A Study to Assess the Effect of Maternal Employment on Nutritional Status of Children in Durgapur, West Bengal

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Abstract:

Childhood Malnutrition is one of the major concern in various developing countries. Poor growth of child is often linked with the occurrence of different non communicable diseases. The recent report shows the increase rate of double burden disease- undernutrition and over nutrition. Overweight and obesity has become common health issues in developed and developing countries nowadays. Thus proper care of the child is essential where mother acts as a protector for the child. So, the objective of the study is to identify and compare the nutritional status of children (3-5 years) of employed & unemployed mothers in different areas of Durgapur. The aim is to know the effect of maternal employment on nutritional status of children. A descriptive research design was conducted over a period of three months with a pre tested validated questionnaire among children of employed (n=50) & unemployed mothers (n=50). It is observed that the educational level of employed mothers was 76% whereas for unemployed mothers it was only 26%. Severe stunting was more in children of employed mothers (14%) compared to unemployed mothers (6%). 18% children of unemployed mothers were moderately undernourished whereas moderate over nutrition was more in children of employed mothers (14%). Wasting was more in children of employed mothers (22%) compared to unemployed group (10%). A significant association ($p < 0.05$) was observed between frequency of consumption of ready to eat food products with nutritional status (weight for age & weight for height). As there is a lack of knowledge & practice, so proper nutrition education may potentially improve the nutritional status of children.

Keywords: Maternal Employment, Nutritional Status, Wasting, Stunting.

1. INTRODUCTION:

Children signifies hope and upcoming future of the world and nation. Nutrition does not just mean health but also progress and growth. The main purpose of taking care of children is to promote healthcare practices to develop better health ensuring all dietary needs. Development of child health care is related to economic, political and cultural development [1]. Good nutrition is essential for the growth of children and to achieve their all-developing habits that includes physical and mental development.

WHO defines health as "a state of complete physical, mental social, and spiritual wellbeing not merely the absence of disease or infirmity". Though all components are equally important but only the physical portion of these can be measured and compared. Malnutrition causes to failure in initial physical growth, late motor skills, reasoning, behavioural development and low IQ. It decreases the immunity and increases the risk of death rates in early ages of children under five [2].

Babies through this phase of life it's just about the breast milk/mother milk, formula milk or both in combination. During 6 months, furthermost babies start taking solid foods in strained form of fruits, vegetables, meats and also iron fortified foods because breast milk does not provide enough iron and zinc. Once the fortified foods are introduced healthy amount of fat is also required for their proper brain and nerve development.

Toddlers and pre-schoolers, they grow very fast and their appetite change immensely. So one day they will consume a lot of foods and the very other day they hardly consume anything. Its normal and we should provide them the best & healthy options of food that they need. Calcium is important for the growth of strong bones and teeth and milk is one the best source of it. Fibre is another important focus part of their diet, so this is the time to introduce them to fruits, vegetables, whole grains, beans which provide enough fibre [3].

Childhood malnutrition in India is a major problem and constant difficulty for India's public management system. India was among the nations with the lowest results for child health indicators in the first National Family Health Survey (NFHS) in 1992–1993[4]. According to the survey, more than half of young children under the age of four were underweight and underdeveloped. A normal kid's body mass index was abnormally low for every sixth child.

India still has one of the worst rates of child malnutrition in the world, despite decades of investment to address this problem. India is ranked at the bottom (107^{th} rank of 121 Countries)

of the Global Hunger Index (2022) which is determined by factors such as child stunting, wasting and under-nutrition [5].

Maternal employment is reaching heights with great pace that people are unable to discover about its prevalence and this change has its huge impact on society. Family size is also getting smaller. Also modern technology has taken over and reduced the amount of necessary household work & food preparation. In addition, women roles are reformed in a new way. Child rearing concepts are different and adult roles are also not same as previous days. The research over 20-30 years have showed that mothers employment status is not so robust a variable that the comparison of children of employed and unemployed mothers will reveal meaningful difference [6]. The particular factors are the social class, fulltime or part time job or business, the mother's marital status, both parents' attitude, mothers medical condition, middle class lower class, gender of the child, mothers sense of wellbeing, parenting style, food they make their child eat etc. [7].

According to a number of studies [8, 9], children whose mothers work outside the home have worse nutritional status than kids whose mothers do not work outside. The most common type of malnutrition among children under five is protein energy malnutrition which is characterised by a decline in weight for age, height for age or weight for height. The mother is crucial for the child's physical, mental and social development. Mother is the first teacher of a child & they share a special bond between them. Hence the purpose of the current study is to evaluate the nutritional status of under five children & the impact of maternal employment on nutritional status.

The remaining article is constructed in four section. Section 2 highlights the objective of the study. Section 3 describes the materials and methods which are used for the study. After using the necessary methods for analysing the collected data, the obtain results are discussed in section 4. Finally, the overall conclusion has been made in section 5.

2. OBJECTIVES OF THE STUDY:

A. To identify the nutritional status of children (3-5 years) of employed and unemployed mothers as measured by anthropometric measurements.

B. To compare the nutritional status among children (3-5 years) of employed and unemployed mothers.

C. To assess the effect of employment of mother on nutritional status of child.

3. MATERIALS & METHODS:

Study Design:

Descriptive research design was used to collect the data. The subjects were recruited from different nursery schools of Durgapur through purposive sampling technique. One to one interview method was used to collect the data.

Study Population:

3-5 years of children were selected from different localities & nursery schools of Durgapur. The mothers of children (3-5 years) willing to share information regarding dietary pattern were included in the study.

Inclusion Criteria:

Employed & unemployed mothers of 3-5 years aged children were included.

Exclusion Criteria:

Children below 3 years & above 5 years were excluded.

Study Duration:

The data collection was carried out for a period of 3 months during the month of December 2022 to February 2023.

Study Tools:

A pre coded, pre tested validated questionnaire containing eleven questions were used to collect the data. The questionnaire included demographic information like age of the mother, religion, types of family, occupational status of mother, educational level, monthly income etc.

Anthropometric information like age of child, weight of the child at birth, current weight & height of the baby were taken.

After collection of data the weight & height of the child were plotted in WHO Growth Chart according to their age.

Height/Length-for-age Boys/Girls

Z-score cut off point between -2 to +2 SD indicates normal height for age.

Z-score cut off point < -2 SD indicates low height for age as stunting.

Z-score cut off point <-3 SD indicates low height for age as severe stunting.

Weight-for-age Boys/Girls

Z-score cut off point between -2 to +2 SD indicates normal weight for age.

Z-score cut off point < -2 SD indicates low weight for age as moderate undernutrition.

Z-score cut off point <-3 SD indicates low weight for age as severe undernutrition.

Z-score cut off point >+2 SD indicates high weight for age as moderate over nutrition.

Z-score cut off point >+3 SD indicates high weight for age as severe over nutrition.

Weight-for-height Boys/Girls

Z-score cut off point between -2 to +2 SD indicates normal height for age.

Z-score cut off point < -2 SD indicates low height for age as stunting.

Z-score cut off point <-3 SD indicates low height for age as severe stunting.

Data Collection:

Questionnaire administration

Before administering the questionnaire, written informed consent was taken from each participants. Those who agreed to share their information were requested to fill up the forms. If any participants were not willing to share their information, they were willing to do so.

4. RESULTS & DISCUSSION:

After analysing the data, the demographic information is tabulated in table-1.

Table-1: Demographic details of employed & unemployed mothers

	Unemployed mothers		**Employed mothers**	
	Frequency (n=50)	Percentage (%)	Frequency (n=50)	Percentage (%)
Age in years				
18-28	36	72	36	72
29-38	11	22	14	28
39-48	1	2	0	0
Above 48	0	0	0	0
Religion				
Hindu	42	84	47	94
Christian	0	0	0	0
Muslim	8	16	3	6
Types of family				
Joint family	29	58	23	46
Nuclear family	18	36	26	52
Extended family	3	6	1	2
Educational status				
Illiterate	1	2	0	0
Primary level	2	4	0	0
High school education	15	30	12	24

	Unemployed mothers		Employed mothers	
	Frequency	Percentage (%)	Frequency	Percentage (%)
Higher secondary	19	38	0	0
Degree and above	13	26	38	76
Monthly income (in rupees)				
<5000	-	-	4	8
5000-10000	-	-	12	24
10000-15000	-	-	25	50
>15000	-	-	8	16
Age of the child				
3-4	18	36	18	36
4-5	33	66	32	64
Gender of the child				
Male	29	58	26	52
Female	18	36	24	48
Weight of the child at birth				
<2.5kg	3	6	2	4
2.5-3.5kg	33	66	36	72
>3.5kg	14	28	12	24

Figure-1: Comparison of nutritional status (height for age) of children of employed & unemployed mothers

Figure 1 shows that most of the children of employed & unemployed mothers were normal according to their height for age. 68% children of unemployed mothers were normal whereas 60% children of employed mothers were having normal height for age. Severe stunting was more in children of employed mothers (14%) compared to unemployed mothers (6%).

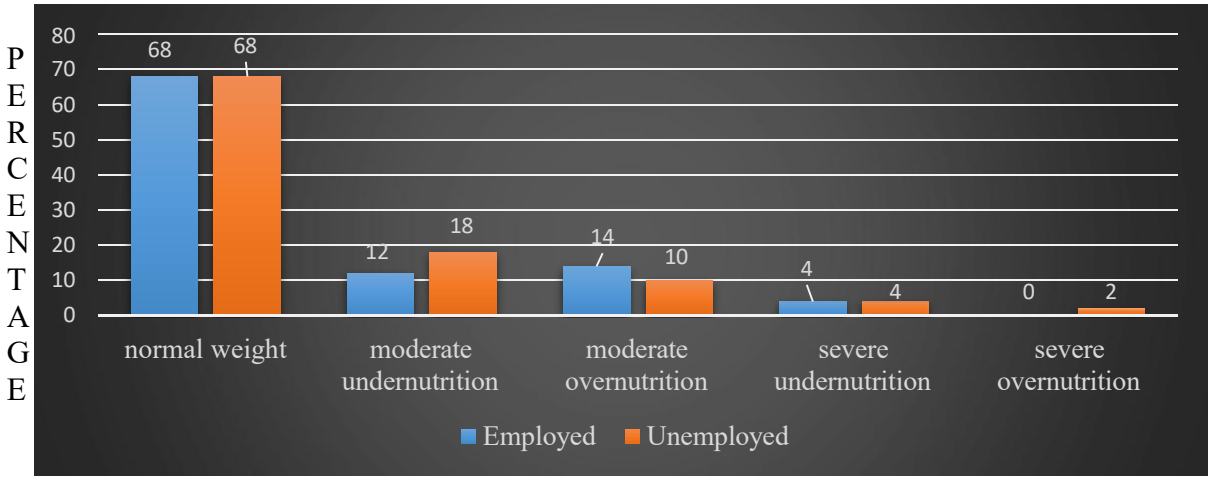

Figure-2: Comparison of nutritional status (weight for age) of children of employed & unemployed mothers

Figure-2 shows that children of both employed & unemployed mothers had normal nutritional status. 18% children of unemployed mothers were moderately undernourished whereas moderate over nutrition was more in children of employed mothers (14%).

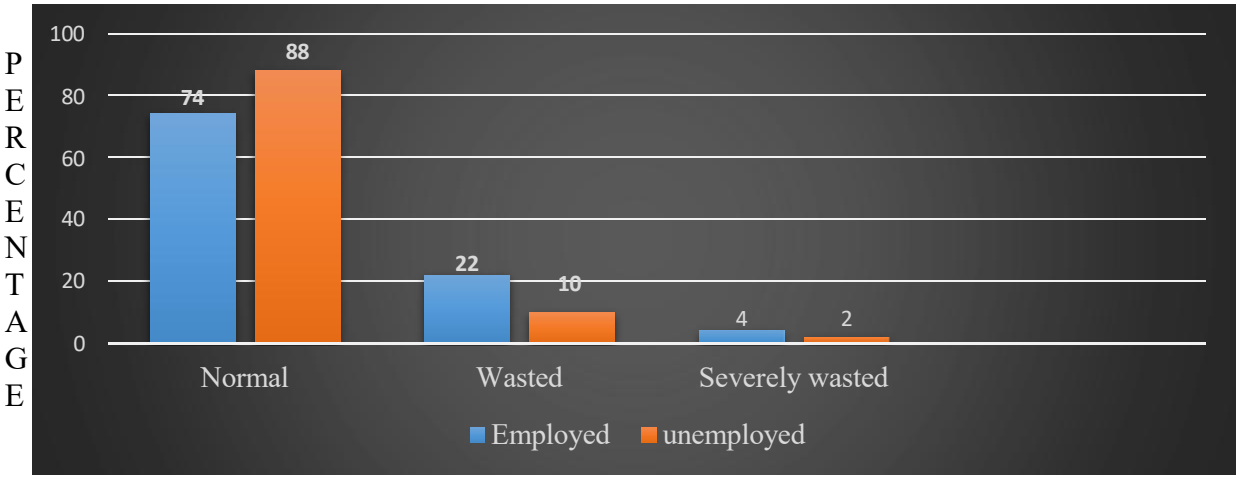

Figure-3: Comparison of nutritional status (weight for height) of children of employed & unemployed mothers

Wasting is highly prevalent in India. Wasting means the distribution of weight as per height. Figure-3 shows that 88% children of unemployed mothers were normal according to their weight for height where as 74% children of employed mothers were normal. 22 % children of employed mothers were wasted. Even the percentage distribution of severe wasting was more in employed group (4%) compared to unemployed group (2%).

Table-2: Association of nutritional status of children with educational status

	Weight for age					
	Employed mothers			**Unemployed mothers**		
Educational status	**Chi square value**	**df**	**P value**	**Chi square value**	**df**	**P value**
	16.98	16	0.38 (not significant)	9.20	16	0.8 (not significant)
	Height for age					
	3.632	6	0.72 (not significant)	5.236	6	0.51 (not significant)

	Weight for Height					
Educational status	**Employed mothers**			**Unemployed mothers**		
	Chi square value	df	P value	Chi square value	df	P value
	6.409	6	0.37 (not significant)	2.45	6	0.87 (not significant)

Data in the table 2 shows that demographic variable-educational status had no significant association with weight of children, height of children of both the employed and unemployed mothers. Data has also showed that the educational status had no significant effect on weight for height of children of both the employed and unemployed mothers.

Table-3: Association of nutritional status of children with frequency of consumption of ready to eat food products

	Weight for age					
	Employed mothers			**Unemployed mothers**		
Frequency of consumption of ready to eat food products	**Chi square value**	**df**	**P value**	**Chi square value**	**df**	**P value**
	21.554	12	0.04 (significant)	11.99	12	0.4 (not significant)
	Height for age					
	4.084	6	0.66 (not significant)	5.864	6	0.43 (not significant)
	Weight for Height					
	13.79	6	0.03 (statistically significant)	6.65	6	0.35 (not significant)

Ready to eat food products are pre cleaned, pre-cooked, mostly packaged food items ready for consumption. These food items are mainly rich in high amount of sodium, trans fatty acids, saturated fatty acids etc. Table 3 shows that there was no significant association between frequency of ready to eat food consumption with weight, height as per age & weight as per height in children of unemployed group. But strong associations are present between weight for age & weight for height with frequency of ready to eat food consumption for children of employed mothers.

5. CONCLUSION:

Our study introduced a questionnaire in multidimensional scale to understand & compare the nutritional status of children of employed & unemployed mothers in Durgapur. The percentage of normal children according to weight for age, height for age & weight for height was high both for employed & unemployed mothers. A significant association was also present between consumption of ready to eat foods & nutritional status for children of employed mothers. So, proper knowledge regarding food is very much essential. Both employed & unemployed mothers need to be educated properly regarding the food pattern for their children. It will help to reduce the rate of stunting, wasting, under & over nutrition.

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