Effects of nutrition education on nutritional knowledge of the respondent mothers and STP of their hospitalised children

Azam AZMM, Kurshed AAM, Hossain MA, Khan S
Hossain AMMM, Bhuyan MAH

Abstract

Malnutrition is a very common problem among under 5 children in Bangladesh. Though poverty plays the major role but lack of knowledge about proper utilization of available foods, superstitious beliefs and some social customs also contribute a lot to develop malnutrition among children. Mothers of 114 hospitalized under 5 malnourished children were taken for study purpose that was equally divided as case and control. Baseline knowledge of the mothers was tested by a standard questionnaire. After giving nutrition education, their knowledge was tested immediately and again after six months. About common foods, 37.5% of case group responded correctly initially but after six months it was 73%, whereas 32% of control group initially responded correctly and after six months it was 36%. When considering knowledge of balanced diet, 44% of case group responded correctly initially but after six months it is increased to 71%, whereas in control group initially it was 52% and after six months it became 54%. Regarding false belief and food misconception, correct answers were given initially by 49% of case group and it went up to 66% after six months. But in the control group the corresponding rise was only 4%. Regarding cooking practices and wastage of food, initially 55% of the case group had answered correctly and after six months it rose to 78%. But 55% of the control group initially responded correctly and after six months it was 59%. Regarding Knowledge about iodized salt, 25% of the case group responded correctly initially and after six months it was 46%, whereas in control group it was initially 28% which increased to 32% after six months. Regarding knowledge about iodized salt, 25% of the case group responded correctly initially and after six months it was 46%, whereas in control group it was initially 28% which increased to 32% after six months. Regarding deficiency diseases and their preventions, initially 49% of the case group responded correctly and after six months it rose to 88%, whereas the result of control group initially was about 48% and after six months it was 51%. All of these findings indicated the impact of nutrition education which lead to improvements of knowledge among mothers of hospitalized under 5 children.

Introduction

With low resource base and almost perennial recurrence of natural calamities, Bangladesh is one of the most poor and densely populated countries of the world. Its population has now far exceeded the carrying capacity. Nutritional deficiencies constitute the major causes of morbidity and mortality among the children of Bangladesh. Bangladesh is a country of 123.1 million people of which about 40% is under 18 & about 14.5% is under-5. Here Infant mortality rate is 55/1000 and under-5 mortality rate is 77/1000 which are still far above the level of the developed countries. Current data taken from Bangladesh Bureau of statistics suggests that about 87.40%
children is suffering from some sort of malnutrition and about 37.6% is suffering from moderate to severe malnutrition. About 21.7% preschool children are suffering from sub clinical vitamin A deficiency and about 0.94% is suffering from xerthalmia. About 17.2% children from aged 5 to 11 years are suffering from thyroid hormone deficiency. Thyroid deficiency is one preventable cause of mental retardation and disability.

About 69.5% children aged from 0 to 4 yrs of Bangladesh is suffering from anaemia. A child, who suffers from anaemia, may also suffer from many infectious diseases due to lowered body resistance. Anaemia is also a factor for contributing poor school performance of the children. "The dominant effect is loss associated with cognitive deficits in children."

Each year about 13 million infant and children die in the developing countries. The majority of these deaths are due to infectious and parasite diseases and many if not most of the children die malnourished. A malnourished child is great sufferer for himself and his parent. He or she will not grow properly both physically and mentally. When he or she will grow adult with these physical and mental handicaps, no way he would be able to perform optimum work for himself, his family and nation. So it has a long term impact on health and economic issue of a nation.

Etiology of malnutrition is complex. Primarily due to deficiencies and secondary due to medical reasons. Dietary deficiency may be due to poor economic condition i.e., parents cannot bye adequate food for their family due to poverty. Other reasons for dietary deficiencies are social and cultural factors due to lack of proper knowledge of mother about balanced diet, advantage of breast feeding and extra need for developing children the problem of malnutrition has further deteriorated in our country. Many deep rooted false beliefs customs, practices and ignorance are contributing significantly to malnutrition among the children of our country.

Methods and materials

Study Location: was Dhaka Shishu (children) Hospital and study population was mothers of hospitalized children (< 5 years).

Study design: The investigation was a case-control intervention study.

Study parameters: The parameters taken to assess the nutritional status of the studied children were-

1. Socio-economic information
2. Conduct of nutrition education sessions
3. Concentration of serum total protein

Nutrition education sessions: Mothers were exposed to nutrition education on following topics-

a) Common easily available nutritious food
b) Balanced diet
c) Appropriate cooking process and avoidance of wastage of food
d) Superstitious beliefs and misconceptions about food
e) Necessities of iodized salts
f) Breast feeding, weaning and extra food for growing children to promote their proper growth and

g) Malnutrition related diseases, infectious diseases and adoption of preventive measures.

Mothers were taught sometimes in groups and sometimes at individual level within a period of one week. Materials used were posters, booklets pictures and models. Immediately after nutrition education session and again after six months, the nutritional knowledge of the respondents was evaluated. The socio-economic, knowledge, attitude and practice (KAP) regarding nutritional aspects were compared among the two groups (case-control).

Results

<table>
<thead>
<tr>
<th>Age(year)</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>20-24</td>
<td>36</td>
<td>31.6</td>
</tr>
<tr>
<td>25-29</td>
<td>40</td>
<td>35.1</td>
</tr>
<tr>
<td>30 &amp; above</td>
<td>33</td>
<td>28.9</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table-1 : Distribution of mothers by age
Original Article

Table-1 showed that around 65% of the total mothers were within the age range of 20-30 years of age and 30% of the total mothers are within the age range of 30 years and above. This table also showed that the average age of the mothers was about 27 years.

Table-2 : Distribution of mothers by occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife</td>
<td>90</td>
<td>78.9</td>
</tr>
<tr>
<td>Garments worker</td>
<td>10</td>
<td>8.8</td>
</tr>
<tr>
<td>Employee N.G.O.G.O</td>
<td>14</td>
<td>12.3</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table-2 shows that among the mothers, 80% of them were homemakers, 10% of them were garment workers and the rest of them were NGO workers.

Table-3 shows that 42% of the total households had income within the range 4000-5999 taka per month whereas 26% of them had income range 6000-7999 taka. From the table it was also seen that 19% of the total households have income of TK. 8000 & above and only 13% of them had income TK<4000.

Table-4 : Distribution of respondents by knowledge

<table>
<thead>
<tr>
<th>Topics</th>
<th>Case</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct knowledge about common foods</td>
<td>Baseline</td>
<td>After six months</td>
</tr>
<tr>
<td>Correctly regarding about balanced diet</td>
<td>37.5%</td>
<td>82%</td>
</tr>
<tr>
<td>Answered correctly regarding knowledge about food misconceptions</td>
<td>49%</td>
<td>78%</td>
</tr>
<tr>
<td>Answered correctly regarding knowledge about cooking process &amp; wastage of food</td>
<td>55%</td>
<td>96%</td>
</tr>
<tr>
<td>Correct knowledge of testing iodine in salt</td>
<td>25%</td>
<td>67%</td>
</tr>
<tr>
<td>Answered correctly regarding knowledge about deficiency diseases, infections diseases &amp; their prevention</td>
<td>49%</td>
<td>90%</td>
</tr>
</tbody>
</table>

Figure 1, 2 show that about 69% of the total mothers lived in rural areas and the rest 31% lived in urban areas. From the study it was also found that around 25% mothers of total respondents were literate and the rest 75% were illiterate.

Table-3 : Distribution of mothers by monthly income of households

<table>
<thead>
<tr>
<th>Income(Taka monthly)</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;4000</td>
<td>15</td>
<td>13.2</td>
</tr>
<tr>
<td>4000-5999</td>
<td>48</td>
<td>42.1</td>
</tr>
<tr>
<td>6000-7999</td>
<td>30</td>
<td>26.3</td>
</tr>
<tr>
<td>8000 &amp; above</td>
<td>21</td>
<td>18.4</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table-4 shows that nutrition education increases the knowledge of case group mothers about common foods, balanced diet, food misconceptions, cooking process & wastage of food, testing iodine in salt, deficiency diseases, infectious diseases & their preventions.
Table 5 shows that among case group children (n=45) 6.6% of the children were STP ≤ 62 before nutrition education was given and after 6 months of nutrition education was given it decreased to 2.2%. On the other hand, among control group children (n=43), initially 13.9% of the children were STP ≤ 62 and after 6 months it decreased to 9%.

**Discussion**

Table 1 showed that around 65% of the total mothers were within the age range of 20-30 years of age and 30% of the total mothers are within the age range of 30 years and above. This table also showed that the average age of the mothers was about 27 years. Among the mothers, 80% of them were homemakers, 10% of them were garment workers and the rest of them were NGO workers (Table 2).

About 69% of the total mothers lived in rural areas and the rest 31% lived in urban areas. From the study it was also found that around 25% mothers of total respondents were literate and the rest 75% were illiterate (Figure 1,2).

Table 3 showed that 42% of the total households had income within the range 4000-5999 taka per month whereas 26% of them had income range 6000-7999 taka. From the table it was also seen that 19% of the total households have income of TK. 8000 & above and only 13% of them had income TK<4000.

Among case groups 38% mothers had correct knowledge about common foods before nutrition education whereas 82% mothers immediately after education & 73% mothers after 6 months of education give correct answers about common foods. On the other hand about 32% mothers of control group (not exposed to nutrition education) had correct knowledge about common foods which was increased to 36% after 6 months which indicated that as no nutrition education was given to control group mothers, there was no marked improvement in knowledge about common foods. Thus it could be said that nutrition education had positive effect to increase the knowledge of case group mothers about common foods (Table 4).

Before nutrition education only 44% of the respondents of case group had correct knowledge about balanced diet while immediately after education it was moved to 85% and after 6 months of education it was 71% whereas about 52% of the respondents of control group (not exposed to nutrition education) had correct knowledge about balanced diet which was increased to 54% after 6 months. Therefore it can be inferred that nutrition education had positive role to increase the knowledge about balanced diet (Table 4).

The study showed that only 49% of the respondents of case group answered correctly regarding KAP about food misconceptions before nutrition education while 78% of the respondents immediately after education and 66% of the respondents after 6 months of education answered correctly regarding KAP about food misconceptions but only 52% of the respondents of control groups initially and 56% of the respondents after 6 months
answered correctly regarding KAP about food misconceptions. It was found that only 55% of the respondents of case group answered correctly regarding KAP about cooking process & wastage of food before nutrition education while 96% of the respondents immediately after education and 78% of the respondents after 6 months of education answered correctly regarding KAP about cooking process & wastage of food, on the other hand 55% of the respondents of control groups initially and 59% of the respondents after 6 months answered correctly regarding KAP about cooking process & wastage of food (Table-4).

Only 25% of the respondents of case group had correct knowledge of testing iodine in salt while 67% of the respondents immediate after education and 46 % of the respondents after 6 months of education had correct knowledge of testing iodine in salt but in case of control group only 28% of the respondents initially and 32% of the respondents after 6 months had correct knowledge of testing iodine in salt (Table-4).

The study stated that only 49% of the respondents of case groups answered correctly regarding KAP about deficiency diseases, infectious diseases & their prevention before nutrition education while 90% of the respondents immediately after education and 88% of the respondents after 6 months of education answered correctly regarding KAP about deficiency diseases, infectious diseases & their prevention whereas only 48% of the respondents of control groups initially and 51% of the respondents after 6 months answered correctly regarding KAP about deficiency diseases, infectious diseases & their prevention (Table-4).

Table-5 shows that among case group children (n=45) 6.6% of the children were STP≤62 before nutrition education was given and after 6 months of nutrition education was given it decreased to 2.2%. On the other hand, among control group children (n=43), initially 13.9% of the children were STP≤62 and after 6 months it decreased to 9%.

From the above discussion we find that nutrition education helped to improve the knowledge of case group mothers than that of the control group counterparts.

Conclusion
Nutrition education session helps a lot to improve the overall nutritional status of the children. It helps the mothers of the children to utilize the available food properly. Education group mothers showed significantly higher nutrition knowledge and better infant feeding practices than that of control group counterparts. From biochemical information it is seen that nutrition education reduces the rate of anaemia in the children of case groups. It also increases the knowledge of the mothers who exposed nutrition education session about type of food responsible for body growth and development. Nutrition education session also increases the knowledge of testing Iodine in salt of case group.

Acknowledgements
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