

## RESEARCH ARTICLE

# The effect of maternal employment on the nutritional status of pre-school children

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### ABSTRACT

**Background:** Children contribute to the vital human potential and impart strength to the national economy and development. The major determinants of the nutritional status of these children were age, household income, number of children in the family, duration among them, education of the parents, poor personal hygiene, unsatisfactory environmental conditions, and poor sanitary facilities. **Aim and Objective:** The aim of this study was to assess the effect of maternal employment on the nutritional status of pre-school children. **Materials and Methods:** Weight and height of children were measured using digital weighing machine and stadiometer respectively. Data were stored on the WHO Anthro software package that was used in calculating anthropometric indices. The program uses figures from the national center for health statistics and centers for disease control and prevention, Atlanta (NCHS/CDC) as an international reference population. A questionnaire is used to assess the employment status of mother. **Results:** Children those who have had employed mothers showed 11% stunted ( $P = 0.4616$ ), 30.3% ( $P < 0.0001$ ) wasting, and 31.8% ( $P < 0.0001$ ) underweight compared to unemployed mothers of middle-class family. **Conclusion:** In middle-class families, women work outside to fulfill their basic needs, but they fail to provide care to their children. It has been proved that financial crisis as well as lack of care leads to malnutrition in children those who have employed mothers when compared to unemployed mothers among middle class families.


**KEY WORDS:** Employed Mothers; Pre-school Children; Anthropometric Software; Underweight

### INTRODUCTION

Pre-school age is considered as crucial period in the development of food habits. The period of 1–6 years is referred as the pre-school years. This period is very important in children's life as they form the foundation for the future health of the child. Children who belong to middle-class family are most vulnerable to malnutrition due to low dietary intakes; inequitable distribution of food within the

household.<sup>[1]</sup> Women also play important roles as generators of family income, whether in household farms or businesses or as wage employees. In developing countries, especially such work is likely to be essential to family survival.<sup>[2]</sup>

Nowadays, the trend is being changed that is the mothers are working outside. Women's employment increases household income, with consequent benefit to household nutrition. Although women's employment enhances the household's accessibility to income, it may also have negative effects on the nutritional status of children, as it reduces a mother's time for childcare. Therefore, this study has been designed to assess and compare the nutritional status of pre-school children of employed and unemployed mother of middle-class families in suburban area of Chennai.

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**Table 1:** Distribution of nutrition indicator values of children who have employed mothers

Nutritional level	Height-for-age		Weight-for-age		Weight-for-height	
	No.	%	No.	%	No.	%
No. below median-2 SD	13	11.5	34	30.3	35	31.8
No. below median-1 SD	40	36.3	37	33.6	38	34.5
No. below median±1 SD	46	41.8	31	28.8	28	25.5
No. below median+1 SD	11	10.4	8	7.2	9	8.2
Total	110	100	110	100	110	100

SD: Standard deviation

**Table 2:** Distribution of nutrition indicator values of children who have unemployed mothers

Nutritional level	Height-for-age		Weight-for-age		Weight-for-height	
	No.	%	No.	%	No.	%
No. below median-2 SD	6	5.5	12	10.3	15	13
No. below median-1 SD	39	35.3	32	29	29.3	26.7
No. below median±1 SD	55	50.1	58	53.3	61	55.8
No. below median+1 SD	10	9.1	8	7.1	5	4.5
Total	110	100	110	100	110	100

SD: Standard deviation

**Table 3:** Comparison of percentage of malnutrition

Nutritional status	Stunted		Wasting		Underweight	
	No.	%	No.	%	No.	%
Employed	13	11.5	34	30.3	35	31.8
Unemployed	5	5.5	12	10.2	15	13
<i>t</i> value	<i>t</i> =0.7376		<i>t</i> =4.3211		<i>t</i> =4.1395	
<i>P</i> value	<i>P</i> =0.461		<i>P</i> <0.0001*		<i>P</i> <0.0001*	

\*Highly statistically significant

## MATERIALS AND METHODS

### Subjects

This cross-sectional study was undertaken in suburban part of Thiruvallur district. The study was conducted on 220 children including 110 children having employed mothers and 110 children having unemployed mothers. Children in the age group of 3–5 years were taken. The participants were meticulously briefed regarding the nature of the study and written consent was obtained from parents. Employed mothers were working as a teacher and were working in factories or private service. Employed mothers were earning a salary between Rs. 5,000 and 10,000 per month.

### Methods

The demographic data were collected from all participants. The study was carried out after getting ethical committee approval. General information about name, age, height, and weight of the participant and information about medical history and cardiovascular diseases were obtained. A questionnaire comprised a part of diet recall which was taken to measure the calorie intake per day. Socioeconomic

status was measured by the wealth index scale. Family income per month of both mother and father income was taken into consideration.

### WHO Anthro Software

Anthropometric assessment was made using appropriate instruments. Height was measured in centimeters and weight was measured in kilograms. All the details are saved in WHO Anthro software. For each of the anthropometric indices, height-for-age, weight-for-age, and weight-for-height comparisons are expressed in terms of the number of children falling into various standard deviation categories from the international reference population median. The extent of malnutrition is expressed as the percentage falling two or more standard deviations (s) below the median. Children were classified as stunted when their height-for-age was below the reference median minus two standard deviations. They were considered as wasted when their weight-for-age or weight-for-height was below the reference median value minus two standard deviations.

### Statistical Analysis

Data processing and analysis were performed using the SPSS 20.0 statistical program to analyze the values between the groups. An unpaired *t*-test was used to investigate the differences in height-for-age and weight-for-age.

## RESULTS

Findings of the present study are presented in Tables 1-3.

## DISCUSSION

Children those who had employed mothers showed underweight (31.8%), wasting (30.3%), and stunting (11.5%) compared to children those who had unemployed mothers. These prevalence rates of malnutrition in these children indicated the lack of time for childcare as well as low socioeconomic status. Although the prevalence rates of malnutrition computed from the WHO standards, this study mainly indicated mother's income as well as family total income as an important predictor of malnutrition in the middle class families. A study has stated that about 25% of urban children and 44.5% of rural children belong to malnourished class.<sup>[3]</sup> Another study also clearly explained that the percentage of children of illiterate mothers who were undernourished was 2–3 times higher than the percentage among children of mothers who completed high school.<sup>[4]</sup> Thus, development and poverty alleviation program must focus on the poorest segment of societies to improve their economic status and thereby the health conditions. One of the most important limitations was the study sample that was small and it has to be done on a larger scale.

## CONCLUSION

Women's employment has negative effects on the nutritional status of children, as it reduces a mother's time for childcare in middle-class families. Working women may rely on other

members of the household to provide childcare, but the quality of care provided by these substitutes may be poor. In middle-class families, women work outside to fulfill their basic needs, but they fail to provide care to their children. It has been proved that financial crisis as well as lack of care leads to malnutrition in children those who have employed mothers when compared to unemployed mothers.

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