Assessment Of Knowledge On Protein Energy Malnutrition Among Mothers Of Under Five Children Attending Outpatient Department Health & Wellness Centre, Koravallimedu, Puducherry


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Abstract:
Based on the literature reviewed and the guidance from various subject experts the investigator developed the conceptual frame work, methodology for the study and a data analysis plan in the most effective and efficient way. The conceptual framework adopted for this study was based on the Rosenstock’s and Becker’s health belief model. The research approach adopted for this study was quantitative research approach. The sample consist of 100 mothers under five children from HWC Koravallimedu Simple random sampling technique was used for the selection of sample. The instrument used for the data collection was self-structured interview schedule. The investigator reviewed the collected literature and consulted with subject experts to develop the instrument. The collected data was analyzed and compared with the various socio-demographic variables. To assess the knowledge on protein energy malnutrition among mothers of under-five children. To find the association between the knowledge on protein energy malnutrition with selected demographic variables of mothers of under-five children. To impart knowledge on protein energy malnutrition and its prevention, if necessary, after analysis.
Keywords: Protein Energy Malnutrition, Children

INTRODUCTION

The birth of a baby is one of the most inspiring and emotional events that can occur in one’s lifetime. After nine months of anticipation and preparation, the child arrives amid a flurry of excitement. The new human being affects the lives of the parents and also the other family members. If the child is not robust parents find it difficult to cope with these changes and feel varying degree of turmoil and anxiety. Care of children refers knowledge related to physical, physiological, safety and security, immunization, love and belonging needs. Malnutrition is like an iceberg, most children in the developing countries live under the burden of malnutrition. Malnutrition can also be defined as inadequate nutrition caused by the lack of a balanced diet or by disorders of the digestive system in which the nutrients from food cannot be absorbed properly or malnutrition is the condition that develops when the body does not get the right amount of the vitamins minerals, and other nutrients it needs to maintain healthy tissues and organ function.

Malnutrition is a state of nutrition in which a deficiency or excess (or imbalance) of energy, protein and other nutrients causes measurable adverse effects on tissue/body form (body shape, size and composition) and function and clinical outcome. Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients. The term malnutrition covers 2 broad groups of conditions. One is ‘under nutrition’-which includes stunting (low height for age), wasting (low weight for height), underweight (low weight for age) and micronutrient deficiencies or insufficiencies (a lack of important vitamins and minerals).

Children are an embodiment of our dreams and hopes for the future. They are wet clay in potters’ hands; handled with care they become something beautiful else they break and become discarded. They are the most vulnerable group in the society. A Child is precious to his parents, to his family, community, and nation and to the world at large. In fact, child is a citizen of the world and thus it becomes the responsibility of the wide population of the whole universe to look after the interests of the children all over. The young children need love for growth but also adequate nutrition and health facilities, so that he can grow up to complete at his optimum level. Recent data from the World Health Organization, had reported that about 60% of all deaths, occurring among children aged less than five years in developing countries, could be attributed to malnutrition. It has been estimated that nearly 50.6million under five children were malnourished and almost 90% of these children were from developing countries.

The most recent estimate in October 2010 by Food and Agriculture Organization says that 925 billion people are undernourished. And the estimated proportions of deaths in which malnutrition is the underlying cause are roughly similar for diarrhea 61% malaria 57% pneumonia 56% and measles 45%. In India, Malnutrition contributes to more than half of all childhood deaths, although it is rarely listed as the direct cause. more than 6,000 children below the age five years die every day in India largely due to infectious diseases worsened by malnutrition.

NEED FOR STUDY:
“The only thing more expensive than education is ignorance” PARK (2007)
Worldwide there are about 60 million children with moderate acute and 13 million with severe acute malnutrition. About 15% of South Asian children have moderate acute malnutrition and 2% of children in developing countries have severe acute malnutrition. UNICEF’s latest report says that world’s children’s reports India has the worst indicators of child malnutrition in South Asia. It claims that 50 million of Indian children are affected by malnutrition and 48% of under-fives in India are stunted, compared to 43% in Bangladesh and 37% in Pakistan. In 2005 the mean birth weight of children in India is 2.7kg as compared to 2.9kg in Africa and 3.5kg in Western Europe and North America. In India as many as 6.8% of under five children are severely acutely malnourished and as many as 20% of under five children are moderately malnourished.

High prevalence of malnutrition among young children is also due to lack of awareness and knowledge regarding their food requirements and absence of a responsible adult care giver. With increasing urban migration in the years ahead the problem of malnutrition in urban slum will also acquire increasing dimensions unless special efforts are initiated to migrate the health and nutrition problem of the urban poor. Most of the experts feel, that the cases of malnutrition are best treated by home based nutritional education as this home-based intervention prevents relapse on the bases of actual assessment of child’s living conditions.

STATEMENT OF THE PROBLEM
Assessment of knowledge on Protein energy malnutrition among mothers of under five children attending outpatient department, Health and Wellness Centre Koravallimedu, Puducherry

OBJECTIVES
- To assess the knowledge on protein energy malnutrition among mothers of under five children
- To find the association between the knowledge on protein energy malnutrition with selected demographic variables of mothers of under-five children.
- To impart knowledge on protein energy malnutrition and its prevention, if necessary, after analysis

HYPOTHESIS:
- H1: There will be significant association between the knowledge of Protein energy malnutrition with selected demographic variables.

METHODOLOGY
Research methodology involves systemic procedure in which the researcher starts from initial identification of problems to its final conclusion. The role of methodology consists of procedures and techniques for conducting a study. (Polit and Hungler, 2004). This chapter deals with the methodology followed by the investigator to assess the knowledge of mothers regarding Protein energy malnutrition of under five children. This chapter includes the research approach, research design, study setting, population sample and sampling technique, development and description of the tool, content validity, reliability, pilot study, data collection procedure and plan for data analysis.
RESEARCH APPROACH

The research approach adopted for this study was quantitative research approach.

RESEARCH DESIGN

Research design selected for this study was non experimental descriptive research design; it was used to assess the knowledge of mothers regarding Protein energy malnutrition of under five children.

STUDY SETTING

This study was conducted in HWC Koravallimedu

TARGET POPULATION

The population for the present study is all the mothers of under five children who are attending out patient department HWC Koravallimedu

SAMPLE & SAMPLE SIZE

The sample of the present study is mothers of under five children. 100 mothers of under five children were selected for the present study.

SAMPLING TECHNIQUE

From the outpatient department register the list the mothers of under-five children were selected in HWC Koravallimedu. From that, the list of the women aged between 18-45 years were identified. Out of 30 mothers of under five children 10 mothers were selected. The total study participants, hundred mothers were selected by using simple random sampling method (lottery method) in 10 days.

SAMPLE SELECTION CRITERIA

1. Inclusion Criteria
   - Mothers of under-five children who were willing to participate.
   - Mothers of under-five children who knows Tamil.
   - Mothers of under-five children who were between the age of 18 to 45 years.

2. Exclusive Criteria
   - Mothers of under-five children who were physically and mentally ill.
   - Mothers of under five children who had children with severe physical and mental illness.

SELECTION AND DEVELOPMENT OF THE TOOL

The investigator was prepared self structured interview schedule based on the objectives of this study. The tool was translated into Tamil and considered to be most appropriate instrument to elicit the responses from Mothers of under five children.

DESCRIPTION OF THE TOOL
The tool was used to collect the data was self structured interview schedule to assess the knowledge of Mothers of under five children regarding protein energy malnutrition. It was organized into two parts.

**Part - I**

It consists of 7 items related to the socio demographic data of Mothers of under five children. It includes age, religion, educational qualification, occupation, and monthly income, type of family.

**Part - II**

It consists of 25 items on knowledge regarding Protein energy malnutrition.

**Scoring & interpretation**

The score awarded for each right item is ‘1’ and for each wrong response ‘0’. Total score was 25.

Interpretation of knowledge on protein energy malnutrition among mothers of under-five children were done based on the percentage of score as follows:

- Below 50% - Inadequate knowledge.
- 51% - 75% - Moderately adequate knowledge.
- 76% - 100% - Adequate knowledge.

**DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

This chapter deals with analysis and interpretation of the data elicited from a sample of hundred mothers of under five children regarding knowledge on protein energy malnutrition. The data which are necessary to provide to the adequacy of the study are collected through the self-structured interview schedule and analyzed using relevant descriptive and inferential statistics. The substantive summaries of the findings are arranged in connection with specific objectives of the study.

**PRESENTATION OF DATA**

The collected data are analyzed and presented in three sections.

**Section – I** Description of demographic variables using percentage analysis.

**Section-II** Knowledge of mothers of under five children regarding protein energy malnutrition were assessed through the application of mean, standard deviation and mean score percentage.

**Section – III** Inferential statistics, and chi square test was used to determine the association of mother’s knowledge on protein energy malnutrition with selected socio demographic variables.

**DESCRIPTION OF SOCIO DEMOGRAPHIC CHARACTERISTICS OF MOTHERS OF UNDER FIVE CHILDREN**

<table>
<thead>
<tr>
<th>Distribution of mothers according to their Age</th>
<th>N=100</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.No. Variables</td>
<td>Category</td>
</tr>
<tr>
<td>----------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Age (years)</td>
<td>≤25</td>
</tr>
<tr>
<td></td>
<td>26 – 30</td>
</tr>
</tbody>
</table>

www.turkjphysiotherrehabil.org
Table shows that the distribution of the mothers of under five children under the study according to age. The maximum number of subjects 36% were in less than 25 years, 20% were in 31-35 years 19% were in 26-30 years, 17% were in 36-40 years and 8% in above 40 years.

### Distribution of mothers according to their Religion

<table>
<thead>
<tr>
<th>Religion</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindu</td>
<td>78</td>
</tr>
<tr>
<td>Muslim</td>
<td>10</td>
</tr>
<tr>
<td>Christian</td>
<td>12</td>
</tr>
</tbody>
</table>

Table shows that the distribution of the mothers of under five children under the study according to religion. The maximum number of subjects 78% were Hindu, 10% were Muslim and 12% was Christian.

### Table Distribution of mothers according to their Education

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variables</th>
<th>Category</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number and percentage</td>
</tr>
<tr>
<td>3.</td>
<td>Education</td>
<td>Illiterate</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Primary education</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High/Higher secondary education</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Degree</td>
<td>31</td>
</tr>
</tbody>
</table>

The data presented in table shows that 42% were High/Higher secondary, 31% were having Degree, 23% had Primary education and only 4% were Illiterate.

### Table Distribution of mothers by their occupation=100

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Category</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number and percentage</td>
</tr>
<tr>
<td>4.</td>
<td>Occupation</td>
<td>House wife</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooley</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self employee</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Private employee</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Govt employee</td>
<td>1</td>
</tr>
</tbody>
</table>
The data presented in table shows that 56% were housewife and maximum number of subjects 24% were cooly, 14% were self-employed, 5% were private employee and no one was government employees.

Table Distribution of mothers by their monthly income N=100

<table>
<thead>
<tr>
<th>Monthly income</th>
<th>Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ Rs.1000</td>
<td>16</td>
</tr>
<tr>
<td>Rs.1001-Rs.2000</td>
<td>18</td>
</tr>
<tr>
<td>Rs.2001-Rs.3000</td>
<td>18</td>
</tr>
<tr>
<td>&gt; Rs.3000</td>
<td>48</td>
</tr>
</tbody>
</table>

The data presented in table shows among 100 mothers 48% were getting the monthly income of less than Rs.3000/-, equal proportion of 18% were having the monthly income of Rs.1001/-Rs.2000/- and Rs.2001-Rs.3000 and 16% of mothers were having family monthly income is above Rs.1000/-.

Table Distribution of mothers according to their type of family N=100

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Variables</th>
<th>Category</th>
<th>Respondents Number and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Type of family</td>
<td>Nuclear family</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Joint family</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Extended family</td>
<td>10</td>
</tr>
</tbody>
</table>

Table reveals that, the maximum number of subjects 57% were belongs to Joint family, 33% were nuclear family and 10% to extended family system.

ASSESSING THE KNOWLEDGE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING PROTEIN ENERGY MALNUTRITION

Table Level of knowledge of mothers regarding Protein energy malnutrition N=100

<table>
<thead>
<tr>
<th>S.No</th>
<th>Knowledge level on common health problems</th>
<th>Respondents Number and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adequate (&gt;75%)</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>Moderate (50-75%)</td>
<td>11</td>
</tr>
<tr>
<td>3.</td>
<td>Inadequate (&lt;50%)</td>
<td>89</td>
</tr>
</tbody>
</table>
The data on table shows that the distribution of mothers according to their level of knowledge regarding protein energy malnutrition of children. Only 0% of mothers were having adequate knowledge, most of the mothers 11% were having moderate knowledge and 89% were having inadequate knowledge regarding protein energy malnutrition of children.

**Table Distribution of mothers according to their knowledge regarding protein energy malnutrition.**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Areas</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Meaning and causes</td>
<td>100</td>
<td>0.00</td>
<td>4.00</td>
<td>1.8400</td>
<td>0.96106</td>
</tr>
<tr>
<td>2</td>
<td>Normal level of protein intake</td>
<td>100</td>
<td>0.00</td>
<td>2.00</td>
<td>0.5600</td>
<td>0.64071</td>
</tr>
<tr>
<td>3</td>
<td>Signs and symptoms</td>
<td>100</td>
<td>0.00</td>
<td>5.00</td>
<td>2.0900</td>
<td>1.06453</td>
</tr>
<tr>
<td>4</td>
<td>Treatment, Prognosis, Prevention &amp; complication</td>
<td>100</td>
<td>0.00</td>
<td>9.00</td>
<td>4.7500</td>
<td>1.83333</td>
</tr>
<tr>
<td></td>
<td>Valid N (list wise)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The table represents the knowledge of mothers regarding protein energy malnutrition. The knowledge regarding meaning and causes of protein energy malnutrition mean was 1.8400 and standard deviation was 0.96106. The knowledge regarding normal level of protein intake mean was 0.5600 and standard deviation was 0.64071. The knowledge regarding signs and symptoms mean was 2.0900, and standard deviation was 0.1066453. The knowledge regarding treatment, prognosis, prevention and complications mean were 4.7500 and standard deviation were 1.83333. Overall, the knowledge of mothers regarding protein energy malnutrition was 9.24 (mean) and 2.625 (Std. Deviation)

**RELATIONSHIP BETWEEN KNOWLEDGE OF MOTHERS OF 0-5 YEARS CHILDREN REGARDING PROTEIN ENERGY MALNUTRITION WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES**

<table>
<thead>
<tr>
<th>Over all</th>
<th>N</th>
<th>Range</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>100</td>
<td>14</td>
<td>3</td>
<td>17</td>
<td>9.24</td>
<td>2.652</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table Relationship between knowledge of mothers of 0-5 years children regarding protein energy malnutrition with selected socio demographic variables
<table>
<thead>
<tr>
<th>S.no</th>
<th>Demographic variables</th>
<th>Moderate</th>
<th>Inadequate</th>
<th>Total</th>
<th>Chi square</th>
<th>df</th>
<th>'p' value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;25 yrs</td>
<td>31</td>
<td>5</td>
<td>36</td>
<td>4.720</td>
<td>4</td>
<td>0.317</td>
</tr>
<tr>
<td></td>
<td>26-30 yrs</td>
<td>18</td>
<td>1</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>31-40 yrs</td>
<td>16</td>
<td>4</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36-40 yrs</td>
<td>17</td>
<td>0</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;41 yrs</td>
<td>7</td>
<td>1</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hindu</td>
<td>9</td>
<td>69</td>
<td>78</td>
<td>1.653</td>
<td>2</td>
<td>0.438</td>
</tr>
<tr>
<td></td>
<td>Muslim</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Christian</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Illerate</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>2.064</td>
<td>3</td>
<td>0.559</td>
</tr>
<tr>
<td></td>
<td>Primary</td>
<td>3</td>
<td>20</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higher/higher secondary degree</td>
<td>3</td>
<td>39</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Govt employee</td>
<td>5</td>
<td>26</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Occupation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>House wife</td>
<td>7</td>
<td>49</td>
<td>56</td>
<td>1.053</td>
<td>4</td>
<td>0.902</td>
</tr>
<tr>
<td></td>
<td>Cooley</td>
<td>2</td>
<td>22</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Self employee</td>
<td>1</td>
<td>13</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Private employee</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Govt employee</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Monthly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤ Rs.1000</td>
<td>0</td>
<td>16</td>
<td>16</td>
<td>7.147</td>
<td>3</td>
<td>0.067</td>
</tr>
<tr>
<td></td>
<td>Rs.1001-Rs.2000</td>
<td>2</td>
<td>16</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rs.2001-Rs.3000</td>
<td>0</td>
<td>18</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Rs. 3000</td>
<td>9</td>
<td>39</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Type of family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Joint family</td>
<td>5</td>
<td>28</td>
<td>33</td>
<td>1.830</td>
<td>2</td>
<td>0.401</td>
</tr>
<tr>
<td></td>
<td>Nuclear family</td>
<td>6</td>
<td>51</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Extended family</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** NS-Not significant at 5% level (i.e., P>0.05)

The above table shows the results obtained on chi square analysis of association between knowledge on protein energy malnutrition and demographic variables. It reveals that there was no significant relationship between the knowledge of mothers regarding protein energy malnutrition with age, religion, occupation and type of family. But there was significant relationship between mother’s knowledge score with education and income.
DISCUSSION

The study was focused on assessing the knowledge of mothers of under five children regarding the protein energy malnutrition. The discussion was described under the following headings.

1. Socio demographic variables of mothers.
2. Knowledge of mothers regarding the protein energy malnutrition.
3. Relationship between mothers’ knowledge on protein energy malnutrition with selected socio demographic variables.

1. Socio Demographic Variables of Mothers

Out of 100 mothers 36% were in less than 25 years, 20% were in 31-35 years, 19% were in 26-30 years, 17% were in 36-40 years and 8% in above 40 years. Majority of the mothers 78% were Hindu, 10% were Muslim and 12% was Christian. 42% were High/Higher secondary, 31% were having Degree, 23% had Primary education and only 4% were Illiterate 56% were house wife and maximum number of subjects 24% were coolly, 14% were self employed, 5% were private employee and no one was government employees. Out of 100 mothers 48% were getting the monthly income of less than Rs.3000/-, equal proportion of 18% were having the monthly income of Rs.1001/-Rs.2000/- and Rs.2001-Rs.3000 and 16% of mothers were having family monthly income is above Rs.1000/-.

II. Knowledge of Mothers regarding protein energy malnutrition:

Finding of the study revealed that of mothers according to their level of knowledge regarding protein energy malnutrition of children. Only 0% of mothers were having adequate knowledge, most of the mothers 11% were having moderate knowledge and 89% were having inadequate knowledge regarding protein energy malnutrition of children. Overall, the knowledge of mothers regarding protein energy malnutrition was 9.24 (mean) and 2.625 (Std. Deviation).

III. Association between knowledge of mothers on protein energy malnutrition and socio demographic variables.

The present study reveals that there was no significant relationship between the mother’s knowledge level on protein energy malnutrition with age, religion, occupation and type of family. But there was significant relationship between mothers’ knowledge with education and income.

CONCLUSION

The present study reveals that only 89% of mothers have inadequate knowledge and 11% of mothers have moderate knowledge about protein energy malnutrition Overall the knowledge of mothers regarding protein energy malnutrition was 9.24 (mean) and 2.625 (Std. Deviation). The present study reveals that there was no significant relationship between the mother’s knowledge level on protein energy malnutrition with educational status and income. The mother’s knowledge regarding preventive aspects of protein energy malnutrition was inadequate (less than 50%).
This indicates the necessity of an improvement in the economic and socio-cultural status of the community and promotion of healthy practices

**Conflicts of interest**
The authors declared no conflict of interest.

**Compliance With Ethics Requirements**
This article does not contain any studies with human or animal subjects.

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**References**

ANNEXURE – A
SELF STRUCTURED INTERVIEW SCHEDULE
PART - I
SOCIO DEMOGRAPHIC DATA

1. OPD No

2. Age in yrs
   a. < 25
   b. 26-30
   c. 31-35
   d. 36-40
   e. > 40

3. Religion
   a. Hindu
   b. Muslim
   c. Christian

4. Educational Qualification
   a. Illiterate
   b. Primary education
   c. High/Higher secondary education
   d. Degree education

5. Occupation
   a. Housewife
   b. Cooley
   c. Self employee
   d. Private employee
   e. Government employee

6. Family income/month
   a. Below Rs.1000/-
   b. Rs.1001-Rs.2000/
   c. Rs.2001-Rs.3000/
   d. Above Rs.3000-

7. Type of family
   e. Nuclear family
   f. Joint family
   g. Extended family
SELF STRUCTURED INTERVIEW SCHEDULE ON PROTEIN ENERGY MALNUTRITION

Meaning & causes:

1. **Malnutrition means**
   a) Excess of minerals
   b) Excess of vitamins
   c) Either malnutrition (or) overnutrition
   d) Low level of calcium

2. **Protein energy Malnutrition is associated with the deficiency of**
   a) Only calorie deficiency
   b) Only protein deficiency
   c) Both protein and calories deficiency
   d) Iron deficiency

3. **Protein energy malnutrition is a**
   a) Communicable disease
   b) Hereditary disease
   c) Genetic disease
   d) Non-communicable disease

4. **Protein energy malnutrition mostly affect the children between the age of**
   a) 0-5 years
   b) 6-12 years
   c) 13-18 years
   d) Above 18 years

5. **Major cause of Protein energy malnutrition includes**
   a) Low birth weight, infections and delayed weaning
   b) Respiratory and cardiac disease
   c) Dehydration
   d) Curse of god and sin

   **Normal value of protein intake:**

6. 1g of protein will provide --------------- of calorie
   a) 10%
   b) 20%
   c) 30%
   d) 40%

7. **The protein requirement of 1 year old child is**
   a) 1g/kg/d
   b) 2g/kg/d
   c) 3g/kg/d
   d) 4g/kg/d

Signs & symptoms & Investigation:

8. **The common clinical signs of child with Protein energy malnutrition**
   a) skin and hair change
   b) bleeding gums
   c) blood vomiting
   d) fever & headache

9. **The severe signs of Protein energy malnutrition**
   a) stunted growth
b) increase in height
c) weight gain
d) bony tenderness

10. How marasmus child looks like
   a) healthy
   b) very thin
   c) increase in weight
   d) edematous

11. How Kwashiorkor child looks like
   a) irritable
   b) Edematous and shiny skin
   c) Enlarged abdomen
   d) all the above

12. The best method of the early detection of PEM is
   a) hospital
   b) temples
   c) schools
   d) none of the above

13. Underweight Means
   a) weight-for-age less 80% expected
   b) Healthy child
   c) Baby more than an expected weight
   d) all the above

14. Complications of Severe Acute Malnutrition include
   a) ARI
   b) Diarrhea
   c) Poor feeding
   d) All of the above

Treatment & prognosis:
15. The fat which reappear first on recovery is
   a) Buccal pad of fat
   b) Fat in the abdomen
   c) Fat in the back
   d) Buttock fat

16. The early signs of recovery in Protein energy malnutrition is
   a) Active & alert
   b) Increased weight
   c) Increased appetite
   d) Interesting in surrounding

17. We can give best treatment for child with Protein energy malnutrition from
   a) Hospital and home care treatment
   b) Temples
18. Factors to be considered while buying a protein and energetic foods for child with Protein energy malnutrition is
   a) Expensive foods
   b) Tin foods or preserved foods
   c) Cheapest and nutritious foods
   d) None of these

19. Foods that are given to treat the child with Protein energy malnutrition are
   a) Milk, egg and meat
   b) Chocolate, icecream
   c) sweet
   d) Junk food

Prevention:
20. The duration for providing breast feeding exclusively to prevent PEM
   a) 0 – 6 month
   b) 6 month – 1 year
   c) 1 - 1 ¼ years
   d) Up to 2 years

21. Breast milk provides
   a) High calories
   b) High quality of essential amino acid
   c) Less quality of protein
   d) Less quality of calorie

22. The period to start weaning along with breast feeding to prevent PEM is
   a) At the completion of 3rd month
   b) 4-6 month
   c) Above 6 months
   d) After one year

23. The energy requirement of an infant per day
   a) 80-90 Kcal/g
   b) 60-70 Kcal/g
   c) 50-60 Kcal/g
   d) 110-120 Kcal/g

24. PEM can be prevented by
   a) Providing counseling and health education to mother
   b) Exclusive Breast feeding
   c) Nutritional supplementing with Protein & calorie rich diet
   d) All the above

25. Treatment of malnutrition at home
   a) improve nutrient intake
   b) supplements of vitamins and minerals
   c) intake of protein carbohydrates and water
   d) all the above