697)*, Vol. (5) No. (3), November 2017, pp. 8894- 8901, Paper ID: IJIFR/V5/E3/016.



*Jyotish Lal Prasad, Pavithra. M, Vijay. S, Subbulakshmi. S :: A Descriptive study to find out the association between the anthropometric measurements and the selected demographic variables of preschool children*

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