

## Maternal Employment and Nutritional Status of Preschool Children

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### ABSTRACT

**Background:** The early childhood development is most crucial and the mother's care and attention is essential. The purpose of the study was to compare the nutritional status of preschool children between employed and unemployed mothers.

**Subjects and Method:** The comparative cross-sectional study was conducted among 400 children aged fewer than five years with their respondents. The study was conducted in the urban community of Rajshahi city from January, 2018 to December, 2018. The dependent variables were nutritional status of preschool children. The independent variables were socio-demographic characteristics and maternal employment. Respondents were selected by a purposive sampling method and data were collected by semi-structured questionnaire by face-to-face interview. Nutritional status was determined by anthropometric measurements. The statistical analysis was conducted using SPSS version 21. The findings of the study were presented by frequency, percentage, Mean, SD and Chi square test.

**Results:** The mean ages of the employed and unemployed mothers were Mean= 30.79; SD=2.99 and Mean= 30.58; SD= 2.89 years respectively. Most of the employed mothers (91.0%) practiced exclusive breast-feeding for 6 months. Among the unemployed mothers, 64.0% practiced, which was a high statistical difference ( $p < 0.001$ ). There was highly significant statistical difference among mothers of two groups regarding starting complementary feeding as  $p = 0.004$ . There was no significant statistical difference regarding children's mid upper arm circumference (MUAC) classification. Weight for age (WAZ) - score, height for age (HAZ)-score and weight for height (WHZ)-score of employed and unemployed mother's children showed a significant difference ( $p < 0.05$ ).

**Conclusion:** Maternal employed status plays an essential role in determining child health care practice, which may influence a child's health and development in later life.

**Keywords:** childhood nutrition, maternal employment, stunting, underweight, wasting.

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## BACKGROUND

Child malnutrition is considered as one of the major public health problems in developing countries like Bangladesh, where resources are highly insufficient. Adequate nutrition is believed to be a key factor for a country's socio-economic development. Malnourished people are reflected as a burden to a nation. Under-nutrition is much more prevalent than over-nutrition in Bangladesh. Millions of children and women suffer from one or more forms of malnutrition, including low birth weight, underweight, wasting, stunting, and micronutrient deficiency (Islam, 2018). The period between weaning and the age of five is nutritionally regarded as the most vulnerable period of the life cycle. In this period, rapid growth, loss of passive immunity and the development of the immune system against infection occur (Chanda et al., 2014).

Malnutrition is the salient source of 3.5 million deaths globally, and responsible for 35% of the morbidities among children under five which undoubtedly, defines malnutrition as a prime cause for critical health and development disorders faced by people, mostly children in developing countries. Characteristics of children suffering from malnutrition include stunting or chronic malnutrition (low height for age), wasting or acute malnutrition (Low weight-for-height) or being underweight for their age (Das & Gulshan, 2017). Traditionally, a woman's place has been her home and a generation ago, her employment outside her home was looked down by the society. This situation has now changed and women have started seeking employment outside their homes.

Those entering the workplace have both negative and positive effects. The one is that it increases the family income but cuts into the time that she has to spend with her children (Ketema et al., 2020).

In developing countries, an estimated 50.6 million children aged less than five years (under-five children) are malnourished, and those who are severely malnourished with a severe illness leading to hospitalization face a case-fatality rate exceeding 20%. Recent data from the World Health Organization showed that 60% of all deaths occurring among under-five children in developing countries, could be attributable to malnutrition, and the Global Burden of Disease Study estimated that childhood malnutrition alone accounted for approximately half (15.9%) of the global loss of disability-adjusted life years (DALYs). Thus, poor nutrition severely hinders personal, social and national development. Bangladesh has the highest prevalence of childhood underweight among all countries in the world, except North Korea, and only seven countries have a higher prevalence of child stunting (Faruque et al., 2008).

Women play multiple roles in the family that affect the health and wellbeing of all family members. In almost all societies around the world, they are assigned by custom to be the primary caregivers to infants and children (UNDP 1995). Activities carried out by women such as breastfeeding, preparing food, collecting water and fuel, and seeking preventative and curative medical care are crucial for a child's healthy development. In this modern era, most mothers have become part of the labour force compared to

previous times. Maternal employment influences children's feeding practices. Thus, it reflects a child's nutritional status (Glick, 2002).

## SUBJECTS AND METHOD

### 1. Study Design

The study was a comparative cross-sectional study. The study was conducted in the urban community of Rajshahi city from January, 2018 to December, 2018

### 2. Population and Samples

The Study population were children fewer than five years and their mothers of selected areas. Exclusion criteria were-severely ill child and who will unwilling to participate in the study. The study sample were 400 children with their mothers and data were collected by semi-structured questionnaire by face-to-face interview.

### 3. Study Variable

The dependent variables were nutritional status of preschool children. The independent variables were socio-demographic characteristics and maternal employment.

### 4. Operational Definition of Variables

**Nutritional status** It is the condition of health of a person that is influenced by the in-take and utilization of nutrients. It will be measured through height for age, weight for age and weight for height ratios and mid upper arm circumference (MUAC).

**Maternal employment** Women who are working outside the home for income in addition to raise their children.

### 5. Study Instrument

Respondents were selected by a purposive sampling method and data was collected by a semi-structured interviewer who administered a questionnaire via a face-to-face interview. Nutritional status was determined by anthropometric measurements. Weight of the child was measured by Digital weight machine. Height of the child was measured by stadiometer. Mid upper arm circumference (MUAC) was measured by MUAC tape.

### 6. Data Analysis

The statistical analysis was conducted using SPSS (statistical package for social science) version 20 statistical software. The findings of the study were presented by frequency, percentage in tables and graphs. Associations of categorical data were assessed using the Chi-square test (CI 95% in this study), where  $p < 0.05$  was considered significant.

### 7. Research Ethics

All the information collected for the study was utilized only for the purpose of thesis and were not disclosed to anyone outside the research team. At the beginning, approval was obtained from the ethical committee of NIPSOM, under the Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. Then permission was taken from city mayor. Then informed written consent was obtained from participants after informing about the purpose of the study. A complete assurance was given that all information would be kept confidentially.

## RESULTS

The mean ages of the employed and unemployed mothers were (Mean= 30.79; SD= 2.99) and (Mean= 30.58; SD= 2.89) years respectively. There was no significant statistical difference between mothers of the two groups regarding age as  $p > 0.05$  ( $\chi^2$ -test). No employed mothers had educational status below primary. A highly significant statistical difference was found among mothers of two groups regarding educational status of  $< 0.05$  ( $\chi^2$ -test). 6.0% of husbands of unemployed mothers were illiterate and 11.0% had educational status up to primary. A highly significant statistical difference was found between mothers of two groups regarding husbands' educational status between  $p$  is  $< 0.05$  ( $\chi^2$ -test). There was significant statistical difference between mothers of two groups regarding monthly family income  $p < 0.05$  ( $\chi^2$ -test) (Table 1).

The study showed that no significant statistical difference between mothers of the two groups regarding children’s gender and child’s age  $p > 0.05$ . There was a highly statistical difference between mothers of two groups regarding exclusive breast-feeding status and starting complementary feeding as  $p < 0.05$ . There was no significant statistical difference between mothers of the two groups regarding the starting frequency of

feeding, as  $p < 0.05$ . Majority of the employed mothers (55.0%) gave their children deworming drugs within 6 months whereas most of the unemployed mothers (95.0%) did not give deworming drugs to their children within 6 months. The study showed significant statistical differences between mothers of two groups regarding children’s deworming status as  $p < 0.05$  (Table 3).

**Table 1. Socio-demographic characteristics**

Characteristics	Category	Employed mother N (%)	Unemployed mother N (%)	OR	p
<b>Age (years)</b>	26-29	70 (35.0)	70 (35.0)	0.04	0.983
	30-33	86(43.0)	88 (44.0)		
	Above 33	44 (22.0)	42 (21.0)		
<b>Educational status</b>	Illiterate	0 (0.0)	42 (21.0)	68.56	<0.001
	Up to primary	0 (0.0)	36 (18.0)		
	Up to secondary	54 (27.0)	78 (39.0)		
	Above secondary	146 (73.0)	64 (32.0)		
<b>Educational status of husbands</b>	Illiterate	0 (0.0)	12 (6.0)	33.54	<0.001
	Up to primary	0 (0.0)	22 (11.0)		
	Up to secondary	42 (21.0)	80(40.0)		
	Above secondary	158 (79.0)	86 (43.0)		
<b>Monthly family income (in taka)</b>	Up to 10,000	10 (5.0)	18 (9.0)	6.92	0.031
	10,001 to 15,000	48 (24.0)	72(38.0)		
	15,001 to 20,000	54 (27.0)	78(39.0)		
	Above 20,000	88 (44.0)	28 (14.0)		

The majority of the employed mothers (66.0%) were service holders and others were business women (18.0%) and day labour (16.0%). Majority of the employed mothers worked for 6-8 hours while 12.0% worked for >8 hours in a day. The majority of the employed mothers worked for 5-10years while 26.0% worked for <5 years.

Among them, 17.0% worked for >10 years. 44.0% (N= 88) children were taken care of by their maternal grandmother and 25.5% (N= 51) children were taken care of by their paternal grandmother. Others were taken care of by a housemaid (21.5%, n=43) and a neighbor (9.0%, N=18) (Table 2).

**Table 2. Information related to job of employed mothers**

Characteristics	Category	Frequency (N)	Percentage (%)
<b>Type of job</b>	Service holder	132	66.0
	Business women	36	18.0
	Day labour	32	16
<b>Duration of service (hours)</b>	<6	18	9.0
	6-8	158	79.0
	>8	24	12.0
<b>Duration of job (years)</b>	<5	52	26.0
	5-10	114	57.0
	>10	34	17.0
<b>Caregiver who takes care of children</b>	Maternal grandmother	88	44.0
	Paternal grandmother	51	25.5
	House maid	43	21.5
	Neighbor	18	9.0

**Table 3. Information related to children of employed and unemployed mothers**

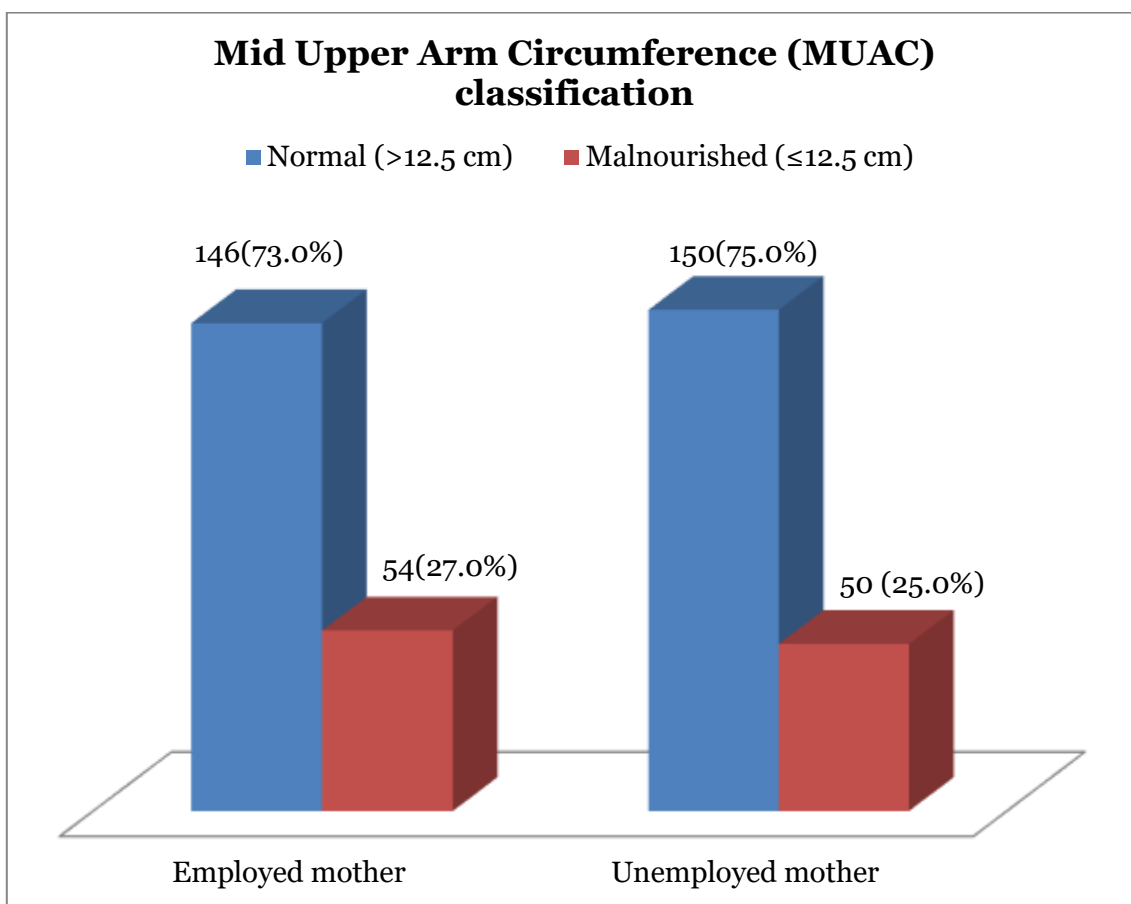
Characteristics	Category	Employed mother N (%)	Unemployed mother N (%)	OR	p
<b>Child's gender</b>	Male	112 (56.0)	90 (45.0)	2.21	0.137
	Female	88(44.0)	108(54.0)		
<b>Child's age (month)</b>	24-36	56 (28.0)	58 (29.0)	3.12	0.211
	37-48	90(45.0)	108(54.0)		
	49-60	54 (27.0)	34(17.0)		
<b>Exclusive breast-feeding status</b>	Practiced	182 (91.0)	128 (64.0)	19.22	<0.001
	Not Practiced	18 (9.0)	72(36.0)		
<b>Complementary feeding (month)</b>	Before 6	18 (9.0)	50 (25.0)	13.08	0.004
	At 6	175 (87.5)	108(54.0)		
	After 6	7 (3.5)	42 (21.0)		
<b>Frequency of feeding</b>	4 times	6 (3.0)	0 (0.0)	0.66	0.883
	5 times	32 (16.0)	40 (20.0)		
	6 times	76 (38.0)	72(36.0)		
	>6 times	42 (13.0)	48 (24.0)		
	On demand	44 (22.0)	40 (20.0)		
<b>Deworming status within 6 months</b>	Yes	110 (55.0)	10 (5.0)	64.46	<0.001
	No	90(45.0)	190(95.0)		
<b>Vitamin A status within 6 months</b>	Yes	136 (68.0)	112 (56.0)	2.49	0.114
	No	64 (32.0)	84(42.0)		

According to MUAC classification, in both groups, the majority of the children were well nourished. There was no significant statistical difference between mothers of the two groups regarding children's MUAC classification as  $p > 0.05$  (x<sup>2</sup>-test) (Figure 1).

The support of religious leaders is an important part of the aspect of the role of local culture in the process of accelerating

stunting reduction. The mathematical model obtained from this study shows that the level of knowledge or understanding of religious leaders about stunting and the support factor of cross-sectoral cooperation in each service area of religious leaders both have an effect of 97.3% on the incidence of stunting (Figure 1).





**Figure 1. Nutritional status of children of employed and unemployed mothers**

Normal weight children were significantly more among employed mothers, 156 (53.8%), while overweight children were significantly more among unemployed mothers, 38 (73.1%). Stunted children were significantly 78 (60.9%) among unemployed mothers, while tall children were significantly 82 (67.2%) among employed mothers. Wasted children were significantly more 36 (62.1%) among employed mothers than unemployed mothers. No child of an unemployed mother was obese. Weight for age (WAZ) - score, height for age (HAZ)-score and weight for height (WHZ)-score of their children showed the significant difference ( $p < 0.05$ ) (Table 4).

Significant statistical differences were found between a father's educational status and the WAZ score of children ( $p = 0.001$ ).

No significant statistical differences were found between age of mother ( $p = 0.189$ ), mother's educational status ( $p = 0.907$ ), monthly family income ( $p = 0.316$ ) and WAZ score of children (Table 5).

Significant statistical differences were found between a mother's educational status and the HAZ score of children ( $p = 0.003$ ). No significant statistical differences were found between age of mother ( $p = 0.470$ ), father's educational status ( $p = 0.083$ ), monthly family income ( $p = 0.984$ ) and HAZ score of children (Table 6).

No significant statistical differences were found between age of mother ( $p = 0.686$ ), mother's educational status ( $p = 0.290$ ), father's educational status ( $p = 0.138$ ), monthly family income ( $p = 0.572$ ) and the WHZ score of children (Table 7).

**Table 4. Comparison of mothers by weight for age (WAZ) - score, Height for age (HAZ)-score and weight for height (WHZ)-score of their children (N= 400)**

Characteristics	Category	Employed	Unemployed	Total	OR	p
		mother N (%)	mother N (%)			
WAZ-score	Normal (WAZ score -2 to +2)	156 (53.8)	134 (46.2)	290 (100.0)	12.82	0.002
	Under weight (WAZ score <-2)	30 (51.7)	28 (48.3)	58 (100.0)		
	Over weight (WAZ score >+2)	14 (26.9)	38 (73.1)	52 (100.0)		
HAZ-score	Normal (HAZ score -2 to +2)	68 (43.5)	82 (54.7)	150 (100.0)	21.89	p<0.001
	Stunted (HAZ score <-2)	50 (39.1)	78 (60.9)	128 (100.0)		
	Tall (HAZ score >2)	82 (67.2)	40 (32.8)	122 (100.0)		
WHZ-score	Normal (WHZ score -2 to +2)	150 (45.7)	178 (54.3)	328 (100.0)	19.77	<0.001
	Wasted (WHZ score <-2)	36 (62.1)	22 (37.9)	58 (100.0)		
	Obese (WHZ score > +2)	14 (100.0)	0 (0.0)	14 (100.0)		

**Table 5. Distribution of children by weight for age (WAZ)- score and socio-demographic status (N= 400)**

Socio-demographic status	WAZ score			OR	p
	Under weight F (%)	Normal F (%)	Over weight F (%)		
<b>Age of mother (years)</b>					
26-29	20 (14.3)	96 (68.6)	24 (17.1)	6.14 <sup>a</sup>	0.189
30-33	22 (12.6)	130 (74.7)	22 (12.6)		
Above 33	16 (18.6)	64 (74.4)	6 (7.0)		
<b>Mother's educational status</b>					
Illiterate	8 (19.0)	28 (66.7)	6 (14.3)	2.13 <sup>a</sup>	0.907
Up to primary	6 (16.7)	24 (66.7)	6 (16.7)		
Up to secondary	18 (13.6)	96 (27.7)	18 (30.6)		
Above secondary	26 (13.7)	142 (74.7)	22 (11.6)		
<b>Father's educational status</b>					
Illiterate	4 (33.3)	8 (66.7)	0 (0.0)	23.24 <sup>a</sup>	<b>0.001</b>
Up to primary	4 (18.2)	16 (72.7)	2 (9.1)		
Up to secondary	6 (4.9)	90 (73.8)	26 (21.3)		
Above secondary	44 (18.0)	176 (72.1)	24 (9.8)		
<b>Monthly family income</b>					
Up to 5000	4 (14.3)	22 (78.6)	2 (7.1)	4.74 <sup>a</sup>	0.316
5001-10000	12 (9.7)	96 (77.4)	16 (12.9)		
>10000	42 (16.9)	172 (69.4)	34 (13.7)		

**Table 6. Distribution of children by Height for age (HAZ)- score and socio-demographic status (N= 400)**

Socio-demographic status	HAZ score			OR	p
	Stunted F (%)	Normal F (%)	Tall F (%)		
<b>Age of mother (years)</b>					
26-29	50(35.7)	44(31.4)	46(32.9)	3.56 <sup>a</sup>	0.470
30-33	52(29.9)	70(40.2)	52(29.9)		
Above 33	26(30.2)	36(41.9)	24(27.9)		
<b>Mother's educational status</b>					
Illiterate	18(42.9)	16(38.1)	8(19.0)	19.08 <sup>a</sup>	<b>0.003</b>
Up to primary	14(38.9)	14(14.9)	8(22.2)		
Up to secondary	52(39.4)	50(37.9)	30(22.7)		
Above secondary	44(23.2)	70(36.0)	76(40.0)		
<b>Father's educational status</b>					
Illiterate	4(33.3)	4(33.3)	4(33.3)	11.19 <sup>a</sup>	0.083
Up to primary	8(36.4)	8(36.4)	6(27.3)		
Up to secondary	52(42.6)	42(34.4)	20(23.0)		
Above secondary	64(26.2)	96(39.3)	84(34.4)		
<b>Monthly family income</b>					
Up to 5000	8(28.6)	12(42.9)	8(28.6)	0.38 <sup>a</sup>	0.984
5001-10000	40(32.3)	46(37.1)	38(30.6)		
>10000	80(32.3)	92(97.1)	76(30.6)		

**Table 7. Distribution of children by weight for height (WHZ)- score and socio-demographic status (N= 400)**

Socio-demographic status	WHZ score			OR	p
	Wasted F (%)	Normal F (%)	Obese F (%)		
<b>Age of mother (years)</b>					
26-29	16(11.4)	120(85.7)	4(2.9)	2.27 <sup>a</sup>	0.686
30-33	28(16.1)	140(80.5)	6(3.4)		
Above 33	14(16.3)	68(79.1)	4(4.7)		
<b>Mother's educational status</b>					
Illiterate	8(19.0)	34(81.0)	0(0.0)	7.35 <sup>a</sup>	0.290
Up to primary	6(16.7)	30(83.3)	0(0.0)		
Up to secondary	14(10.6)	114(86.4)	4(3.0)		
Above secondary	30(15.8)	150(78.9)	10(5.3)		
<b>Father's educational status</b>					
Illiterate	4(33.3)	8(66.7)	0(0.0)	9.71 <sup>a</sup>	0.138
Up to primary	4(18.2)	18(81.8)	0(0.0)		
Up to secondary	10(8.2)	108(88.5)	4(3.3)		
Above secondary	40(16.4)	194(79.5)	10(4.1)		
<b>Monthly family income</b>					
Up to 5000	4(14.3)	24(85.7)	0(0.0)	2.92 <sup>a</sup>	0.572
5001-10000	14(11.3)	106(85.5)	4(3.2)		
>10000	40(16.1)	198(79.8)	10(4.0)		



## DISCUSSION

The study showed that the mean ages of the employed and unemployed mothers were Mean= 30.79; SD= 2.99 and Mean= 30.58; SD= 2.89 years respectively. The study of Eshete et al. (2017) found the mean ages of the employed and unemployed mothers were Mean= 27.0; SD= 5.23 and Mean= 26.2; SD= 5.34 years respectively (Eshete et al., 2017).

The present study found that no employed mothers had educational status below primary. On the other hand, 21.0% of unemployed mothers were illiterate and 18.0% had educational status up to primary. Again, no husbands of employed mothers had educational status below primary. On the other hand, 6.0% of husbands of unemployed mothers were illiterate and 11.0% had educational status up to primary. According to BBS, 29.96% of males were illiterate and 34.42% of females were illiterate (Talukder, 2017). The dissimilarity of result might be due to the fact that the Government of Bangladesh is working very hard to increase the literacy rate of Bangladesh. This might be the reason for the increasing literacy rate of mothers and their husbands.

The monthly family incomes of employed mothers were significantly higher than that of the unemployed mothers ( $p=0.031$ ). This was obvious as the employee made a direct contribution to the financial situation of the household. The majority of the employed mothers (66.0%) were service holders and others were business women (18.0%) and day labours (6.0%). Majority of the employed mothers worked for 6-8 hours while 12.0% worked for >8 hours in a day. The majority of the employed mothers worked for 5-10 years while 26.0% worked for <5 years. Among them, 17.0% worked for >10 years. Most of the mothers (84.0%) had a good working environment whereas 12.0% had an average working environment. Amo-

ng the 200 employed mothers, 45.0% ( $n=45$ ) children were taken care of by the maternal grandmother and 30.0% ( $n=30$ ) children were taken care of by the paternal grandmother. Others (25.0%,  $n=25$ ) were taken care of by housemaids. As 65.0% of employed mothers lived in nuclear families, they had to keep their children in their mother's house or to housemaid.

Most of the employed mothers (91.0%) practiced exclusive breast-feeding for 6 months whereas 64.0% of unemployed mothers practiced exclusive breast-feeding for 6 months. There was a highly statistical difference between mothers of two groups regarding exclusive breast-feeding status as  $p < 0.05$ . Nationwide, the exclusive breast-feeding status of Bangladesh is 63.5% (Faruque et al., 2008). Exclusive breast feeding status is significantly associated with maternal education and employment status (Chanda et al., 2020).

The present study revealed that among employed mothers, 47.0% had started complementary feeding before 6 months of age whereas 25.0% of unemployed had started complementary feeding before 6 months of age. As employed mothers had to go back to their job after the maternity leave, they started complementary feeding early. There was highly significant statistical difference between mothers of two groups regarding starting complementary feeding as  $p=0.004$ . The study of Eshete et al. (2016) also reported that employed mothers started complementary feeding earlier than unemployed mothers (Eshete et al., 2017).

According to the American Academy of Pediatrics Handbook, a pre-school child requires three main meals and two in between snacks in a day. The present study did not find any significant statistical difference between mothers of two groups regarding starting complementary feeding as  $p < 0.05$ .

Helminthes infection is thought to

contribute to child malnutrition through subtle reductions in digestion and absorption, chronic inflammation, and loss of nutrients. Deworming has led to improved growth, increased physical activity, and improved appetite in children, sometimes as soon as 3–9 weeks after treatment (Rohner et al., 2011).

Preventive chemotherapy (deworming), using annual or biannual single-dose albendazole (400 mg) or mebendazole (500 mg) is recommended as a public health intervention for all preschool children 1–4 years of age (Majid et al., 2019). Majority of the employed mothers (55.0%) gave their children deworming drugs within 6 months whereas most of the unemployed mothers (95.0%) did not give deworming drugs to their children within 6 months. This might be due to the fact that employed mothers knew the detrimental effects of helminthiasis on child's health. But, unemployed mothers lack this knowledge. Moreover, they thought they would take good care of their children and would protect them from helminthiasis. There was highly significant statistical difference among mothers of two groups regarding children's deworming status as  $p < 0.05$ .

Vitamin-A is crucial to preventing childhood blindness and reducing child mortality. The National Vitamin-A Plus campaign is held across Bangladesh biannually. The majority of the mothers of the present study gave their children vitamin A capsules within 6 months. There was no statistical difference between mothers of the two groups regarding children's vitamin A status within 6 months, as  $p > 0.05$ .

According to MUAC classification, in both groups, the majority of the children were well nourished. There was no significant statistical difference among mothers of two groups regarding children's MUAC classification as  $p > 0.05$  (obtained from Chi square test). This result was consistent with

the study of Dariya et al. (2016) where they also found no significant statistics (Dariya et al., 2016).

Normal weight children were significantly more among employed mothers while overweight children were significantly more among unemployed mothers. Here is  $p = 0.002$  (obtained by Chi square test). Among the employed mothers, 15.0% of children were underweight while 14.0% children of unemployed mothers were underweight. Another study also found that 10.8% of children of employed mothers were underweight while 13.4% of children of unemployed mothers were underweight (Eshete et al., 2017).

The present study revealed that 25.0% of children of employed mothers and 39.0% of children of unemployed mothers were stunted. A study investigated the extent of malnutrition and factors associated with malnutrition among children aged 0-59 months in Bangladesh using Bangladesh Demographic Health Survey data, 2014, where it was reported that 36.2% of children were stunted (Das and Gulshan, 2017). Stunted children were significantly more among unemployed mothers while tall children were significantly more among employed mothers. Here is  $p < 0.001$  (obtained by the Chi square test). This might be due to the fact that maternal education status was associated with HAZ score of children ( $p = 0.003$ ).

The present study revealed that 18.0% of children of employed mothers and 11.0% of children of unemployed mothers were wasted. The study of Das et al. (2017) reported that 15.0% of Bangladeshi children were wasted. Wasted children were significantly more among employed mothers than unemployed mothers (Das and Gulshan, 2017). No child of an unemployed mother was obese. Here is  $p < 0.001$ . It indicated that unemployed mothers had children with

better nutritional status compared to employed mothers. Variations of results have been found across the world regarding this issue. Some researchers showed that employed mothers' children had better nutritional status (Dariya et al., 2016) whereas others showed that unemployed mothers' children had better nutritional status. But a study conducted by Das et al. (2017) in Bangladesh, revealed that the proportion of malnourished children is higher among children whose mothers are housewives compared to the children of mothers in service or business (Das and Gulshan, 2017). This may be rationalized, as in Bangladesh; people who are occupied in service or business are usually wealthier and are often more educated as well, which consequently allows them to know about nutritional foods as well as the importance of such food for children. Studies conducted by Dariya et al. (2016) in India stated that feeding frequencies and patterns were hampered when the mother is employed (Dariya et al., 2016).

The inevitable changes like women entering the workplace have an effect on child care and development. The study revealed that there was no difference in MUAC classification between employed and unemployed mothers. But according to Z score, underweight and wasting was more prevalent among employed mothers whereas stunting was more prevalent among unemployed mothers. The WHZ score of children was associated with age, sex, exclusive breast-feeding status, complementary feeding status, frequency of feeding and deworming status of the children. Though governmental and NGO efforts are already in place to subsidize the working mother's attention to her children in most places, a better utilization of these facilities has to be encouraged, so that promotive and preventive child health care will be available for working mothers.

#### **AUTHOR CONTRIBUTION**

Authors may use the following wordings for this section: "Author 1' designed the study, Author 4' performed the statistical analysis, Author 3' wrote the protocol, Author 2' wrote the first draft of the manuscript. 'Author 5' and 'Author 6' managed the analyses of the study. 'Author 7, 8' managed the literature searches. All authors read and approved the final manuscript."

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The study used the researcher's personal funds.

#### **CONFLICT OF INTERESTS**

Authors have declared that no competing interest exists.

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