EFFECTIVENESS OF PLANNED TEACHING PROGRAMME REGARDING MALNUTRITION IN TERMS OF KNOWLEDGE AND PRACTICE AMONG MOTHERS WITH UNDER FIVE CHILDREN IN AYYAMPATTY AT TRICHY DISTRICT

Certified Bonafide Project Work
Done By

Ms. A.KANIMOZHI
M.Sc., Nursing II Year
Bishop’s College of Nursing
Dharapuram.

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Internal Examiner             External Examiner

COLLEGE SEAL

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CHAPTER - I

INTRODUCTION

“Children are our most valuable natural resource”

- By Herbert Hoover

BACKGROUND OF THE STUDY

Children are the wealth of Tomorrow. A nation's wealth depends on its healthy citizens. A healthy adult emerges from a healthy child. As far as mankind is concerned, the earlier stages of growth and development is the vital factor in determining the whole personality of an individual.

Indian journal of pediatrics (2000)

Nutrition may be defined as the science of food and its relationship to health. It is concerned primarily with the part played by nutrients in the body growth, development and maintenance. A child who is physically weak can not be expected to take full advantage of schooling. The diet should contain all the nutrients in proper proportion, adequate for maintenance of optimal health.

Ghai O.P. (2007)
Nutritional disorders may result from either deficiency or excess of any of the nutrients like protein, fat, vitamins, minerals and salt. Malnutrition is a major pediatric problem and it is responsible for high rates of morbidity and mortality.

Achar.,(2003)

Malnutrition is defined as the cellular imbalance between the supply of nutrients and the body’s demand for them to ensure growth, maintenance and specific functions.

WHO (2003)

Malnutrition continues to be a major health problem in the world today, particularly in children under five years of age. The most extreme form of malnutrition or protein energy malnutrition (PEM) are kwashiorkor and marasmus.

Donna L. wong.,(2003)

Malnutrition is the most widespread condition affecting the health of children. Malnutrition makes more susceptible to infection, recovery is slower and mortality is higher. Under nourished children do not grow to their full potential of physical and mental abilities. Malnutrition in Infancy and childhood leads to stunted growth.

The effects of protein energy malnutrition on brain development are restricts brain development, lowers concentration, limits child’s cognitive development. The effects of protein energy malnutrition on nervous system are tissue damage as well as tissue content in children, growth arrest and reduction in the cell size, decrease in brain size, functional impairment due to poor brain myelination.


India is home to 40 % of the world’s malnourished children and 35 percent of the developing world’s low birth weight infants. Every year 2.5 million children die in India, accounting for one in five deaths in the world. More than half of these deaths could be prevented if children were well nourished.


Malnutrition continues to affect newborns and young children and has been found to be the underlying cause of up to 50% of under five deaths. About 55 million or one third of the world’s under weight children under age five live in India with the worst affected states being in Madhya Pradesh, Jharkand, Bihar, Gujarat, Orissa, Chattisgarh, Utter Pradesh and Meghalaya.

Protein-energy malnutrition (PEM), refers to a class of clinical conditions that may result from varying degree of protein lack and energy inadequacy. Deficiency of proteins is usually not primary and isolated. Almost always it appears to be due to poor intake of food as such.

Malnutrition is a “Man-made disease” which often starts in the ‘womb’ and ends in the ‘tomb’. Broadly speaking, two major clinical syndromes, kwashiorkor and nutritional marasmus, are widely recognized. Kwashiorkor is said to result from gross deficiency of proteins though energy deficiency is also present. Nutritional marasmus, on the other hand, results from gross deficiency of energy though protein deficiency also accompanies. Thus, it is clear that there is deficiency of both protein and energy in both the states. The predominance of the deficiency determines whether it is going to be kwashiorkor or nutritional Marasmus. Many malnourished children show overlap in the clinical picture, demonstrating features of both the deficiency states at a time. It is often quite appropriate to label them a Marasmic-kwashiorkor.


MALNUTRITION “ICE BERG”

That is what we see just the tip of the vast problem in the hospital
All these form of PEM, in actually, constitute a continuous spectrum of the manifestations of malnutrition. Growth failure and poor tissue repair (due to protein lack) and energy shortage (due to calorie deficiency) are common to all the forms.

Gupta suraj.,(2006)

In world-wide, 150 million children are malnourished, millions of Indian children are equally deprived of their rights to survive, health, nutrition, education and safe drinking water. It is reported that 63% of them go to bed hungry and 53% suffer from chronic malnutrition.

UNICEF (2005)

In world-wide, 56.2 million children of aged 0-4 years are malnourished with muscle wasting, 182.7 million children of aged 0-4 years are malnourished with stunted growth. The prevalence of
underweight children less than 5 years occupies 50% of the incidence in India, the prevalence of stunned growth less than five years occupies 63% of incidence in India.

**WHO (2006)**

Infants and young children are more susceptible to PEMs characteristic growth impairment because of their high energy and protein needs and their vulnerability to infection. Globally, children who are poorly nourished suffer up to 160 days of illness each year.

**WHO (2007)**

In the developing world, 146 million children under age five- 27 percent are under weight, the worst situation being in south Asia where nearly half (46 percent) of children under age of five are under weight. About 9.7 million children dying globally before they reach age of 5, India accounts for 2.1 million. As many as 35% of world’s malnourished children live in India.

**UNICEF (2008)**

At present 65% of children under 5 years of age are under weight. This includes 47% moderate to severe cases, 18% severe malnutrition, of these, 16% have moderate to severe wasting and 46% moderate to severe stunting.

**Park .K.,(2007)**
It was estimated that the under five population in India is 1,26,808 thousand in the year of 2007. Among that mortality rate was 72 per thousand live births. Between the years 2000-2007 about 46% of under 5 children suffering from under weight (NCHS/WHO). In India for the year 2003, 1-4 years age mortality was estimated to be 17.4 per 1000 live births, in rural 19.2 per 1000 live birth and in urban 10.2 per 1000 live births. The incidence of protein energy malnutrition (PEM) in India in preschool age children is 1-2% because malnutrition can cause vicious circle - infection contributing to malnutrition and malnutrition contributing to infection, both acting synergistically. Impact of malnutrition among children includes Weight loss, Growth faltering, Immunity lowered, mucosal damage and frequent illness.

Park.K.,(2000)

According to national monitoring bureau (2005) reported that Protein energy malnutrition has been identified as a major health and nutrition problem in India. It occurs particularly in children in first year of life. It is characterized by low birth weight if the mother is malnourished, poor growth in children and high level of mortality in children between 12 and 24 months, and is estimated to be an underlying cause in 30% of deaths among children under five years, as many as 3% of children in developing world (230 million) have low height for their
age (stunting) and 10%(50 million) children have low weight for height. The rate of low height for age reflects the cumulative effects of undernutrition and infections since birth or even before birth, high rates are often suggestive of bad environmental conditions and/or early malnutrition. On the other hand, a greater frequency of low weight for height, often reflects current severe under nutrition or disease.

**NEED FOR THE STUDY**

Each year 27 million children are born in India. Around 10% of them do not survive to 5 years of age. India contributes to 25% of over 10.6 million under five deaths occurring worldwide every year. In India about 30% of the babies are born with risk of morbidity and mortality, malnutrition is an important underlying cause of infant and child mortality. About 50% of childhood deaths in India are attributable to malnutrition. About 46% children aged under five years are stunted in their growth. Contributing causes of malnutrition includes infections, insufficient nutritional intake and inadequate home care practices.

*Park.K., (2007)*

Under nutrition contributes to 53% of the 9.7 million deaths of children under five, each year in developing countries. This means that one child dies in every six seconds from malnutrition and related causes.
The database on Protein energy malnutrition in children under five years in developing countries worldwide has progressively fallen from 42.6% in 1975 to 34.6% in 1995. However, in south east Asian region the fall in prevalence has not been rapid as the growth in population. Currently, over three fourth (79%) of the world’s malnourished children live in this region. 50% of child deaths in developing countries are related to malnutrition potentiated effects and 83% of these deaths are attributable to mild and moderate malnutrition.

According to Government of Tamil Nadu (2002) reported that in India, the incidence of protein energy malnutrition among pre-school age children is 1-2%, the greater majority of cases of protein energy malnutrition, nearly 80% are the intermediate ones, that is mild and moderate cases which frequently go unrecognized. The problem exists in all the states and that nutritional marasmus is more frequent than kwashiorkor. Recent district level data on the prevalence of mild malnutrition among 0 - 36 months old children in the year (2002) in Coimbatore (96.6), Cuddalore (90.5), Dharmapuri (90.5), Dindigul (94.1), Erode (95.4), Kanniyakumari (97.8) Madurai (94.3) Nagapattinam (87.7),
Ramanathapuram (90.6), Salem (95.6), Sivagangai (93.1), Thanjavur (91.1), Tiruchirapalli (93) Tirunelveli (91.1), Tiruvannamalai (89.6), Toothukudi (94.5), Vellore (94), Villupuram (86) and Virudhunagar (90.7).

**IAP guidelines (2006)** reported that in Tamil Nadu, the prevalence of protein energy malnutrition is 12.6%. The four year multi centre study, which began in 1999 involves 10,000 infants and children, includes both longitudinal and cross sectional components and involves over a quarter of a million individual Infant follow ups”. Protein energy malnutrition affects every fourth child world – wide; 150 million (26.7%) are underweight while 182 million (32.5%) are stunned. Geographically, more that 70% of protein energy malnutrition children live in Asia, 26% in Africa and 4% in Latin America and the Caribbean. Their plight may well have begun even before birth with a malnourished mother.

About 60% of all deaths, occurring among children aged less than five years(under five children) in developing countries could be attributed to malnutrition. It has been estimated that nearly 50.6 million under five children are malnourished and almost 90% of these children are from developing countries.
Ahmed Tahmeed Y.,(2008)

National institute of nutrition (2006) conducted a nutritional survey carried out in 12 states of India reported that 60% of pre school children were under weight, 62% were stunted and about 15% were wasted.

Indian council for medical research (2004) had reported that only 5% of pre school children have normal body weight for age, 70% shows severe degree of malnutrition, 41% suffer from mild malnutrition and 4% from moderate malnutrition.

Nepal demographic and health survey (2001) had reported that the percent prevalence for under weight and wasted children of under five years of age are 48.3 and 10 percent. Around 50% of the under five children are stunted. Children in rural areas are more likely to be stunted (52%) than in urban area(37%)

The government of India introduces various nutritional programs in its policy from time to time. Most of these are supplementary nutrition programs are like mid-day meal program, Balwadi nutrition Program, nutritional vitamin A prophylaxis program and nutritional anemia control program. To be effective, the nutritional programs should be comprehensive and emphasize upon improvement in general health and
quality of life of population, control of infections and effective nutritional education besides provision of nutritional supplementation.


Mukherjee Soma, et al., (2008) conducted a study to assess the prevalence of underweight, stunting, and thinness among rural school children of Onda, Bankura Dt, India. A total of 454 (201 boys and 253 girls) Bengalee Hindu children aged 6-14 years were included in this cross sectional study. The overall age and sex combined prevalence of underweight, stunting, and thinness were 16.9%, 17.2% and 23.1% respectively. Both sexes had similar rates of stunting (boys = 14.4%, girls = 19.4%). The rates of underweight were high (20-29%) and medium (10-19%), among boys (20.9%) and girls (13.8%).

V.G. Rao, et al., (2005) conducted a study to assess the prevalence of Protein energy malnutrition (PEM) in Kundam block of Jabalpur district, Madhya Pradesh revealed that the high prevalence of under nutrition in terms of under weight (61.6%), stunting (51.6%) and wasting (32.9%) was observed. Prevalence of clinical protein energy malnutrition (PEM) in the form of marasmus was found in 6(0.6%) children, while Kwashiorkor was not recorded.

Mother is an important primary care provider and therefore, her education and access to information will help her, about care of her infant. As children constitute the most important and vulnerable segment of our population, mothers represent the most important health
worker as far as child health is concerned. Health education inputs for mother should be strengthened. So that, she is capable of preventing and identifying common childhood illness.

The mothers play a major role in promoting the health of below 6 years old children and child care activities. The child care includes knowledge regarding prevention of childhood diseases, proper growth and development and basic needs of the children. The mother is the key person in the family to promote the child’s well being and to prevent the diseases. The mother will get information regarding child care through health care professional, family members, neighbours, and mass media. Therefore the health care professionals must play a vital role to provide education to the mothers regarding the services available in the society.

Gupta suraj (2005)

During her clinical experience, the investigator found most of the under-five children were under weight and found that their mothers are unaware about the importance of nutrition in preventing infections. So, this scenario insist the investigator to take up this study to create an awareness regarding malnutrition and to alleviate malnutrition among under five children.

STATEMENT OF THE PROBLEM
A study to assess the effectiveness of planned teaching programme regarding malnutrition in terms of knowledge and practice among mothers with under five children in Ayyampatty at Trichy district.

OBJECTIVES

1. To assess the pretest knowledge and practice scores regarding malnutrition among mothers with under five children.
2. To assess the posttest knowledge and practice scores regarding malnutrition among mothers with under five children.
3. To compare pretest and posttest knowledge scores regarding malnutrition among mothers with under five children.
4. To compare pretest and posttest practice scores regarding malnutrition among mothers with under five children.
5. To correlate posttest knowledge and practice scores regarding malnutrition among mothers with under five children.
6. To find association between posttest knowledge scores with their selected demographic variables among mothers with under five children.

OPERATIONAL DEFINITIONS

EFFECTIVENESS:

It means producing an intended result. In this study it refers to determine the extent to which the Planned teaching
programme has achieved the desired effect in improving the knowledge and practice regarding malnutrition among mothers with under five children by using statistical measurement.

**PLANNED TEACHING PROGRAMME:-**

It is a systematically organized instruction developed to help the people to learn. In this study it refers to a planned teaching programme regarding definition, causes, risk factors, signs and symptoms, management and prevention of malnutrition for 45 minutes using posters to create an awareness on knowledge and practice regarding Protein energy malnutrition (kwashiorkor and marasmus) to mothers with under five children.

**MALNUTRITION:-**

Malnutrition is defined as any nutritional disorder caused by an insufficient, unbalanced or excessive diet or impaired absorption or assimilation of nutrients by the body. It is a state wherein adequate nutrients are not delivered to the cells to provide the substrate for optimal functioning.

*Sreevani.R.,(2006)*

In this study it refers to protein energy malnutrition(PEM) which is a potentially fatal body depletion disorder. The term PEM, refers to a class of clinical conditions that may result from varying degree of protein
lack and energy (calorie) inadequacy. The two main forms of Protein energy malnutrition are kwashiorkor and marasmus.


**KNOWLEDGE:**

Information gained through education. In this study, it refers to a verbal response of the mothers with under five children and their level of understanding regarding malnutrition which is measured by structured interview schedule and its scores.

**PRACTICE:**

It means way of doing something. In this study it refers to the knowledge on practice in terms of verbal response of the mothers with under five children regarding malnutrition which is measured by using structured interview schedule and its scores.

**MOTHERS WITH UNDER FIVE CHILDREN:**

In this study, it refers to mothers who are having children with the age group of 0-5 years.

**HYPOTHESES**

H₁  - The mean post test knowledge score is significantly higher than the mean pre test knowledge score.

H₂  - The mean post test practice score is significantly higher than the mean pre test practice score.
H₃ - There will be significant correlation between post test knowledge and practice scores regarding malnutrition.

H₄ - There will be significant association between post test knowledge scores of with their selected demographic variables among mothers with under five children.

ASSUMPTION:-

- The mother may have less knowledge regarding malnutrition.

- Planned teaching programme may enhance the mothers knowledge regarding Malnutrition.

- Adequate knowledge may help the mothers to protect their children from malnutrition.

DELIMITATIONS:-

- The study is limited to 60 samples.

- The period of study is limited to 5 weeks only.

PROJECTED OUTCOME:-

The mothers will gain adequate knowledge through this planned teaching programme which will improve their practice to prevent the occurrence of malnutrition and its complications in children.

CONCEPTUAL FRAME WORK
The conceptual framework for this study was derived from general system theory (Ludwig Von Bertalanffy, 1968). According to general system theory, system is a set of interacting parts in a boundary which makes the system work well to achieve its overall objectives.

General system theory is useful in breaking the whole process into essential task to assure goal realization. The number of parts of the systems totally dependent on what is needed to accomplish the goal or purpose. The goal is necessary for any system to function. The aim of the study is to improve the knowledge and practice regarding malnutrition among mothers with under five children.

Bertalanffy explained that the system has four major concepts.

- Input
- Throughput
- Output
- Feedback

**INPUT**

According to theorist, input refers to the types of information that enters into the system from the environment through its boundaries.

In this study, the input includes demographic variables such as age, educational status, occupation, family size, type of family, number
of under five children, family monthly income, religion and assessing the pretest knowledge and practice regarding malnutrition. Planned teaching programme regarding malnutrition which includes definition, contributing factors, definition of protein energy malnutrition, types, meaning of kwashiorkor and marasmus, clinical features, dietary management, complications and prevention of malnutrition by using Posters.

THROUGHPUT

Throughput is the operational phase. It is the process that allows the input to be transformed to mother on knowledge and practice regarding malnutrition through Planned teaching programme.

OUTPUT

Output is any information that leaves the system and enters to the environment through system boundaries.

Assessing the post test knowledge and practice regarding malnutrition. The Knowledge scores were interpreted as adequate, moderately adequate and inadequate. The practice scores were interpreted as inadequate, moderately adequate and adequate.

FEEDBACK

Feedback is the result of knowledge of throughput. It allows the system to monitor its internal function so that it can either increase or restrict its inputs.
In this study, it refers to reinforcement of the planned teaching programme to mothers with under five children if their post test knowledge score and practice score is inadequate.
POST TEST

THROUGHPUT

OUTPUT

Demographic Variables
- Age of mother
- Educational status
- Occupation
- Family size
- Type of family
- Number of under five children
- Family monthly income
- Religion

PRE TEST

Assess the knowledge and practice regarding Malnutrition among mothers of under five children by using structured interview schedule and dichotomous structured interview schedule

Transformation of knowledge and knowledge on practice regarding Malnutrition through Planned teaching programme

Assess the knowledge and practice regarding Malnutrition.

Knowledge
- Adequate
- Moderately Adequate
- Inadequate

Practice
- Adequate
- Moderately Adequate
- Inadequate

FEEDBACK

FIG: 1 MODIFIED LUDWIG VON BERTLANNFY SYSTEM THEORY (1968)
CHAPTER - II

REVIEW OF LITERATURE

The review of literature for the present study has been organized under the following headings.

PART - I

1. Overview of malnutrition.

PART - II

1. Studies related to Prevalence of malnutrition.
2. Studies related to risk factors of malnutrition.
3. Studies related to effects of malnutrition.
4. Intervventional studies related to malnutrition.

PART-I

OVER VIEW OF MALNUTRITION

INTRODUCTION

Malnutrition is a major pediatric problem and it is responsible for high rates of Mortality and Morbidity. In a vast majority of children, mild to moderate malnutrition remains undetected due to lack of awareness on the part of all concerned, medical and paramedical
personnel and parents. PEM is also referred to as protein energy malnutrition. It develops in children and adults whose consumption of protein and energy is insufficient to satisfy the body’s nutritional needs. Protein energy malnutrition may also occur in persons who are unable to absorb the vital nutrients or convert them to energy essential for healthy tissue formation and organ function.

**DEFINITIONS**

**MALNUTRITION**

Malnutrition is defined as any nutritional disorder caused by an insufficient, unbalanced or excessive diet or impaired absorption or assimilation of nutrients by the body. It is a state wherein adequate nutrients are not delivered to the cells to provide the substrate for optimal functioning.

_Sreevani.R.,(2006)_

**PROTEIN ENERGY MALNUTRITION**

Protein energy malnutrition (PEM) is a potentially fatal body depletion disorder. The term PEM, refers to a class of clinical conditions that may result from varying degree of protein lack and energy (calorie) inadequacy. The two main forms of Protein energy malnutrition are kwashiorkor and marasmus.

_Ghai.O.P.,(2007)_

**KWASHIORKOR**
It is also called as wet protein energy malnutrition, is a form of PEM characterized primarily by protein deficiency. This condition usually appears at the age of about 12 months when breast feeding is discontinued, but it can develop at any time during a child’s formative years.

**MARASMUS**

Primarily caused by energy deficiency, marasmus is characterized by stunted growth and wasting of muscle and tissue.

**PREVALENCE**

PEM is the most widely prevalent form of malnutrition among children.

PEM affects every fourth child worldwide. About 150 million (26.7%) are underweight while 182 million (32.5%) are stunted.

As many as 31% of children in the developing world (230 million) have low height for age is stunting, and 10% (50 million) children have low weight for height.

The incidence of PEM in preschool age children is 1 – 2%. The great majority of cases of PEM, nearly 80% are the intermediate ones, that is the mild and moderate cases which frequently go unrecognized. The problem exists in all the states and that nutritional marasmus is more frequent than Kwashiorkor.

Ghai.O.P.,(2007)
TYPES OF MALNUTRITION

- Primary malnutrition results from a diet that lacks sufficient sources of protein and or energy.

- Secondary malnutrition is more common in the United States, where it usually occurs as a complication of AIDS, cancer, chronic kidney failure, inflammatory disease that impair the body’s ability to absorb or use nutrients or to compensate for nutrient losses.

CLASSIFICATION OF PEM

PEM is generally classified according to weight for age. Chronic malnutrition is classified according to height for age and acute malnutrition according to weight for height.

a. Classification according to weight for age.

Weight for age is the most commonly used parameter to classify nutritional status.

i) Gomez’s classification:

Gomez and his associates are credited with the first classification of PEM which came in 1956. It has three degrees.

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Weight for age (Harvard % of expected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt;90</td>
</tr>
<tr>
<td>First degree PEM</td>
<td>75 – 90</td>
</tr>
<tr>
<td>2nd degree PEM</td>
<td>60 – 75</td>
</tr>
</tbody>
</table>
All cases with edema to be included in third degree PEM irrespective of weight for age.

Suggested by Bengoa in 1977.

Achar.,(2003)

### ii). Jelliffe’s classification:

It has 4 degrees of PEM and it was proposed in 1965.

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Weight for age (Harvard) % of expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt;90</td>
</tr>
<tr>
<td>First degree PEM</td>
<td>80 – 90</td>
</tr>
<tr>
<td>2nd degree PEM</td>
<td>70 – 80</td>
</tr>
<tr>
<td>3rd degree PEM</td>
<td>60 – 70</td>
</tr>
<tr>
<td>4th degree PEM</td>
<td>&lt;60</td>
</tr>
</tbody>
</table>

Achar.,(2003)

### iii. Welcome trust or International classification:

It is a clinical classification suggested by welcome trust in 1970. It is based on weight for age and the presence or absence of edema.

<table>
<thead>
<tr>
<th>Weight for age (Boston) % of expected</th>
<th>Edema</th>
<th>Clinical type of PEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 – 80</td>
<td>+</td>
<td>Kwashiorkor</td>
</tr>
</tbody>
</table>
iv. IAP classification: It is the most popular classification in India proposed by IAP in 1972.

It has 4 grades of PEM.

<table>
<thead>
<tr>
<th>Nutritional status</th>
<th>Weight for age (% of expected)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt;80</td>
</tr>
<tr>
<td>Grade I PEM</td>
<td>71 - 80</td>
</tr>
<tr>
<td>Grade II PEM</td>
<td>61 - 70</td>
</tr>
<tr>
<td>Grade III PEM</td>
<td>51 - 60</td>
</tr>
<tr>
<td>Grade IV PEM</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>

If the patient has oedema of nutritional origin, the letter k is placed along with the grade of PEM in order to demote Kwashiorkor.

b) Classification according to Height for age:

The calculation based on weight for age does not help to exclude other obvious syndromes of short stature. Moreover, it does not simply whether the PEM is of recent or past onset. Almost simultaneously two workers, Waterlow from London & McLaren from Beinet, independently came out with the height and weight for height concept to indicate stunting and wasting respectively in 1972. Height for age is used to grade stunting. It indicates past or chronic PEM.

Height for age:
### Height for age (% of expected)

<table>
<thead>
<tr>
<th></th>
<th>Water lows classification</th>
<th>M C Laren’s classification</th>
<th>Visweshwara Rao’s classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt;95</td>
<td>&gt;93</td>
<td>&gt;90</td>
</tr>
<tr>
<td>1st degree stunting/ short</td>
<td>90 – 95</td>
<td>80 – 93</td>
<td>80 – 90</td>
</tr>
<tr>
<td>second degree</td>
<td>85 – 90</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Third degree stunting / dwarf</td>
<td>&lt;85</td>
<td>&lt;80</td>
<td>&lt;80</td>
</tr>
</tbody>
</table>

Elizabeth.K.E.,(2005)

C). Classification according to weight for Height: It is used to grade wasting, wasting indicates recent or acute PEM.

<table>
<thead>
<tr>
<th>Weight for Height (% of expected)</th>
<th>Waterlow’s</th>
<th>M c Laren’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&gt;90</td>
<td>&gt;90</td>
</tr>
<tr>
<td>1st degree wasting or mild wasting</td>
<td>80 – 90</td>
<td>85 – 90</td>
</tr>
<tr>
<td>2nd degree wasting or moderate wasting</td>
<td>70 – 80</td>
<td>75 – 85</td>
</tr>
<tr>
<td>3rd degree wasting- severe wasting</td>
<td>&lt;70</td>
<td>&lt;75</td>
</tr>
</tbody>
</table>

Elizabeth.K.E.,(2005)

d) WHO cut off assessment of PEM:

WHO(world health organization) cut off to estimate PEM in population analysis is the mean value minus two SD(standard deviation). As adopted from wasterlow’s classification, the combined position of two indicators, ie weight for height and height for age
distinguishes between wasting caused by acute PEM & stunting caused by chronic PEM.

<table>
<thead>
<tr>
<th>Cut off</th>
<th>H/A (Height for age)</th>
<th>W/H (weight for height)</th>
<th>H/A &amp; W/H</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Mean - 250</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>&lt; mean - 250</td>
<td>Stunted</td>
<td>Wasted</td>
<td>Stunted &amp; wasted</td>
</tr>
</tbody>
</table>

Elizabeth.K.E.,(2005)

e). SD (standard deviation score) / Z score: The SD score is used in population studies. Percentage of the median is calculated first to interpret data at population level & Z score is than calculated.

Percentage of the median = \( \frac{\text{Measured individual value} \times 100}{\text{Reference median}} \)

SD/ Z score = \( \frac{\text{Measured individual value} - \text{reference median}}{\text{SD of the reference median}} \)

Elizabeth.K.E.,(2005)

**ETIOLOGY**

- Poverty
- Low birth weight
- Infections
- Population growth
• Feeding habits
• High pressure advertising of baby foods
• Social factors like wars, natural disasters such as floods, earthquakes, droughts.

Ghai.O.P.,(2007)

CLINICAL MANIFESTATIONS
Mild to moderate malnutrition

• Growth lag is more pronounced in weight than height.
• Stunted height.
• Thin limbs
• Unduly large head
• Buttocks are flattened with wrinkling of skin over the front of thighs.
• Scapula look winged.
• Thin abdominal wall and therefore distended abdomen.

Marasmus:

• Highest incidence seen in Infancy.
• Gross wasting of muscle and subcutaneous tissues resulting in emaciation.
• Marked stunting and no edema.
• Body weight is less than 60% of the expected weight for age.
• Depletion of fat in the adipose tissue.
• Muscles atrophied.
• Loose folds of skin are prominent over the glutei and inner side of thigh.
• Buccal pad of fat is presented till the malnutrition become extreme.
• Skin appears dry, scaly, and inelastic.
• Hair is hypo pigmented.
• Mid arm circumference is reduced.
• Shows voracious appetite.

Kwashiorkor
• Markedly retarded growth, psychomotor changes
• Edema of dependent parts.
• Muscles of the upper limb are wasted but the lower extremities appear swollen.
• Muscle wasting is marked by well preserved subcutaneous tissue and edema.
• Mental changes.
• Child becomes lethargic, listless and apathetic.
• Showed little interest in the environment and does not play with toys.

Other manifestations:
• Hepatomegaly.
• Hair changes – appears reddish brown.
• Skin changes – shows erythematic, followed by hyperpigmentation, flaky paint dermatosis, Lesions are more marked on extremities.
• Petechiae or ecchymosis appear in severe cases.
• Skin may become dry, inelastic, mosaic in appearance.
• Follicular keratosis, sores and scabies may also be observed.
• Infections.

Children often suffer from recurrent episodes of diarrhea, respiratory and skin infections.

Ghai.O.P.,(2007)

MANAGEMENT

Severely malnourished children have to be shielded (treated or presented) against.

S - Sugar deficiency (ie) hypoglycemia.
H - Hypothermia
I - Infection and septic shock
EL - Electrolyte imbalance.
DE - Dehydration
D - Deficiencies of Iron, Vitamins and other micronutrients.

Sequential approach to management of severe PEM.

Day 1-2

Day 3-7

2-6 Wks

6-8 Wks

8-36 Wks

Follow up

Prevent relapse

Discharge

Catch up Growth & Rehabilitation

33
Dietary therapy:

Malnourished children need BEST dietary management.

B - Beginning of feeding.

E - Energy dense feeding.

S - Stimulation

T - Transfer to home diet.


Nutritional therapy

Mild malnutrition

- Dietary advice
- Parents are advised to increase the food intake of child by all available measures.
- Adequate amount of calories and protein in the diet.
- Child should be kept under surveillance of growth card.

Moderate malnutrition

- Home treatment

Severe malnutrition

- Treated in hospital
PREVENTION OF MALNUTRITION

Prevention at family level

- Exclusive breast feeding of Infants for 1st 6 months.
- Nutritional supplement should be introduced in diet of Infants after 6 months of age.
- Vaccine preventable diseases should be prevented by appropriate and adequate immunizations.
- Iatrogenic restriction of feeding in fevers and diarrhea should be discouraged.

Prevention at community level

- Early detection of malnutrition and intervention.
- Integrated health package.
- Nutrition education.
- Vigorous promotion of family planning.
- Income generation activities.
- Promotion of education and literacy in the community.
- Technological measures.

Prevention at National level

- Nutrition supplementation
- Nutritional surveillance.
- Nutritional planning.
COMPLICATIONS

- Superadded infections - Septicemia, Pneumonia, Urinary tract infection, Tuberculosis
- Dehydration and dyselectrolytemia - Accompany diarrhea often with lactose intolerance
- Hydrothermia - <35°C may prove fatal (SIDS)
- Congestive cardiac failure
- Anemia
- Bleeding
- Disseminated intravascular coagulation
- SIDS  
  
Gupta suraj (2004)

PART-II

1. STUDIES RELATED TO PREVALENCE OF MALNUTRITION

Kaushic Bose, et.al., (2008) conducted a study to assess the prevalence of underweight, stunting and thinness by age and sex among under five children in Midnapore, West Bengal. According to WHO classification of severity of malnutrition among children, the overall age and sex combined prevalence of underweight, stunting, and thinness were 16.9%, 17.2% and 23.1% respectively. Among boys, the underweight was high (20.9%) while thinness was very high (27.8%). In
case of girls, underweight was medium (13.8%) while thinness was very high (19.4%). Both sexes had low (20%) rates of stunting.

**Maria.M, et.al., (2008)** conducted a study to determine the prevalence of malnutrition and risk factors in children aged 0 - 10 years attending outpatient clinics in Manaus, Brazil. Factors associated with undernutrition were analyzed using a random effects logistic regression. A cross sectional epidemiological study of a population of 347 children revealed that the overall prevalence of underweight, stunting, and wasting were 18.1, 15.5 and 10.7% respectively, with reference to CDC growth curves and 14.3, 17.3 and 4.4% respectively, with reference to NCHS growth curves. The overall prevalence of wasting was statistical higher according to CDC(centre for disease control) reference than that estimated using the NCHS(National center for health statistics) reference (P=0.02).

**O. Abidoye, et.al.,(2007)** conducted a study of prevalence of Protein energy malnutrition among 0-5 years in rural Benue State, Nigeria. Three hundred and seventy pre-school children (181 males and 189 females) were studied in order to document the prevalence of protein energy malnutrition and factors that militate it. The prevalence of protein energy malnutrition among children was revealed to be 41.6%(154). One hundred and fifty one (40.8%) of them were found to have weight-for-height below -2SD indicating level of stunting among
children. Most malnourished children belonged to mothers who were illiterate 97(54.8%) when viewed from the mothers educational perspective. The study also showed the following factors that were statistically significant with PEM: educational status of mothers (p<0.05), marital status (p<0.05) of mothers, occupational status of mothers (p=0.000), parental income per annum (p=0.000), length of breastfeeding (p=0.000), water supply and regularity, type of housing and toilet facilities.

Biswas, S., et al. (2007) conducted a study investigated age and sex variations in height and weight, levels of stunting, underweight and wasting among 533 (254 boys and 279 girls) 3-5 year old children of Bengalee ethnicity of Nadia district, West Bengal, India. Height for age, weight for age and weight for height <-2 z-scores were used to evaluate stunting, underweight and wasting respectively following NCHS guidelines. Results revealed that boys were significantly heavier than girls at age 3 years. The overall (age and sex combined) rates of stunting, underweight and wasting were 23.9%, 31.0% and 9.4% respectively. The rate of underweight and wasting was higher among girls (underweight=35.1%, wasting=12.2%) compared with boys (underweight=26.5%, wasting=6.3%). Based on the WHO classification of severity of malnutrition, the overall prevalence of underweight was
very high (>or=30%). The prevalence rates of stunting (20-29%) and wasting (5-9%) were medium.

Phengxay .M, et.al., (2007) conducted a study to determine the prevalence and risk factors associated with Protein energy malnutrition (PEM) in children under 5 years of age in Luangprabang province, Laos. Anthropometric measurements of 798 children were done. Mothers were also interviewed with semi-structured questionnaire. There was a high prevalence of stunting, underweight, and wasting, that is ,54.6%, 35%, and 6% respectively. It was also noted that children aged 12-23 months and khumu ethnic children had a high prevalence of stunting(65% and 66%) and under weight (45% and 40%), respectively. Socioeconomic-demographic factors, low maternal education, poor nutrition knowledge for mother and feeding practices for sick children are affecting children’s health regarding stunting and under weight.

Bose.K, et.al.,(2007) conducted a study on stunting, under weight and wasting among ICDS scheme children aged 3-5 years of Bengali ethnicity at 11 ICDS centers, West Bengal, India. Height for age weight for age, weight for height, <-2 Z-scores were used to evaluate stunting, under weight, and wasting. The results revealed that boys were significantly heavier than girls at age of 3 years. The rate of under weight and wasting was higher among girls(under weight=35.1%,
wasting=12.2%) compared with boys (under weight=26.5%, wasting=6.3%). The study concluded that the nutritional status of the subject is unsatisfactory.

Tripathi M.S, et al., (2006) conducted a study to assess the nutritional status of preschooler (2-6 years) in slum areas of Udaipur city, Rajasthan. From the data collected and observations recorded was observed that majority of the subjects were from nuclear family with monthly income of less than Rs. 1500. Developmental pattern of these subjects indicated that the height with age of both male and female subjects increased, however, their body weight did not increase. More than 50% of these preschoolers showed symptoms of Protein energy malnutrition and anemia. Classification for degree of malnutrition as per IAP showed that the majority of these subjects (66%) were under weight (Grade I and II). Waterlow’s classification revealed that majority of these preschoolers were wasted (30%) or wasted and stunted (42%).

Chakraborthy S, et al., (2006) conducted a study of Protein energy malnutrition (PEM) in children (0 to 6 year) in a rural population of Jhansi district (U.P). The multistage sampling procedure was adopted to select approximately two hundred children (0-6 year) for the study. The results showed that the overall occurrence of PEM in under 6
children was observed to be 67%, however it was found to be significantly higher (80.9%) in the age group of 1-3 years as compared to other groups. The overall PEM prevalence was seen to be higher among the children of illiterate mothers whereas grade II,III,IV PEM was higher amongst children of mothers having primary education. They concluded that the extent of malnutrition can be encountered by educating the parents with respect to basic nutritional requirements of their children and encouraging them to consume locally available low cost nutritious foods.

Swami.H.M, et.al., (2006) conducted a study to assess the prevalence of Protein energy malnutrition (PEM) in urban, rural, and slum areas of Chandigarh was found to be about 42% while 22.7%, 14.5%, and 0.7% children had grade I,II,III,IV PEM respectively. The prevalence of PEM was significantly higher among females(47.6%), in 1-3 years age group(53.80%), in slum area(67%) and children of labour class(60.5%).

Bhutta Z.A, et.al., (2006) conducted a study to assess the micro nutrient needs of malnourished children in Karachi estimated 32% (178 million) of children under 5 years of age were stunted. The corresponding global estimate of wasting is 10% (55 million children) of which 3.5% (19 million children) are severely wasted. It is also
estimated that nearly 11% of all children under 5 years of age die due to four micronutrient deficiencies (Vit. A, zinc, Iron, Iodine).

**Ishag Adam, et.al., (2005)** conducted a study to assess the prevalence, types and risk factors for malnutrition in displaced Sudanese children. The nutritional status of 327 under five children living in Mayoo displacement camp was assessed. Risk factors for protein energy malnutrition (PEM) were also studied. According to WHO criteria, a total of 186 (56.1%) children had malnutrition, Of these 101 (30.1%), 43 (13.1%) and 42 (12.8%) were mildly, moderately and severely malnourished respectively. According to Welcome classification, the commonest type of malnutrition was found to be under weight (38.2%), marasmus, kwashiorkor were detected in (6.4%) and (0.9%) respectively, there was no case of marasmic kwashiorkor in the studied population.

**Shaaban S.Y, et.al., (2005)** conducted a cross sectional study to assess the nutritional status of children aged 6 to 36 months in Sharkia Government aiming for early detection of malnourished cases in Cairo, Egypt. Anthropometric measurements such as height, weight, mid-arm, head circumference and skin fold thickness were assessed. The study showed that all anthropometric measurements were lower than normal in under weight and border line subjects. The prevalence rates of wasting, stunting, and under weight were 15%, 24.4%, and 15.4% in
the studied infants in Sharkia Governorate, respectively. The study concluded that there is a high prevalence of wasting, stunting and underweight among infants and children of the studied sample in Sharkia Governorate explained by the low economic status, unbalanced diet.

Miguel.A, et.al.,(2005) performed a cross sectional, community based survey, supplemented by interviews with community leaders, Mexico, to examine the prevalence and predictors of child malnutrition. The prevalence rates of stunting, wasting, and underweight were 54.1%, 2.9% and 20.3% respectively in 2666 children aged younger than 5 years. Stunting was associated with increased ethnicity, poverty, region of residence, Intra community division.

Berkley.J, et.al., (2005) conducted a Cohort study on assessment of severe malnutrition among hospitalized in rural kenya with the samples of 8190 revealed that, 16% (1282) of admitted children had severe wasting (weight for height Z <or = -3) (n=756), Kwashiorkor (n=778) or both. Clinical features of malnutrition were significantly more common among children with Mid upper arm circumference (MUAC) less than or equal to 11.5 cm than among those with weight for height Z score (WHZ) less then or equal to -3.

Hein N.N, et.al., (2005) conducted a study to assess the nutritional status and characteristics related to malnutrition in children less than 5
years of age Nghean, Vietnam with 650 samples revealed that 193 were underweight 269 (44.3%) were stunting and 72 (11.9%) were wasting. Region of residence, mothers level of education and occupation, household size, number of children in the family, weight at birth and duration of exclusive breast feeding were found to be significantly related to malnutrition.

Harishankar, et.al., (2004) conducted study on nutritional status of children under 6 years of age at Allahabad, India. The study aimed to assess the magnitude of malnutrition among children less than 6 years of age. The results revealed that amongst normal grade of nutrition, majority 83 (78.30%) of children were in the age group 25-36 months (2-3 years). The maximum overall prevalence of malnutrition was recorded 33(32.02%) in age group 13-24 months. The maximum overall prevalence of malnutrition was found to be in age 37-72 months. Majority of children having grade II malnutrition were in age group 13-24 months while maximum grade III malnutrition was recorded in age groups 0-12 months. Maximum grade IV malnutrition children were found to be 2 (1.88%) in age group 25-36 months followed by 1(0.65%) in age group 37-72 months.

Mustafa Mabyou, et.al.,(2004) conducted a study on prevalence, types, risk factors for malnutrition. According to WHO criteria, a total of 186 (56.1%), Children had malnutrition, of these 101 (30.15), 43
(13.1%) and 42 (12.8%) were mildly, moderately and severely malnourished respectively. According to welcome classification, the commonest type of malnutrition was found to underweight (38.2%) marasmus, kwashiorkor were detected in (6.4%) and 0.9%) respectively, there was no case of marasmic Kwashiorkor in the studied population.

Khokhar Anita, et.al., (2000) conducted a study of malnutrition among children aged 6 months to 2 years from a resettlement colony of Delhi. Nutritional status of 1661 children aged 6 months to 2 years who attended the well baby clinic of UHC (Urban Health centre) Gokulpuri, Delhi was studied. 60.7% of them were malnourished. Undesirable practices of discarding the colostrum, not exclusively breast feeding the child till at least 4 months of age, delayed weaning, dilution of top milk, use of bottle and nipple for feeding the children are still widely prevalent.

2. STUDIES RELATED TO RISK FACTORS OF MALNUTRITION

Colombatti Raffaella, et.al., (2008) conducted a study to determine the extent of malnutrition and the risk factors for severe malnutrition in Guinea Bissau. The results showed that 86.4% used water from unprotected wells, 97.3% did not have a bathroom at home, 78.2% lived in mud house. Weight-for-age was <-2SD in 23.0% of
children and < 3SD in 10.3%; thirty-seven children(1.4%) were severely malnourished and admitted for day care. All recovered with weight gain of 4.45g/ kg per d, none died or relapsed after 1 year. Severely malnourished children were mainly infants, part of large families and had illiterate mothers.

**Mahgoub S.E, et.al., (2006)** conducted a study to evaluate the level of malnutrition and the impact of some socio-economic and demographic factors of households on the nutritional status of children under 3 years of age in Botswana. Factors included are number of children under 3 years of age in the family, occupation of the parents, marital status, family income, parental education, maternal nutritional knowledge, residence location (urban or rural), gender, and breast feeding practices. Four hundred households and mothers of children under three, representing the 23 Health regions of Botswana, participated in the study. The results show that the level of wasting, stunting, and under weight in children under three years of age was 5.5%, 38.7%, and 15.6% respectively. Malnutrition was significantly higher (p<0.01) among boys than among girls.

**Kurup P.J, et.al., (2004)** conducted a study to determine the risk factors of protein energy malnutrition(PEM) among 0-5 year old children in south batinah region, Oman. The median birth order among PEM case was significantly higher compared to the children without
PEM (Mann whitney test; p=0.029). Using multivariate logistic regression technique, they found that low birth weight, higher birth order and sibling with history of under weight were significant predictors of PEM. They concluded that it is possible to identify children with high-risk of PEM using information on birth weight, birth order and history of PEM in sibling.

Rikimaru.T, et.al.,(2003) conducted study on risk factors for the prevalence of malnutrition among urban African children in Ghana. A case control study was completed at the princes Marie hours Hospital among 170 children aged 8 – 36 months, normal nutritional status babies under weight or severely malnourished babies were recruited at the hospital. The severely malnourished children were more likely to have young mothers (P<0.05) and low weight at birth (P<0.05). The under weight children were also observed to have low birth weight (P<0.05). The severely malnourished group showed reduced feeding frequency (P<0.01) less access to breast feeding (P<0.01) and less support by both parents (P<0.05). It is concluded that low birth weight is one of the important risk factors for the prevalence of underweight and severe malnutrition and that lack of mothers education is also a risk factor for the prevalence of severe malnutrition in the urban children in Ghana.
Thankappan. K.R., et.al.,(2001) conducted a study for assessing the risk factors factors for child malnutrition in rural Kerala, India. Studies indicate that 42-57 per cent of all child deaths in developing countries are due to the potentiating effects of malnutrition on infectious disease, of which over three-quarters can be attributed to mild-to-moderate malnutrition. Risk factors for underweight status in children under 3 years of age were assessed in Kerala, India. Mothers of 34 children weighing below -1 SD for their age and 59 children weighing more than 1 SD for their age, were interviewed for information about maternal health, child feeding patterns, and sibling gender and age data. Statistical analysis showed that current maternal weight (odds ratio = 8.25, \( p = 0.0009 \)), current maternal body mass index (OR = 4.55, \( p = 0.03 \)), infant birth weight (OR = 4.87, \( p = 0.01 \)) and excessive maternal vomiting in pregnancy (OR = 4.48, \( p = 0.04 \)) were significant risk factors for current child underweight status.

3. STUDIES RELATED TO THE EFFECTS OF MALNUTRITION

Psoter.w, et.al.,(2008) conducted a retrospective cohort study to determine the effects of early childhood Protein energy malnutrition(EC-PEM) and current nutritional status as defined by anthropometric measures on the exfoliation and eruption patterns of teeth among adolescents in New York. Oral clinical examinations were conducted using WHO diagnostic criteria. Anthropometric records
(weight-for-age) from Haitian Foundation computerized data base on children from birth through 5- years old were utilized. Current heights and weights were ascertained. The result showed that both a delayed exfoliation of primary teeth and a delayed eruption of permanent teeth were associated with EC-PEM and current stunting in adolescence. The overall interpretation of the models is that malnutrition beginning in the earliest years and extending throughout childhood influences the exfoliation and eruption of teeth.

Nieto Jo- Cornelio, et.al.,(2007) conducted a study to assess the effects of Protein energy malnutrition on the central nervous system in children. Children suffer most from the shortage of nutrients because at early ages, malnutrition has an important impact on the central nervous system. The changes that malnutrition triggers in the brain of these children will have severe consequences on their development and learning abilities. The lack of environmental stimulation associated with malnutrition worsens the damage to the central nervous system. They used computerized tomography brain scans and magnetic resonance imaging in children suffering from malnutrition show images that are compatible with cerebral atrophy. The study concluded that Protein energy malnutrition produces notable morphological changes in the brains of children in developing world. These changes damage the
intellectual potential of those who survive and limit their capacity to become part of the competitive world.

Kar Bhoomika R.B and Chandramouli B., (2008) conducted a study on Cognitive development in children with chronic protein energy malnutrition. The present study examined the effect of stunted growth on the rate of development of cognitive processes using neuropsychological measures. Twenty children identified as malnourished and twenty as adequately nourished in the age groups of 5-7 years and 8-10 years were examined. NIMHANS neuropsychological battery for children sensitive to the effects of brain dysfunction and age related improvement was employed. The battery consisted of tests of motor speed, attention, visuo-spatial ability, executive functions, comprehension and learning and memory. Malnourished children performed poor on tests of attention, working memory, learning and memory and visuo-spatial ability except on the test of motor speed and coordination. Chronic protein energy malnutrition (stunting) affects the ongoing development of higher cognitive processes during childhood years rather than merely showing a generalized cognitive impairment.

Sesso.R., (2004) conducted a cross sectional study to assess the association of malnutrition with increased blood pressure in childhood in Brazil. Blood pressure of 72 children older than 2 years were
assessed. The results showed that a greater percentage of children in the malnourished and recovered groups had increased systolic and diastolic BP after adjusting for age, sex and height, compared to the controls (29, 20 and 2% respectively, p<0.001). Mean diastolic BP, adjusted for age, sex, race, weight, height, and birth order was significantly increased in malnourished and recovered children compared to controls. BP is increased in malnourished children and in those who recovered from malnutrition after an average period of 6 years. Malnutrition occurring during childhood may represent a risk factor for increased BP later in life.

4. INTERVENTIONAL STUDIES RELATED TO MALNUTRITION

Sudha.R., (2008) conducted an experimental study to assess the effectiveness of structured teaching programme on malnutrition to mothers of malnourished under five children in a village at Kancheepuram district, Tamilnadu. The simple random sampling method (lottery method) was adopted in order to select the ICDS centre for selection of samples for experimental and control group. Totally 60 malnourished under five children and their mothers were selected, 30 for each group. The results showed that the prevalence of first degree malnutrition in experimental and control group was 20(66.7%) and 16(53.3%) respectively. Second degree malnutrition was present equally
in both groups [seven(23.3%)]. The prevalence of third degree malnutrition in experimental and control group were three (10%) and seven (23.3%) respectively. Regarding knowledge, in the experimental group, in pre test, four (13.3%) mothers only had adequate knowledge. In post test, 22(73.3%) mothers had adequate knowledge. In the control group, 18(60%) mothers had inadequate knowledge in pre test and 15(50%) mothers had inadequate in post test. The paired T test value was 16.51 and it was significant at P 0.001 level. This revealed that the structured teaching programme had improved the knowledge.

Raffaella colombatti, et.al.,(2008) conducted a multidisciplinary intervention to reduce protein energy malnutrition among children in rural areas was piloted in 3 provinces of the Islamic Republic of Iran. Based on an initial situation analysis, a range of interventions were implemented through local non governmental organizations, including nutrition, health and literacy education for mothers, improved growth monitoring and fostering rural co-operativeness and income generation schemes. Malnutrition before and after intervention were assessed using anthropometric measurements of random samples of children aged 6 - 35 mothers in control and intervention areas. Three years into the intervention, all the indicators of malnutrition had consistently decreased in all intervention areas and the prevalence of under weight and stunting was significantly lower.
Garcia garro A.J, et al., (2007) conducted a survey to assess the impact in the management with soya of 1-4 years old suffering from malnutrition in Mexico. A sample of 83 under nourished children from 1-4 years old was taken and 3 experimental and 3 control groups were formed. They found that the experimental group from 1to 2 years old increased in weight and size by over 80% whilst the weight and size gain in other groups was significant, but not as much as expected.

Sheila Isanaka B.A, et al., (2006) assessed the effect of a 3 month distribution of Ready to use therapeutic foods (RUTF) to malnourished children in a region with traditional high levels of child malnutrition and evaluated the effectiveness of distribution of RUTF delivered at the village rather than the Individual level. Children in six intervention villages received a monthly distribution of 1 packet per day of Ready to use therapeutic foods (500 calories/day) from August to Sep.2006, with 8 months of follow up. The researchers found a significant difference in the rate of change in measurements of wasting over the 8 month surveillance period, with the intervention resulting in a 36% reduction in the incidence of wasting and a 58% reduction in the incidence of severe wasting.

Bhargava, et al., (2006) conducted a nutritional intervention in the package form of medical care, supplementary feeding, and education was offered to 82 severely malnourished children in two
villages of rural Health training centre, Naila Jaipur for 8 months. Normal weight was restored in 6.09 percent of children respective to their age, 18.3% improved to grade I and 40.2 percent to grade II, 25.3% remained refractory. The maximum weight gain was 2.5Kg and 3.02 kg in grade III and grade IV malnourished children respectively. On an average it took 140.5 days for grade III and 180 days for grade IV severely malnourished children to return to road to health with respect to their weight for age.

Banerjee B and Mandal. O., (2005) conducted an intervention study in malnutrition among infants in tribal community of West Bengal. The objective is to study the magnitude of the problem and to assess the impact of nutrition advice given to mothers of infants, on their nutritional status of their children suffering from severe degree of malnutrition. 300 infants selected from the infant register of 6 sub centers by systemic random sampling, the sub centers in turn being selected by simple random sampling using lottery method. For statistical analysis z test of proportion and paired T test was used. The prevalence of malnutrition was 50.67%. Malnutrition was more common in females than males but this was not significant (p>0.05). Grade I malnutrition was more common among males, while grade II and grade III were more in females. None were suffering from grade IV malnutrition. Prevalence also increased with increasing age and it was significantly more (p<0.001) among infants > 6 months of age than
among those <6 months. Post intervention follow up after nutrition education of mothers showed an average increase of 80.81 grams of the weight of their severely malnourished infants, over the expected weight gain. Nutrition education of mothers of infants has a positive effect on the nutritional status of their children.

Rasania S. K, et. al., (2005) conducted a community based intervention study in Jamboni block in Midnapore district of west Bengal, the block mainly consisting of tribal population. 300 Infants were taken as the sample. Out of the 20 subcentres situated in this block, 6 were selected by simple random sampling using lottery method. Prevalence of malnutrition was 50.67%. Malnutrition was observed to be more common among females than male. The prevalence rate of malnutrition among 3-5 months old Infants was lower than that among 0-2 months age group. Though pre and post intervention dietary assessments were made by oral questionnaire method, a definite improvement in the dietary intake of the 13 grade III malnourished infants was observed during the follow up visit made after nutritional advice given to the mothers.

intervention, community nutrition education, child growth monitoring and distributing thiamine to new mothers just before or after delivery. The change in prevalence of underweight children aged 6 – 17 months prior to and after the intervention in infants aged 6 – 11 months and 39.0% before and 26.4% after the intervention in young children aged 12 – 17 months. It is highlighted that population nutritional intervention can produce better results with participation at a community level.
CHAPTER - III

METHODOLOGY

This chapter deals with the methodology adopted for the study. It includes research approach, research design, setting, population, sample, criteria for sample selection, sample size and sampling technique, scoring procedure, pilot study, method of data collection and plan for data analysis.

RESEARCH APPROACH :-

The evaluative research approach was used to assess the effectiveness of Planned teaching programme regarding malnutrition in terms of knowledge and practice among mothers with under five children.

RESEARCH DESIGN :-

The design for this study was pre experimental design i.e., one group pre test and post test design.

Schematic Representation

<table>
<thead>
<tr>
<th>Group I</th>
<th>Pretest</th>
<th>Intervention</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>O₁</td>
<td>X</td>
<td>O₂</td>
</tr>
</tbody>
</table>
The symbol used
Group I- Mothers with under five children

O₁ - Collection of demographic data, assess pretest level of knowledge and Practice scores regarding malnutrition.

X - Implementing Planned teaching programme regarding malnutrition.

O₂ - Assess posttest level of knowledge and Practice scores regarding malnutrition.

SETTING OF THE STUDY :-

The study was conducted in rural area in Ayyampatty which comes under Thuvakudi Municipality at Trichy. The total population of the area is 2550, out of that 102 mothers are having below 5 years old children. The area consists of 7 streets. Most of the people are coolie workers.

POPULATION :-

The Population of the study were mothers with under five children.

SAMPLE :-

The sample of the study was mothers who are residing in Ayyampatty having children with age group of 0-5 years.

CRITERIA FOR SELECTION OF THE SAMPLE :-

Inclusion Criteria :-
• Mothers who are available at the time of data collection.
• Mothers who can understand and speak Tamil.

Exclusion Criteria :-

• Mothers who are sick.
• Mothers who are not willing to participate in the study.
• Mothers who are having sick children.

SAMPLE SIZE :-

The samples selected for the study consists of 60 mothers with under five children.

Sampling technique :-

Purposive sampling technique was used to select the samples for this study.

INSTRUMENT :-

Instrument consists of two parts

PART I :-
It deals with demographic variables such as age, educational status, occupation, family size, type of family, number of under five children, family monthly income, religion of mothers with under five children.

PART II :

It Consists of structured interview schedule to assess the knowledge regarding malnutrition among mothers with under five children which consists of 25 multiple choice questions with four options among which one(1) is the correct response.

PART III

Structured interview schedule to assess the practice regarding malnutrition among mothers with under five children. It consists of 10 dichotomous questions with alternative response of ‘Yes’ or ‘No’.

SCORING PROCEDURE AND SCORE INTERPRETATION :

Part - II

Structured interview schedule was used to assess the knowledge regarding malnutrition among mothers with under five children. It consists of 25 multiple choice questions, each correct answer was given a score of ‘one’ and wrong answer was scored as ‘zero’. The total score on knowledge was 25. The scores were interpreted as below:
Structured interview schedule was used to assess the practice regarding malnutrition. It consists of 15 dichotomous questions, each correct answer was given a score of 'one' and wrong answer was scored as ‘zero’. The total score was 15. The scores were interpreted as below:

<table>
<thead>
<tr>
<th>Level of Practice</th>
<th>Score</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate</td>
<td>10-15</td>
<td>(67-100)</td>
</tr>
<tr>
<td>Moderately adequate</td>
<td>5-10</td>
<td>(34-66)</td>
</tr>
<tr>
<td>Inadequate</td>
<td>0-5</td>
<td>(0-33)</td>
</tr>
</tbody>
</table>

VALIDITY AND RELIABILITY OF THE TOOL :-

Validity :-

The validity of the tool was established in consultation with guide and four experts in the field of child health nursing and one in the field of Pediatric medicine. The tool was modified according to the suggestions and recommendations given by them.

Reliability :-

The reliability of the structured interview schedule on knowledge and practice regarding malnutrition was assessed by testing the
stability and internal consistency. Stability was assessed by test re test method, where Karl Pearson correlation of coefficient formula was used. The value was found to be reliable \((r=0.92)\). Internal consistency was assessed by using split half technique where spearman Brown prophecy formula was used. The value was found to be reliable \((R=0.89)\). Hence the structured interview schedule was found to be reliable.

The reliability of the practice was computed by test-retest method where Karl pearson correlation of co-efficient formula was used and the value was found to be reliable \((r=0.91)\). Internal consistency was assessed by split half method using spearman’s Brown prophecy formula. The value was found to be reliable \((R=0.85)\). Hence the structured dichotomous interview schedule for practice was found to be reliable.

PILOT STUDY :-

The pilot study was conducted on 6 samples for a period of 7 days in Manakadavu, Dharapuram. The samples were selected by using purposive sampling method. On the first day, demographic variables were collected from 6 mothers with under five children and pretest was conducted to assess the knowledge and practice using structured
interview schedule. On the same day after the pre test, group teaching was given regarding malnutrition to the mothers of under five children by using posters for 45 minutes. On the 7th day of teaching, post test was conducted using same structured interview schedule. The data were analyzed and findings of the pilot study showed that mean post test knowledge (14) and practice(11.3) score was higher than the mean pretest knowledge score (7.3) and practice score(7) and found that it is feasible and practicable to conduct the main study.

PROCEDURE FOR DATA COLLECTION :-

The study was conducted at Ayyampatty which is rural area of Thuvakudi. The written permission was obtained from president of Thuvakudi Municipality. The data was collected for the period of 5 weeks. Oral consent was obtained from each participant. Per day 4-5 mothers with under five children were interviewed by the investigator. The investigator maintained good rapport, collected demographic data and conducted pretest by using structured interview schedule for 45 minutes for each sample to assess the knowledge and practice of mothers with under five children. On the same day, the planned teaching programme was given to 4-5 mothers for 45 minutes regarding malnutrition by using posters in a common place. On the seventh day, post test was done using the same structured interview schedule to
assess the knowledge and practice of mothers with under five children after planned teaching programme. The same procedure was continued to obtain data from 60 samples.

**PLAN FOR DATA ANALYSIS :-**

The collected data were tabulated and analyzed by using descriptive and inferential statistical methods.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Data Analysis</th>
<th>Methods</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Descriptive</td>
<td>Frequency percentage</td>
<td>To describe the demographic variables of mothers of under five children.</td>
</tr>
<tr>
<td></td>
<td>statistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Inferential</td>
<td>Paired ('t' test)</td>
<td>To compare the pretest and posttest level of knowledge and practice scores within the group.</td>
</tr>
<tr>
<td></td>
<td>statistics</td>
<td>Karl Pearson correlation</td>
<td>To correlate posttest knowledge and practice scores regarding malnutrition.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chi - square test</td>
<td>To find out the association between post test knowledge scores regarding malnutrition among mothers with under five children with their selected demographic variables</td>
</tr>
</tbody>
</table>

**PROTECTION OF HUMAN SUBJECT :-**

The study was conducted after the approval of Dissertation Committee. The written consent was obtained from the President of Thuvakudi. Oral consent of each subject was obtained before starting
the data collection. Assurance was given to them that confidentiality will be maintained.
CHAPTER - IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the description of sample characteristics, analysis and interpretation of the data collected from mothers with under five children in Ayyampatty village, Trichy.

The present study was designed to assess the effectiveness of Planned teaching programme regarding malnutrition in terms of knowledge and practice among mothers with under five children.

The collected data were calculated, analysed using descriptive and inferential statistics and interpreted as per the objectives of the study, under the following headings.

ORGANIZATION OF THE DATA:-

The data has been tabulated and organized as follows:

Section - A : Distribution of demographic variables.

Section - B : Comparison between pretest and post test knowledge scores regarding malnutrition among mothers with under five children.
Section – C: Comparison between pretest and posttest practice scores regarding malnutrition among mothers with under five children.

Section - D: Correlation between posttest knowledge and practice scores regarding malnutrition among mothers with under five children.

Section - E: Association between posttest knowledge score of mothers with their selected demographic variables.
SECTION -A : Distribution of demographic variables.

Table: 1 - Frequency and percentage distribution of demographic variables among mothers with under five children.

n=60

<table>
<thead>
<tr>
<th>S. NO</th>
<th>Demographic Variables</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>AGE OF MOTHER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Below 25 years</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>36</td>
<td>60</td>
</tr>
<tr>
<td>1.2</td>
<td>26 – 30 years</td>
<td>8</td>
<td>13.3</td>
</tr>
<tr>
<td>1.3</td>
<td>31– 35 years</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1.4</td>
<td>Above 36 years</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td><strong>EDUCATIONAL STATUS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>No formal education</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2.2</td>
<td>Primary Education</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td>2.3</td>
<td>High school</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>2.4</td>
<td>Higher secondary</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td>2.5</td>
<td>Graduate</td>
<td>8</td>
<td>13.3</td>
</tr>
<tr>
<td></td>
<td>OCCUPATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------------------------</td>
<td>---</td>
<td>-----</td>
</tr>
<tr>
<td>3</td>
<td>House wife</td>
<td>49</td>
<td>81.7</td>
</tr>
<tr>
<td>3.1</td>
<td>Coolie</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3.2</td>
<td>Self employed</td>
<td>2</td>
<td>3.3</td>
</tr>
<tr>
<td>3.3</td>
<td>Private employee</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3.4</td>
<td>Government Employee</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>FAMILY SIZE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>(TOTAL FAMILY MEMBERS)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1.1</td>
<td>3 members</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td>4.1.2</td>
<td>4 members</td>
<td>29</td>
<td>48.3</td>
</tr>
<tr>
<td>4.1.3</td>
<td>5 members</td>
<td>10</td>
<td>16.7</td>
</tr>
<tr>
<td>4.1.4</td>
<td>6 &amp; above</td>
<td>5</td>
<td>8.3</td>
</tr>
<tr>
<td>4.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>TYPE OF FAMILY</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>Nuclear Family</td>
<td>48</td>
<td>80</td>
</tr>
<tr>
<td>5.2</td>
<td>Joint Family</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>6</td>
<td>NUMBER OF UNDER FIVE CHILDREN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.1</td>
<td>Children 1</td>
<td>33</td>
<td>55</td>
</tr>
<tr>
<td>6.2</td>
<td>Children 2</td>
<td>23</td>
<td>38.3</td>
</tr>
<tr>
<td>6.3</td>
<td>3 and above</td>
<td>4</td>
<td>6.7</td>
</tr>
</tbody>
</table>
The table 1 shows that distribution demographic variables.

The mothers of under five children who belonged to the age group of below 25 years were 16(26.7%), majority of the mothers with under five children 36(60%) were in the age group of 26 – 30 years, 31 – 35 years of mothers with under five children were 8(13.3%). No mothers were in the age group of above 36 year.( Fig-1)
There were 6(10%) mothers with under five children were illiterate, 16(26.7%) of the mothers with under five children were studied primary education, 15(25%) of the mothers with under five children were studied high school and 15(25%) of mothers with under five children studied higher secondary. Very few 8(13.3%) mothers with under five children were graduate.(Fig-2)

According to their occupation, the data showed that the most 49(81.7%) of the mothers with under five children were house wife, 3(5%) of the mothers with under five children were coolies, 2(3.3%) of the mothers with under five children were self employees, 3(5%) of the mothers with under five children were private employees and 3(5%) of mothers with under five children were government employees. (Fig-3)

With regard to family size, the data showed that 16(26.7%) of the mothers with under five children had three members in the family, 29(48.3%) of the mothers with under five children had four members in her family, 10(16.7%) of the mothers with under five children had five members in her family, 5(8.3%) of mothers with under five children had more than six members in her family. (Fig-4)
Regarding to the type of family, majority of 48(80%) the mothers with under five children belonged to nuclear family where as 12(20%) of the mothers with under five children belonged to joint family. (Fig-5)

According to number of under five children, there were 33(55%) of mothers were having one under five children, 23(38.3%) of mothers were having two under five children, only 4(6.7%) of mothers were having three and more than three under five children. (Fig-6)

According to family monthly income, the data showed that 8(13.4%) of mothers with under five children were having the monthly income of Rs.1000-2000, 24(40%) of mothers with under five children were having the monthly income of Rs.2000-4000, 11(18.3%) of mothers with under five children were having the monthly income of Rs.4000-6000, 17(28.3%) of mothers with under five children were having the monthly income of above Rs.6000. (Fig-7)

With regard to religion, the highest number 48(80%) of mothers with under five children were Hindus, 8(13.3%) of mothers with under five children were Christians, decrease in number of 4(6.7%) of the mothers with under five children were Muslims and none of them belonged to other religion. (Fig-8)
Fig 2 - Percentage distribution of mothers with under-five children according to their age.
Fig 3 - Percentage distribution of mothers with under five children according to their education.
Fig 4 - Percentage distribution of mothers with under five children according to their occupation.
Fig 5 - Percentage distribution of mothers with under five children according to their family size.
Fig 6 - Percentage distribution of mothers with under five children according to their type of family.

<table>
<thead>
<tr>
<th>TYPE OF FAMILY</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear Family</td>
<td>20%</td>
</tr>
<tr>
<td>Joint Family</td>
<td>80%</td>
</tr>
</tbody>
</table>
Fig 7 - Percentage distribution of mothers with under five children according to number of under five children.
Fig 8 - Percentage distribution of mothers with under five children according to family monthly income.
Fig 9 - Percentage distribution of mothers with under five children according to their religion.
SECTION - B: Comparison between pre and post test knowledge scores regarding malnutrition among mothers with under five children.

Table 2: Comparison between pre and post test knowledge scores regarding malnutrition among mothers with under five children.

<table>
<thead>
<tr>
<th>Level of knowledge</th>
<th>Pretest</th>
<th>Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Adequate</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Moderately adequate</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>Inadequate</td>
<td>48</td>
<td>80</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

The Table 2 showed that in pretest among 60 mothers 12 (20%) of the mothers had Moderately adequate knowledge, 48 (80%) of the mothers had inadequate knowledge regarding malnutrition.

In posttest among 60 mothers majority 38 (63.4%) of the mothers had adequate knowledge and 22 (36.6%) of the mothers had moderately adequate knowledge regarding malnutrition.
Fig 10 - Percentage wise comparison of pre and posttest knowledge scores among mothers with under five children.
Section - C: Comparison between pretest and post test practice scores regarding malnutrition among mothers with under five children.

Table: 3  Comparison between pre and post test practice scores of mothers regarding malnutrition among mothers with under five children.

<table>
<thead>
<tr>
<th>Level of practice</th>
<th>Pretest</th>
<th>Post test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>Adequate</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Moderately adequate</td>
<td>19</td>
<td>31.7</td>
</tr>
<tr>
<td>Inadequate</td>
<td>40</td>
<td>66.7</td>
</tr>
<tr>
<td>Total</td>
<td>60</td>
<td>100</td>
</tr>
</tbody>
</table>

The Table 3 showed that in pretest among 60 mothers only one mother (1.6%) had adequate practice, 19 (31.7%) of the mothers had Moderately adequate practice, 40(66.7%) of the mothers had inadequate practice regarding malnutrition.

In posttest among 60 mothers majority 36 (60%) of the mothers had adequate practice and 23(38.4%) of the mothers had moderately adequate practice and 1(1.6%) of the mothers had inadequate knowledge regarding malnutrition.
Fig 11 - Percentage wise comparison of pre and posttest practice scores among mothers with under five children.
Table 4: Comparison of mean, Standard deviation and paired ‘t’ value of pre and posttest knowledge scores regarding malnutrition among mothers with under five children.

\[ n = 60 \]

<table>
<thead>
<tr>
<th>SI.No.</th>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>‘t’ value</th>
<th>Table value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pre test</td>
<td>6.5</td>
<td>2.41</td>
<td>21.74</td>
<td>1.671</td>
</tr>
<tr>
<td>2.</td>
<td>Post test</td>
<td>15.78</td>
<td>3.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\[ df=59 \quad (P<0.05) \]

The table 4 showed that the mean pretest and posttest knowledge scores regarding malnutrition were 6.5 (SD+2.41) and 15.78(SD+3.74) respectively. The posttest mean knowledge scores were higher than the pretest mean knowledge scores. The ‘t’ value is 21.74, which was significant at 0.05 level.
Table-5 Comparison of mean, Standard deviation and paired ‘t’ test value of pre and posttest practice scores regarding malnutrition among mothers with under five children.

\[ n=60 \]

\[ \text{df}=59 \quad (P<0.05) \]

The table 5 showed that mean pretest and posttest practice scores regarding malnutrition were 5.5 (SD+2.41) and 10.93(SD +2.6) respectively. The posttest mean practice scores were higher than the pretest mean practice scores. The ‘t’ value is 21.6, which was significant at 0.05 levels.
Section - D: Correlation between posttest knowledge and Practice scores regarding malnutrition among mothers with under five children.

Table : 6 Correlation between the mean posttest knowledge and practice scores regarding malnutrition among mothers with under five children.

Table 6 showed that there was positive correlation \( r = 0.93 \) between mean posttest knowledge and practice scores of mothers with under five children.
Section - E: Association between posttest knowledge scores with their selected demographic variables regarding malnutrition among mothers with under five children.

Table : 7 Association between posttest knowledge scores with their selected demographic variables regarding malnutrition among mothers with under five children.

<table>
<thead>
<tr>
<th>S.No</th>
<th>Demographic variables</th>
<th>Level of knowledge</th>
<th>$\chi^2$</th>
<th>Table value</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Adequate</td>
<td>Moderately adequate</td>
<td>Inadequate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
<td>%</td>
</tr>
<tr>
<td>1.</td>
<td>Age of mother</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Below 25 years</td>
<td>12</td>
<td>20</td>
<td>4</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>26 - 30 years</td>
<td>20</td>
<td>33.3</td>
<td>16</td>
<td>26.7</td>
</tr>
<tr>
<td></td>
<td>31- 35 years</td>
<td>5</td>
<td>8.3</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Above 36 years</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2. EDUCATIONAL STATUS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>No formal education</td>
<td>1</td>
<td>1.6</td>
<td>5</td>
<td>8.4</td>
<td>-</td>
</tr>
<tr>
<td>Primary education</td>
<td>4</td>
<td>6.7</td>
<td>12</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>High school</td>
<td>10</td>
<td>16.6</td>
<td>5</td>
<td>8.4</td>
<td>-</td>
</tr>
<tr>
<td>Higher secondary</td>
<td>15</td>
<td>25</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Graduate</td>
<td>8</td>
<td>13.3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. OCCUPATION</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Home maker</td>
<td>31</td>
<td>51.6</td>
<td>18</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Coolie</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Self employed</td>
<td>1</td>
<td>1.6</td>
<td>1</td>
<td>1.6</td>
<td>-</td>
<td>-</td>
<td>33.6</td>
<td>3.841</td>
</tr>
<tr>
<td>Private employee</td>
<td>2</td>
<td>3.4</td>
<td>1</td>
<td>1.6</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Government employee</td>
<td>1</td>
<td>1.6</td>
<td>2</td>
<td>3.4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Family size(total family members)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3 members</td>
<td>12</td>
<td>20</td>
<td>4</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
<td>1.22</td>
<td>3.841</td>
</tr>
<tr>
<td>4 members</td>
<td>20</td>
<td>33.4</td>
<td>9</td>
<td>15</td>
<td>-</td>
<td>-</td>
<td>NS</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>6.6</td>
<td>6</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5 members</td>
<td>2</td>
<td>3.3</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 6</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear family</td>
<td>30</td>
<td>50</td>
<td>18</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>0.071</td>
<td>3.841</td>
</tr>
<tr>
<td>Joint family</td>
<td>8</td>
<td>13.4</td>
<td>30</td>
<td>6.6</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Number of under five children</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 child</td>
<td>23</td>
<td>38.4</td>
<td>10</td>
<td>16.6</td>
<td>-</td>
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<tr>
<td>2 children</td>
<td>13</td>
<td>21.8</td>
<td>10</td>
<td>16.6</td>
<td>-</td>
<td>-</td>
<td>1.26</td>
<td>3.841</td>
</tr>
<tr>
<td>3 and above</td>
<td>2</td>
<td>3.3</td>
<td>2</td>
<td>3.3</td>
<td>-</td>
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</tr>
<tr>
<td>7 Family monthly income (in rupees)</td>
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<tr>
<td>1000-2000</td>
<td>4</td>
<td>6.7</td>
<td>4</td>
<td>6.7</td>
<td>-</td>
<td>-</td>
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<tr>
<td>2000-4000</td>
<td>17</td>
<td>28.3</td>
<td>7</td>
<td>11.6</td>
<td>-</td>
<td>-</td>
<td>14.91</td>
<td>3.841</td>
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<tr>
<td>4000-6000</td>
<td>6</td>
<td>10</td>
<td>5</td>
<td>8.4</td>
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<tr>
<td>Above 6000</td>
<td>11</td>
<td>18.3</td>
<td>6</td>
<td>10</td>
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<td>8 Religion</td>
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<tr>
<td>Hindu</td>
<td>30</td>
<td>50</td>
<td>18</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>Christian</td>
<td>5</td>
<td>8.3</td>
<td>3</td>
<td>5</td>
<td>-</td>
<td>-</td>
<td>0.071</td>
<td>3.841</td>
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<tr>
<td>Muslim</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>1.7</td>
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</tr>
</tbody>
</table>
Chi-square values were calculated to find out the association (table 7) knowledge of mothers with their demographic variables such as age, education, occupation, family size, type of family, number of under five children, family monthly income and religion regarding malnutrition.

The demographic variables educational status, occupation, family income was associated with knowledge of mothers with under five children. Other demographic variables such as age, family size, type of family, number of under five children, religion had no association with knowledge regarding malnutrition.
CHAPTER – V

DISCUSSION

The discussion chapter deals with sample characteristics and objectives of the study. The aim of this present study was to evaluate the effectiveness of planned teaching programme regarding malnutrition among mothers with under five children in Ayyampatty at Trichy district.

Description of sample characteristics

Distribution of mothers of under five children according to their demographic variables showed that 16(26.7%) of mothers were below 25 years, 36(60%) of mothers were in the age group of 26-30 years, 8(13.3%) of mothers were in the age group of 31-35 years and no mothers were in the age group of above 36 years. According to their educational status, 6(10%) were illiterate, 16(26.7%) were studied primary education, 15(25%) were studied high school, 15(25%) were studied higher secondary education, 8(13.3%) were graduates. With
regard to their occupation, 49(81.7%) were house wives, 3(5%) were coolies, 2(3.3%) were self employed, 3(5%) were private employees, 3(5%) were government employees. According to their family size, 16(26.7%) were having 3 members in the family, 29(48.3%) were having 4 members in the family, 10(16.7%) were having 5 members in the family, 5(8.3%) were having above 6 members in the family. Regarding their type of family 48(80%) were belonged to nuclear family, 12(20%) were belonged to joint family type. According to the number of under five children, 33(55%) were having 1 child, 23(38.3%) were having 2 children, 4(6.7%) were having 3 and above 3 children. According to their family monthly income 8(13.4%) were having monthly income of Rs.1000-2000, 24(40%) were having family income of Rs.2000-4000, 11(18.3%) were having monthly income of Rs.4000-6000, 17(28.3%) were having the monthly income of above Rs.6000. With regard to their religion 48(80%) were Hindus, 8(13.3%) were Christians, 4(6.7%) were Muslims.

The findings of the study were discussed according to the objectives as follows.
1. To assess the pretest knowledge and practice scores regarding malnutrition among mothers with under five children.

2. To assess the posttest knowledge and practice scores regarding malnutrition among mothers with under five children.

3. To compare pretest and post test knowledge scores regarding malnutrition among mothers with under five children.

4. To compare pretest and post test practice scores regarding malnutrition among mothers with under five children.

5. To correlate posttest knowledge and practice scores regarding malnutrition among mothers with under five children.

6. To find association between the post test knowledge scores with their selected demographic variables.

First objective: To assess the pretest knowledge and practice scores regarding malnutrition among mothers with under five children.

Pretest knowledge regarding malnutrition among mothers with under five children were assessed, 48(80%) mothers had inadequate knowledge, 12(20%) had moderately adequate knowledge.

Pretest practice regarding malnutrition among mothers with under five children were assessed, 40(66.6%) had inadequate
practice, 19 (31.7%) had moderately adequate practice and only one (1.6%) had adequate practice.

The findings of the study was consistent with the study findings of Mrs. R. Sudha (2008) to assess the effectiveness of Structured teaching programme on malnutrition to mothers of malnourished under five children in a village at Kancheepuram district, Tamilnadu stated that regarding knowledge, among 30 mothers, 4 (13.3%) mothers only had adequate knowledge in pre test.

**Second objective: To assess the posttest knowledge and practice scores regarding malnutrition among mothers with under five children.**

Post test knowledge regarding malnutrition among mothers with under five children were assessed, 38 (63.4%) had adequate knowledge, 22 (36.6%) had moderately adequate knowledge.

Post test practice regarding malnutrition among mothers with under five children were assessed, 36 (60%) had adequate practice, 23 (38.4%) had moderately adequate practice.

The findings of the study was consistent with the study findings Mrs. R. Sudha (2008) to assess the effectiveness of Structured teaching
programme on malnutrition to mothers of malnourished under five children in a village at Kancheepuram district, Tamilnadu stated that regarding knowledge, among 30 mothers 22(73.3%) mothers had adequate knowledge in the post test.

**Third objective: To compare pretest and post test knowledge scores regarding malnutrition among mothers with under five children.**

Table 4 revealed that the mean pretest knowledge score of mothers with under five children was 6.5(SD± 2.41) and the mean post test knowledge score of mothers with under five children was 15.78(SD±3.74). The mean post test knowledge score was higher than the mean pre test knowledge score. It is highly significant at p<0.05 level. Hence H1 – The mean post test knowledge score is significantly higher than the mean pre test knowledge score was accepted.

The study was consistent with the study findings by Mrs. R.Sudha (2008) stated that regarding knowledge, in pre test, 4 (13.3%) mothers only had adequate knowledge and in post test, 22(73.3%) mothers had adequate knowledge. The paired T test value was 16.51 and it was significant at P 0.001 level. This revealed that the structured teaching programme had improved the knowledge.
Fourth objective: To compare pretest and post test practice scores regarding malnutrition among mothers with under five children.

Table 5 revealed that the mean pre test practice score of mothers with under five children was 5.5(SD +2.41) and the mean post test practice of mothers with under five children was 10.93(SD+2.6). The mean post test practice score was higher than the mean pre test practice score. It is highly significant at p<0.05 level. Hence the hypothesis H2-The mean post test practice score is significantly higher than the mean pre test practice score was accepted.

The findings of the study was consistent with the study findings of Banerjee. B. et al., (2005) to assess the magnitude of the problem and to assess the impact of nutrition advice given to mothers of infants, on their nutritional status of their children suffering from severe degree of malnutrition stated that, prevalence of malnutrition was 50 - 67% among the infants malnutrition was more common in females than males but this was not significant (p>0.05).Post intervention follow up after nutrition education of mothers showed an average increase of 80 - 81 grams of the weight of their severely malnourished infants, over the expected weight gain. The study concluded that nutrition education of
mothers of infants has a positive effect on the nutritional status of their education.

**Fifth objective:** To correlate posttest knowledge and practice scores regarding malnutrition among mothers with under five children.

There was positive correlation ($r=0.93$) between mean posttest knowledge and practice scores regarding malnutrition among mothers with under five children (table 6). Further it could be informed that knowledge and practice depends on each other. The reason might be when the knowledge is improving, practice also will improve. Hence $H_3$ - there will be a significant correlation between the posttest knowledge score and practice score was accepted.

**Sixth objective:** To find association between the post test knowledge scores with their selected demographic variables.

Chi-square values were calculated to find out the association (table 7) between the knowledge of mothers of under five children with their age, education, occupation, family size, type of family, number of under five children, Family monthly income and Religion.
The demographic variables educational status, occupation, family income showed statistically significant association with knowledge of mothers (table 7) at p<0.05 level. The reason might be that education helped them to gain more knowledge regarding malnutrition. Other demographic variables (age, family size, type of family, number of under five children, and Religion) had no association with knowledge regarding malnutrition.

The findings of the study was consistent with the study findings of Mrs. R.Sudha (2008) to assess the effectiveness of Structured teaching programme on Malnutrition to mothers of malnourished under five children in a village at Kancheepuram district, Tamilnadu revealed that there was highly significant association between the educational status of mother and knowledge at P 0.01 level. There was also a statistically significant association between family income and knowledge at P0.05 level. There was no association found between knowledge and other variables like age of the mother, family size and age of the child, sex of the child, occupation and religion.
CHAPTER – VI

SUMMARY, CONCLUSION, IMPLICATION, RECOMMENDATION AND LIMITATION

SUMMARY OF THE STUDY:-

The study was done to assess the effectiveness of Planned teaching programme regarding malnutrition in terms of knowledge and practice among mothers with under five children. The research design used for the study was pre experimental design. The research approach used for the study was evaluative approach which was conducted in Ayyampatty at Trichy. The conceptual framework was based on the Ludwig Vonbertlanffy system theory(1968) model. A sample of 60 mothers with under five children who met the inclusion criteria were selected for the study using purposive sampling technique. Pre test was conducted using structured interview schedule to assess the knowledge and practice of mothers with under five children. Immediately after the pretest, group teaching was given to the mothers for 45 minutes using posters in a common place. On the 7th day, post test was conducted using same structured interview schedule. The data were analyzed using descriptive and inferential statistics.
MAJOR FINDINGS OF THE STUDY :-

- Most of the mothers with under five children (60%) were in the age group of 26-30 years.
- Highest percentage of mothers with under five children (26.7%) had studied primary education.
- Most of the mothers with under five children (81.7%) were housewives.
- Highest percentage (48.3%) of the mothers with under five children had 4 members in their family.
- Highest percentage (80%) of the mothers with under five children belong to Nuclear family.
- Highest percentage (55%) of mothers with under five children were having one under five child.
- Highest percentage (40%) of mothers with under five children were having their family income of Rs. 2000-4000.
- Most of the mothers with under five children (80%) were Hindus.
During pretest most (80%) of the mothers with under five children had inadequate knowledge and (20%) of the mothers with under five children had moderately adequate knowledge where as in posttest (63.4%) of the mothers had adequate knowledge and (36.6%) of the mothers had moderately adequate knowledge regarding malnutrition.

During pretest (66.7%) of the mothers of under five children had inadequate practice and (31.7%) of the mothers had moderately adequate practice, Where as in posttest most (60%) of the mothers had adequate practice and (38.4%) of the mothers had moderately adequate practice and (1.6%) of the mothers had inadequate practice regarding malnutrition. Highly significant relationship was found between pretest and posttest knowledge and practice scores (p<0.05).

Significant association was found between posttest knowledge score of mothers with under five children with education, occupation, family income.

The study revealed that the knowledge and practice score using Structured interview schedule regarding malnutrition was highly
significant after administration of Planned teaching programme. Findings showed that the Planned teaching programme was effective in increasing the knowledge and practice among mothers of under five children regarding malnutrition. Thus planned teaching programme played an important role in improving the knowledge and practice of mothers with under five children.

**CONCLUSION :-**

Based on the findings of the study the following conclusions were drawn. The study showed that the Planned teaching programme was effective in increasing the knowledge and practice regarding malnutrition among mothers with under five children. The 't' value(21.74) for knowledge and 't' value(21.6) for practice was significant at ( p< 0.05) level. Thus planned teaching programme played an important role in improving the knowledge and practice of mothers with under five children.

**IMPLICATIONS FOR NURSING :-**

**Nursing Service :-**
1. Nurses working in the community and Hospitals play a vital role in identifying malnutrition in children.

2. They can teach the mothers about the normal nutrition and domicillary management of malnutrition.

3. They can conduct regular meeting for mothers to impart knowledge about normal nutrition and its influence on Growth and development of children.

4. In the Hospital, Nutrition Education centers can be established which can teach, guide the people in selection and preparation of food items, which are locally available and also demonstrate the preparation of low cost high calorie food items.

Nursing Education :-

1. Malnutrition should be given focus in Nursing education. The students are given opportunity to identify malnourished children and conduct health education programme using role play, puppet shows.

2. They are encouraged to do cooking demonstration of preparation of low cost high calorie, high protein diet in the community set up.
3. In Hospitals, certain out patient department like pediatric OPD, Maternity OPD, the students can utilize to teach the mothers about normal nutrition.

**Nursing Administration :-**

1. Nurse administrators has the responsibility to increase the Nurses knowledge in early identification and management of malnutrition in children. She can organize in-service education programs. She has the responsibility to establish Nutrition education and demonstration centre in Hospitals.

2. She also has the responsibility to utilize research findings related to malnutrition. She would conduct regular meetings or workshops for staff nurses to make them aware of latest research finding related to malnutrition and encourage them to implement program based new data in day to day practice.

**Nursing Research :-**

1. The essence of research is to build up a body of knowledge in Nursing as an evolving profession. This study can be effectively utilized by the emerging researchers.

2. This study can be baseline for further studies to build upon.
RECOMMENDATIONS :-

1. Comparative study can be conducted in rural and urban areas. 2. Similar study can be conducted in different social settings.

3. This similar study can be replicated on large sample there by findings can be generalized for a large population.

LIMITATIONS :-

It was more time consuming to explain the mothers because of difference in their understanding.
REFERENCES

Book references


   Bangalore: Ahuja Publishing house, 546-548.


   Hyderabad: Paras Medical Publisher, 203-209.


   Noida: Gopsons papers ltd, 376-379.


Journal references


Net References

53. www.ifpri.org

54. Soniagpuri@yahoo.com

55. http://emedicine.medcape.com/article/-overview


61. http://www.solutionexchange-un.net.in/health/comm

62. Solomonus@yahoo.com

63. http://www.indianjmedsci.org/text
PLANNED TEACHING PROGRAMME

Topic : Malnutrition
Group : Mothers with under five children
Place : Ayyampatty
Duration : 45 Minuets
Mother of teaching : Lecture cum discussion
Teacher aid : Posters
Medium of Instruction : Tamil

Central objective:

At the end of the teaching, mothers with under five children will gain knowledge and understanding on malnutrition and develop desirable attitude and skill to apply this knowledge in their day to day life.
Specific objective

Mother will be able to

- define malnutrition
- list out the contributing factors of malnutrition
- define protein energy malnutrition
- enlist the types of PEM
- list down the etiology of PEM
- define kwashiorkor
- describe the causes of kwashiorkor
- enumerate the clinical features of kwashiorkor
- enunciate the management of kwashiorkor
- list down the protein rich foods
- define marasmus
- elaborate the causes of marasmus
- describe the management of marasmus
- list the calorie rich foods
- explain the preventive measures of malnutrition
Specific Objectives | Content | AV Aids | Teacher-Learners activity
--- | --- | --- | ---
define malnutrition | **Introduction:**
Malnutrition is a major pediatric problem and it is responsible for high rates of Mortality and Morbidity. In a vast majority of children, mild to moderate malnutrition remains undetected due to lack of awareness on the part of all concerned, medical and paramedical personnel and parents.

**Definition:**
Malnutrition is defined as the physical state resulting from inadequate food intake for longer periods of time. Malnutrition in early childhood has serious, long term consequences because it impedes motor, sensory, cognitive, social and emotional development.

**Contributing factors for Malnutrition:**
- Household food insecurity
- Intra household food distribution
- Imbalanced Diet | posters | Lecture cum discussion

list out the contributing factors for malnutrition
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
</table>
| define Protein energy malnutrition | - Gender inequalities  
- Inadequate health services  
- Lack of access to education for Women  
- Insufficient knowledge of good nutrition, proper care and Infant feeding practices  
- Inadequate care of women and girls especially during pregnancy, result in low birth weight babies. |         | Lecture cum discussion     |
<p>| <strong>Protein Energy Malnutrition:</strong> | Protein energy malnutrition develops in children whose consumption of protein and energy is insufficient to satisfy body’s nutritional needs. |         |                             |
| <strong>Prevalence of PEM:</strong> | PEM is the most widely prevalent form of malnutrition among children Under 5 years of age. PEM affects every fourth child worldwide. |         |                             |</p>
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
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</thead>
</table>
| enlist the types of PEM | **Main types of PEM:**  
  - Kwashiorkor  
  - Marasmus  
  - Marasmic kwashiorkor  

**Etiology of Protein Energy Malnutrition:**  
**Primary PEM:**  
  - Maternal malnutrition during pregnancy and lactation  
  - Social conditions such as poverty to a limited or selective unavailability of food  

**Secondary causes:**  
  - Impair food intake, absorption or utilization  
  - Increase energy or protein requirements or losses  
  - Biological conditions interfere with food intake such as  
    - Congenital anomalies  |

Lecture cum discussion
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<th>Specific Objectives</th>
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<th>AV Aids</th>
<th>Teacher-Learners activity</th>
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<tbody>
<tr>
<td></td>
<td>- Mal absorption Syndrome</td>
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<td>Lecture cum discussion</td>
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<td></td>
<td>- Inherited Metabolic diseases</td>
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<td></td>
<td>- Infectious diseases accompanied by fever and other diseases like Tuberculosis</td>
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<td></td>
<td>- Immature immune system causing greater susceptibility to infection</td>
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<td></td>
<td>- Intestinal parasitism</td>
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<td></td>
<td>- Social causes that affect food intake include</td>
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<td></td>
<td>- Poverty</td>
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<td></td>
<td>- Ignorance</td>
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<td>- Inadequate weaning practices</td>
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<td></td>
<td>- Child abuse</td>
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<td>- Poor hygiene</td>
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<td>Specific Objectives</td>
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<td>AV Aids</td>
<td>Teacher-Learners activity</td>
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</tbody>
</table>
| define kwashiorkor  | **Kwashiorkor**  
**Definition:**  
Kwashiorkor is a form characterized primarily by protein deficiency with adequate carbohydrate consumption.  
In India, it develops mainly to the children between three and five years of age.  
**Causes:**  
- Non availability of suitable protein rich foods  
- Poor socio economic status  
- Faulty feeding habits arise from ignorance, Prejudices and superstitions  
- Prolonged breast feeding only  
- Infections and infestations | ![Image](image1.jpg)  
![Image](image2.jpg)  
![Image](image3.jpg) | Lecture cum discussion |
### Specific Objectives

**Enumerate the clinical features of kwashiorkor**

<table>
<thead>
<tr>
<th>Content</th>
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<tbody>
<tr>
<td>Diarrhea and decreased intake and poor digestion of food</td>
</tr>
<tr>
<td>✔ Vomitting</td>
</tr>
<tr>
<td>✔ Size of the family (more than 4 or 5 children)</td>
</tr>
</tbody>
</table>

**Clinical features:**

- Edema of dependent parts. It starts in the lower extremities and later involves upper limbs and face
- Failure to thrive
- Moon facies
- A swollen abdomen (pot belly)
- Fatty liver
- Mental changes like lethargy, irritable, apathetic to external stimuli
- Marked retarded growth
- Growth failure and hair changes

**AV Aids**

- Lecture cum discussion
<table>
<thead>
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<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
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</thead>
<tbody>
<tr>
<td>De pigmentation of hair causes it to be reddish yellow to white. Curly hair becomes straightened, alternating bands of pale and dark hair called ‘flag sign’. Hairs become dry, lusterless, sparse, brittle easily pluckable.</td>
<td>![Image of hair changes]</td>
<td>![Image of skin changes]</td>
<td>Lecture cum discussion</td>
</tr>
<tr>
<td>▪ Skin lesions like erythema, dryness, deep ulcerations, petechiae, eccymoses like enamel pain skin.</td>
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<tr>
<td>▪ Skin becomes inelastic mosaic in appearance.</td>
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<tr>
<td>▪ Recurrent episodes of Diarrhea, respiratory and skin infection</td>
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</tr>
<tr>
<td>▪ Poor appetite</td>
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<td>▪ Nail plates are thin and soft, may be fissured or ridged.</td>
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<tr>
<td>▪ Atrophy of the papillae on the tongue angular stomatitis, Xerophthalmia, cheilosis can occur</td>
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<tr>
<td>Content</td>
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<tr>
<td><strong>Grading of Kwashiorkor:</strong></td>
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<tr>
<td>Grade – I: Pedal edema</td>
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<td></td>
</tr>
<tr>
<td>Grade – II: Pedal edema and puffy face</td>
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<tr>
<td>Grade – III: Grade II + edema of the chest and Para nasal areas</td>
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<tr>
<td>Grade IV: Grade III + ascites</td>
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</tbody>
</table>

**Management:**
- Liberal amounts of protein must be offered to these protein-depleted children
- Enough CHO and fat must also be supplied to take care of their calorie needs. Otherwise protein is liable to be used up for energy production instead of being available for tissue repair
- Protein intake of 4.0g/ Kg body weight is optimal. Higher protein intake of 5 – 6 gm/ Kg is needed in presence of infection.

**AV Aids**

**Teacher-Learners activity**

Lecture cum discussion
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
</table>
| list down the protein rich foods | ▪ Calories 120 – 150 cal/ Kg/ day is optimal  
▪ Control of infections is necessary  
  Diarrhea is controlled by fluid therapy and dietary management.  
  Appropriate drugs must be given to treat infection.  
  **Dietary Management:**  
  **Protein rich foods:**  
  ▪ Cereals, Rice, Ragi  
  ▪ Pulses and legumes such as Bengal gram, Red gram, green gram, horse gram.  
  ▪ Milk and Milk products especially cheese  
  ▪ Germinated pulses  
  ▪ Egg  
  ▪ Nuts and oil seeds such as cashew nut, gingelly seeds, coconut, ground nuts  
  fish and meat especially liver | ![AV Aids Image] | Lecture cum discussion |


<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
</table>
| Define marasmus     | **Marasmus**  
  **Definition:**  
  Marasmus is an insufficient energy intake to match the body’s requirements. Mostly it occurs in younger age of 0 – 2 years.  
  **Causes:**  
  **Primary causes:**  
  - Inadequate diet  
  - Infections such as gastro-enteritis  
  - Poor socio economic status  
  - Parents lack of education  
  **Secondary Causes:**  
  **Age:**  
  - More common in infants than older children. Premature infant and low birth weight babies are more prone. | Lecture cum discussion |
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chronic Vomiting:</strong></td>
<td>It leads to muscle wasting</td>
<td><img src="image1.png" alt="Image" /></td>
<td>Lecture cum discussion</td>
</tr>
<tr>
<td><strong>Repeated episodes of Chronic Diarrhea:</strong></td>
<td>It leads to loss of weight</td>
<td><img src="image2.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td><strong>Chronic Infections:</strong></td>
<td>Congenital syphilis, Tuberculosis, Upper respiratory infections</td>
<td><img src="image3.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td><strong>Congenital diseases:</strong></td>
<td>Like Cleft palate, Hydrocephalus</td>
<td><img src="image4.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td><strong>Clinical features:</strong></td>
<td>Complete loss of subcutaneous fat especially from the buttocks, abdomen, medical aspect of things and arms and even the face.</td>
<td><img src="image5.png" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Face has prematurely aged look</td>
<td><img src="image6.png" alt="Image" /></td>
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<tr>
<td></td>
<td>Cheeks and temples are hollow due to complete loss of fat</td>
<td><img src="image7.png" alt="Image" /></td>
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<tr>
<td>Specific Objectives</td>
<td>Content</td>
<td>AV Aids</td>
<td>Teacher-Learners activity</td>
</tr>
<tr>
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</tr>
</tbody>
</table>
|                     | Muscle mass is wasted  
                     | Skin is loose and wrinkled with loss of elasticity  
                     | Purpura, Scaphoid abdomen with visible intestinal peristalsis  
                     | Irritable, loud cry  
                     | Monkey facies  
                     | Mental changes  
                     | Fine, brittle hair, alopecia, Impaired growth  
                     | **Grading:**
                     | Grade I – Axilla and groin (loose skin folds in these areas)  
                     | Grade II – Abdomen and Gluteal region  
                     | Grade III – Chest and back  
                     | Grade IV – Buccal pad of fat  
                     | **Management:**
<pre><code>                 | Most important aspect of management is to provide calories |
</code></pre>
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
</table>
| describe the management of marasmus     | • Provide 100 calories/Kg of actual body weight. If well tolerated, the amount is gradually increased.  
• Infections must be treated with appropriate drugs  
  Emotional needs of the child should also be satisfied by giving love and tender care at home. |         | Lecture cum discussion    |
| list down the calorie rich foods         | • Cereals like Rice, wheat, Ragi, Millet Jowar.  
• Pulses and legumes like Bengal gram, red gram, soya bean, green gram, horse gram.  
• Roots and tubers like sweet potato, Tapiaco  
• Nuts and oil seeds like ground nut, gingelly seeds, coconut.  
• Milk and Milk products  
• Fish, meat, and chicken |         |                           |
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
</table>
| explain the preventive measures of malnutrition | **Prevention of Malnutrition:**  
**At family level:**  
- Exclusive breast feeding of Infants for 1\textsuperscript{st} six months  
- Start weaning by 6\textsuperscript{th} month of Child’s age  
- Breast feeding up to 1 Year of Child’s age  
- Proper immunization  
- Checking Weight regularly  
- Maintaining growth chart  
- Environmental Sanitation  
- Using chappels to prevent worm infestation  
- Avoid walking with bare foot anywhere  
- Eating high calorie and high protein diet  
- Avoid open field defecation and using sanitary latrines  
- Keeping food items covered to prevent contamination by fly | ![Image 1](image1.png) ![Image 2](image2.png) ![Image 3](image3.png) | Lecture cum discussion |
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Content</th>
<th>AV Aids</th>
<th>Teacher-Learners activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include fruits and vegetables in Diet</td>
<td></td>
<td>Lecture cum discussion</td>
<td></td>
</tr>
<tr>
<td>Drinking boiled and cooled water.</td>
<td></td>
<td></td>
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<tr>
<td><strong>At Community level:</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Early detection of malnutrition and intervention</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Integrated Health Package</td>
<td></td>
<td></td>
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<tr>
<td>Nutrition Education</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Vigorous promotion of family planning</td>
<td></td>
<td></td>
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<tr>
<td>Income generation activities</td>
<td></td>
<td></td>
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<tr>
<td>Promotion of education and literacy in the Community</td>
<td></td>
<td></td>
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<tr>
<td>Technological measures</td>
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<td></td>
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<tr>
<td><strong>At National level:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Nutrition Supplementation</td>
<td></td>
<td></td>
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<tr>
<td>Nutritional surveillance</td>
<td></td>
<td></td>
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<tr>
<td>Nutritional Planning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific Objectives</td>
<td>Content</td>
<td>AV Aids</td>
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</tr>
<tr>
<td>Complications:</td>
<td></td>
<td></td>
<td>Lecture cum discussion</td>
</tr>
<tr>
<td>▪ Anemia, lower resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Growth failure</td>
<td>More prone to infections</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
xUqfj z e j f wqFk; j f jk;
j i y G - Nghj h C l l k;
F O - 0.5 t Ul Foej j f s pl ; j hakhf fs;
, l k; - maa k gl b
Neu k; - 45 ep f q f s;
f wqFk; Ki w - f ye j i u a hl y; kw Wk; t s ff ks f j y;
f wqf gad gL j j k; c g fu z k; - Rt n uhl b t s kguj; j h s f s;
n khop - j kp;
ngh j Neh ff k;
0 - 5 t Ul Foej j t s h g g y; Nghj h C l l j j pl ; K f f a j j t j j
j hakhf fs; c z h e j n f h s S T k; , f F i wgh bd wp Foej j t s h f
j q f s j j pl rhpt hof f a y; Kay C f F t pg j k; , j d ; Neh ff k; M F k;
F wqgpl Neh f q f s;
f B; f z l t f i s j hakhff S f F k; t s f f N t z L k;
1. Nghj h C l l j j pl ; t i u ai w j y;
2. Nghj h C l l k; nj hl hghd f h u z q f i s gl b ay { f j y;
3. Guj k; rf j p Nghj h C l l ji j t i u ai w j y;
4. Guj k; rf j p Nghj h C l l j j pl ; t i f f i s gl b ay { f j y;
5. Guj k; rf j p Nghj h C l l j j pl ; t i u ai w j y;
6. Guj f; F i wgh l bd ; f h u z q f i s gl b ay { f j y;
7. Guj;Fi wghl bd;mwɔ̃ wɔ̃s tɔɔɔ Fjy;
8. Gujrrj kɛɛj cz Tfis gl bayɔɔ jy;
9. cly;fi uT vd gi j t i uai wj y;
10. cly;fi uT fhuZ qfis tɔɔɔ Fjy;
11. cly;fi uT Nehj aFl LgLj jy;gwʊɛ tɔɔɔ Fjy;
12. rfj pkɛɛj cz TgnghUlfi s gl bayɔɔ jy;
13. Nghjh Cljj j j Lggj wdh toŋki wfi s gl bayɔɔ jy;

Kd Di u:

ehk; eyKld ;, Uggj wF ekj cLy F F C llk; NJit ggLf pɔj .

xU nrbb > mj wFr ;# hɛa nrF prk > eR kwWk ; j Fej yU , yi ynad why
ed F ts u hj i j g; Nghy kdp hF S ffk ; j qf s ; cLy F F C llk ; msp F k;
gytifgggl cz Tg; nghUlfs ; NJit . Nghjh Clkk ; vd gl
Foeijfs ; , wgGkwWk ; NehAWj y ɭ ; mj ɒ gq F tfpfpɔj .

ti uai w.

rhɔaɔd cz Tfis cz z hj myyj Nghj a msT
Clkk sp F k ; cz Tfis cz z hj xUt h ; Nghj h Clkk ; cilat h;
M t hh ; M j ekh ; Nghjh Clkk ; vdf φWkh ; ej pah t ɭ y ; css
Foeijfs y ; Nghjh Clkk ; kφr ; rhj huz khf css j . , ej eφ yi ag;
ngUkghYk ; cz hej nf hss Kbtj jy j y . Vnd d ɭ y ; Nghjh Clkk ;
cila xU Foeij ed whf , Uggj Nghy N t j hd ; Ngh h Wk ; Md hy;
mNJ taJila eykhej Foeij xd wpd ; gffj jy ; epF it j j g;
ghhj hy ; mtd ; kφTk ; r múat d hf nj hφ hd ; mtd ; Fi w vi l
css t d hf , Ugghd ; Vnd d ɭ y ; ts hrrɔFj ; NJit ggLk ; tifahd
cz T Nghj ph ms T fj fff hj Nj fhuz khF k; ej pl pht pl; gy gF j ps j; Foe ij jfs; mt fj fs j tAj fF f; Fi w vi l cs st fh s fh Nt, Uff pl wd h;

Nghj h Cl jk; nj hl hghd fhuz qfs;
- t W k kwWk; Nkhr khd RwWgGwr; # oy;
- mw ah i k> fy t a i k> cz T M h t f; nf h s j s fs; kwWk; goff qfs;
- j jg kj j; j kg t Uk; nj hwW Nehafs; t a pWg; Nghf F kwWk; %r R nj hl hghd nj hwWfs; Nghd wi t.
- ngha FL kgk;
- gpg gpy; vi l F i wT kwWk; ; uj j r; Nr hi f As s j ha;
- rkrr Bww cz T Ki w
- M z ; ngz ; Nt WghL fs;

Nghj h Cl j j p l; mwF wp s;
- 1. vil: eykhhej Foe ij t sh f py. 'eyth jo F ggh i j'' ti ugg l j py; (Road to health chart) ti s T f NhL nj hl hej cahej nfhz N Nghf py . 5 tAj fF f; Fi wej Foe ij jfs; f hy Ki wggb vi l ghhf f ggL mt d j t ph ugg l j py; F wp fg gl Nt z L k;
Nkyifr; RwwsT: xU Foiej Nghjh Cllk; nhhz ijhf , Uejhy; mt d; nhho nhO vdj; Nhjd wpl hyk; mt dj jirfs; tP bffggLfpl wd. mt dj Nky; if nky;jhfh Mfp tplpwj. 1 Kjy; 5 taj tiuczss eykhhej Foiej SFF Nky; if aapl; RwwsT Rkhh; 16 nr.kP, Uf Fk;xU Foiej Nghjh Cllk; nhhz ijhf , Uejhy; mj 13 nr.kPFk; Fi wthf , Uf Fk; 12 nr.kPFk; Fi wthf , Uejhy;kpf fLi kahf Nghjh Cllk; nhhz bUffpwj.

Gjk;rfj pg;gwwhf Fiwahf a Nghjh Cllk;

Foeijfspd; cly; tshrrpfj; Njitahd cz Tfi sj;
juhjjhy; Foiej jf F Gujj;rfj pg;gwwhf FiwvvgLfpwj.

mjpxkhf Gjk; - rfj pg;gwwhf Fiwfhz ggLjy;
lej tajpl; fP; css Foiej SFF F Gujj;rfj pg; FiwgL mjpxkhf fhz ggLfplw. Cypyl ejyehd F Foiej SFF , fFiywgL VwgLfpwj.

Gjk;rfj pg;gwwhf Fiwapl; tifffs;
- Gjkg;gwwhf Fiw
- cly;fi uT
- Gjkg;gwwhf FiwkwMk;cly;fi uT , uz Lk;
Guj k; rfj g; gwwhf F i wa pl; f huz qfs;
Kf f a f huz qfs;
- f h g f h y j j y k > gh j l k; f h y j j y k c z T gw wh f F i w
- r % f t h o f j f K i w
- t W k m s t h d c z T f p l l j y; m y y j F w g g b l r j j s s
c z T f p l f f h k y;. U g g j
m L j j f h uz qfs;
- N g h j k h d c z T c z z h i k n r h p a h i k > C l l r r j j
g a d g L j j h i k
- m j ß r f j p k w M k; G u j r; r j j N j t g g L j y;
c z T c l n f h s $ j y; r k k e j k h d c a h p a y; f h uz qfs;
- g w t ß; N f h s h W f s;
- c z T n r h p j y; N f h s h W f s;
- g u k g i u r k k e j g l l N e h a f s;
- n j h w W N e h a; v j b g G j j p v d ; f h u z k h f N e h a j ; n j h w W
- t a p W W g; G O f f s;
c z T c l n f h s $ j y; r k k e j k h d r K j h a f ; f h u z q f s;
- t W k
- m w h a h i k
- , i z c z T n f h L j j y y; j t w h d g o f f t o f f q f s;
- F o e j j J \ g u N a h f k;
- R f h j h u k w w # o e b y
Guj g; gwwhf Fi w
tiuaiw

Ngh\khd msT Guj rrj J s s cz Tg; nghUl fi s c l nfh s s hj j hy;
Guj g; gwwhf Fi w Vwg f pyj , j i d e fh C l f F i w (f h \ p\n\fhf h) m\y yj Nghj h u C l k; (wet malnutrition) v d Wk; $ wggL k;

, eNeha; , ej p a h t \p y; 3 Kj y; 5 t a j F oe j f S \p f
fhz ggL f pyj .

fhuz qfs;
- Guj r; rrj ml qf p a cz T gwwhf Fi w
- Voj kahd r\f nghUs hj huep y i k
- mw\j hi k kwWk; %l ekg p i ffs; nfhz l j t whd cz T K i w
goff t off f qfs;
- e\l f h y j p w F j hagghy; k l L Nk j Uj y;
- Neha; nj hwWf s;
- Fly; G0ffs;
- t a p Wg; Ngh F >t hej p ngh a FL k gk; (4 m y y j 5 F oe j f s;
  , UggI)

mwp w p s;
- e R h h i t K j y p y; f hy f s; g p d h; i ffs; kwWk; Kfj j p y;
e P f N f hi t .
- , awi f ah d t s h r p a p l i k
- e y T Nghy Kfj Nj hw\k;
- t a p Wt Pf k;
- f y y By; t Pf k;
rpthpj r Kifs;
- Foej ifs pl; tsh rpth Fj; Nj tahd Gujrrj! kj rj cz TgnghUlt fi st oqFjy;
- Nehaj; nj hWfis fl LggLj Jy;
  t apWNgNhf F-j pt kwMk; cz T Kifs p; fl LggLj Jy;
  Ntz Lk;
  Neha; nj hWfhd rhpahd kjhpufis nhLlj Jy;
  Ntz Lk;
Gjk; kj rj cz TgnghUlf s;
- t y q F g; Guj qfs; - ghy j a b > ghyhi lfl l b > Kl l > k b; kwMk;
  l wwrp
- f haf wp Gujk; - eryf li y kwMk; Nhah g b ;
- rphjhd qfs > g W tiff s > guG kwMk; gaWfs > gaW new W
  gl lz p kwMk; g b } vz nz a; t jiff s;
- Kjs fl ba gaW tiff s;
- Kej b pgUgGfl iy UggG
  grirggagW > nhfs S > j l l ggaW
cly;fi uT Neha;

ti uai w

Nghj khd msT rfj p kpf ej cz Tg; nghUlfis clnfhshky;
, Uggj hy;cly;fi uT Neha;VwgLf pyj .

, eNeha;0-2 taj Foej jfs fF mj pkhf fhz ggLf pyj .

fhuz qfs;
Kff妁 fhuz qfs;
- cz T gwwhf Fi w
- Neha;nj hwW
- Voj kahd r%f nghUs hj huepb y

mLjj fhuz qfs;

taj

tshej Foej jfi s t pk 6 khhk;Kj y;1 taj Foej jfs;mj pkhf
ghj pf ggLth;
- Fi w gprtk;kwMk;Fi wej vil css Foej jfs;mj pkhf
ghj pf ggLth;

nj hl h't hej p
, j d hy;j i r Nrjki l jy;fhzh ggLk;
nj hl h't apWgNhF (Ngj p)
    , j d hy;vil Fi wj y;fhz ggLk;
mwpF wpis itj tif ggLjj jy;

tif 1- ifaBf py<kWk; fhpy f py; Nj hy; RUFF k;

tif 2- tapW kWk ;;, Lgyy; Nj hy; RUFF k;

tif 3- neQR kWk; KJ f py; Nj hy; RUFF k;

tif 4- fd d k; Fi wej fhz ggLjy;

ṟp̱p̱j̱ṟ Kif ws;
- f NyhphkF ej cz TgnguUf i s t o qF jy;
- j Fej kUej p d j; nfhz L Nehaj; nj hwWf i s F z ggLj j j y;
  Ntz L k;
- Foej j f F Nji t ah d md i gAk >mut i z gi gAk; j u Ntz L k;

f NyhphkF ej cz TgnguUf s;
- ṟpV j hd p qfs; kWk; j hd p qfs; Nf hj i k- nuhl b >rgghj j p>
  mhp pf kG>Nr j ls k; kWk; Nf ot u F (j p z )
- khTr rj Js s fhafs; c U i s ff p qF rhhfi u t s s pF p qF
  kWk; k u t s s p F p q F
- khTr rj Js s go qfs > t h i o g gok > ug gy h
- rhhfi u Nj d ; kWk; nt y y k;
- nfhOgG s; kWk; vz nz afs; - nt z nz a>nea;
jLgKiqwfs;

FLkgmstpy;

- Kjy; 6khjjpF FoeijFF jhagghy; kllNk nfhljjy; NtzLk;
- Foeijapl;6tJ khjjpF; i z cz T M ukgipjy; NtzLk;
- jhagghy;1tUlktiunfhljjy; NtzLk;
- %dWkhjjpjF xU Ki walt; J FoeijFF vi lgghbrhjipjy; NtzLk;
- Foeijjtsbhrptiuglk;rhighhjjy;
- RwmWr#oy;Rfhjhu;

GQjnjhwjLlf FoeijfSff fhyzpis mzpfNtzLk;

- ntWk;fhypsry;elggiijtfiffNtzLk;
- fNyhhpkwWk;Guik;kpFejczTnghUlfisnfhljjy; NtzLk;
- jpvjejntsaprkyk;foppf$1lj
- RfhjhuKhd foggjijjgcdglljjjy;NtzLk;
- czTg;nghUlfis<nfhR>Ghdtfts;nkaffhtHW%btffNtzLk;
- fhafwpsskwWk;goqfisczty;NrhhjffnfhssNtzLk;
- nfhjpfJMwitjjER;klLNk FoeijfSff nfhLff NtzLk;
APPENDIX - G

STRUCTURED INTERVIEW SCHEDULE
PART-I
DEMOGRAPHIC DATA OF THE MOTHER

1. Age of the mother in years
   a) Below 25
   b) 26-30
   c) 31-35
   d) Above 36

2. Educational status of the mother
   a) No formal education
   b) Primary education
   c) Middle education
   d) High school
   e) Higher secondary
   f) Graduate

3. Occupation of the mother
   a) House wife
   b) Coolie
   c) Self employed
   d) Private employee
   e) Government employee
4. Family size (Total number of family members)
   a) 3 members
   b) 4 members
   c) 5 members
   d) 6 and above

5. Type of family
   a) Nuclear
   b) Joint

6. Total number of under five children
   a) 1 child
   b) 2 children

7. Total family income per month
   a) 1000-2000
   b) 2000-3000
   c) 4000-6000
   d) 6000 and above

8. Religion
   a) Hindu
   b) Muslim
   c) Christian
   d) Others
PART-II
STRUCTURED INTERVIEW SCHEDULE/ KNOWLEDGE QUESTIONNAIRE

1. What is malnutrition?
   a) Adequate food and calorie intake
   b) Inadequate food intake for longer period
   c) Excess food intake
   d) Excess intake of fatty foods

2. Which of the following age group has greatest prevalence of malnutrition?
   a) 9-12 months of age
   b) 6 month-3 years of age
   c) 1-2 years of age
   d) 3-5 years of age

3. What are the signs and symptoms of malnutrition?
   a) Fever and cold
   b) Cough and vomiting
   c) Loss of weight and growth failure
   d) Weight gain and irritability

4. Which is not a primary cause of Protein energy malnutrition?
   a) Poverty
   b) Maternal malnutrition
   c) Unavailability of food
   d) Environmental sanitation
5. What are the common forms of Protein energy malnutrition?
   a) Goitre and myxedema
   b) Rickets and scurvy
   c) Beri beri and keratomalacia
   d) Kwashiorkor and marasmus

6. What is kwashiorkor?
   a) Protein deficiency disorder with adequate carbohydrate consumption
   b) Vitamin deficiency disorder with adequate protein consumption
   c) Calorie deficiency disorder with adequate vitamin consumption
   d) Vitamin A deficiency disorder with adequate protein consumption

7. Which age group is mostly affected by kwashiorkor?
   a) 0-2 years
   b) 4-5 years
   c) 3-5 years
   d) 0-1 year

8. What are the signs and symptoms of kwashiorkor?
   a) Redness of eyes and irritability
   b) Edema and mental changes
   c) Leg pain and giddiness
   d) Throat pain and cough
9. How the kwashiorkor child looks?
   a) Short and stout
   b) Thin and tall
   c) Obese and vision changes
   d) Edematous and hair changes

10. What is the dietary management for kwashiorkor?
    a) Providing vitamin rich diet
    b) Providing calorie rich diet
    c) Providing protein rich diet
    d) Providing calcium rich diet

11. What are the protein rich foods given below?
    a) Milk, pulses, meat
    b) Jaggery, honey, dates
    c) Sugar, potato, cucumber
    d) Rice, ragi, bajra

12. What is Marasmus?
    a) Fat deficiency disorder
    b) Vitamin deficiency disorder
    c) Protein deficiency disorder
    d) Calorie deficiency disorder
13. Which age group is mostly affected by Marasmus?
   a) 2-3 years
   b) 0-2 years
   c) 3-4 years
   d) 4-5 years

14. What are the signs and symptoms of Marasmus?
   a) Head ache and abdominal pain
   b) Fever and vomiting
   c) Loss of subcutaneous fat and muscle wasting
   d) Itching and skin lesions

15. How the Marasmic child looks?
   a) Active and weight gain
   b) Very tall
   c) Obesed
   d) Very thin and little old man facies

16. What is the dietary management for Marasmus?
   a) Providing calorie rich diet
   b) Providing vitamin rich diet
   c) Providing Calcium rich diet
   d) Proving protein rich diet
17. What are the calorie rich foods given below?
   a) Rice, maize, ragi
   b) Egg, milk, ghee
   c) Fish, meat, crab
   d) Green leafy vegetables, cucumber, ladies finger

18. What are the common infections frequently encountered by malnourished child?
   a) Skin infections and urinary tract infections
   b) Diarrhea and respiratory infections
   c) Ear infections, skin infections
   d) Urinary tract infections and eye infections
   e) 

19. What are the risk factors of Malnutrition?
   a) Obesity
   b) Psychological disturbances
   c) Hereditary
   d) Poverty

20. Which is the appropriate age for weaning to prevent malnutrition?
   a) By 6th month
   b) By 8th month
   c) By 7th month
   d) By 9th month
21. How often weight should be checked for 0-3 years of children?
   a) Once in a month
   b) Once in 2 months
   c) Once in 3 months
   d) Once in 4 months

22. How often weight should be checked for 3-6 years of children?
   a) Once in 6 months
   c) Once in 4 months
   d) Once in 3 months
   e) Once in 9 months

23. What is the normal mid arm circumference for 1-5 years of children?
   a) 14 cms
   b) 13 cms
   c) 15 cms
   d) 12 cms

24. Which is not a preventive measure of malnutrition at family level?
   a) Providing high protein diet
   b) Providing high calorie diet
   c) Checking weight regularly
   d) Meeting play needs

25. What are the complications of Malnutrition?
   a) Hepatic failure
   b) Growth failure
   c) Respiratory failure
   d) Renal failure
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<td>Do you give calorie rich diet to your child?</td>
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<td>Do you provide adequate cereals, green leafy vegetables to your child?</td>
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<td>Do you provide small and frequent diet to your child?</td>
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<td>Do you provide mid day snacks to your child?</td>
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<td>Do you provide protein rich diet to your child?</td>
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<td>Do you provide fruits to your child?</td>
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<td>Do you provide egg to your child?</td>
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<td>Do you provide milk to your child before bed time?</td>
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<td>Have you given breast feeding up to one year to your child?</td>
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<td>Have you started weaning at 6th month of child’s age?</td>
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<td>Do you check your child’s height and weight regularly?</td>
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<td>Do you make sure that your child is not suffered from frequent respiratory infections and diarrhea?</td>
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<td>15</td>
<td>Have you given vitamin ‘A’ drops to your child?</td>
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APPENDIX – H
SCORES RELATED TO KNOWLEDGE REGARDING MALNUTRITION AMONG MOTHERS WITH UNDER FIVE CHILDREN

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Correct answer-1  Wrong answer-1
j i y G - Nghj h C l l k;
F O - 0 5 t U l F o e j j f s p l ; j h a k h h f s ;
, l k; - m a a k g l b
N e u k; - 4 5 e p p p q f s ;

f w g p F k; K i w - f y e j i u a h l y ; k w W k ; t p f f k s p j y ;
f w g p f g a d g l j j k; c g f u z k ; R t n u h l b t p g u j ; j h s f s ;
n k h o p - j k p ;

n g h j  N e h f f k ;

0 - 5 t U l F o e j j t s h g g g y ; N g h j h C l l j j p l ; K f f p a j j t j i j j h a k h h f s ; c z h e j n f h s s T k ; , f F i w g h b d w p F o e j j t s h f f j q f s j j p l r h o p t h o f i f a y ; K a y C f F t p g g j k ; , j d ; N e h f f k ; M F k ;
F w g g b l  N e h f f q f s ;

f B ; f z l i t f i s j h a k h h f S f F k ; t p f f N t z L k ;
14. N g h j h C l l j j p l ; t i u a i w j y ;
15. N g h j h C l l k ; n j h l h g h d f h u z q f i s g l b a y p b j y ;
16. G u j k ; r f j p N g h j h C l l j j t i u a i w j y ;
17. G u j k ; r f j p N g h j h C l l j j p l ; t i f f i s g l b a y p b j y ;
18. G u j k ; r f j p N g h j h C l l j j p l ; t i u a i w j y ;
19. Gj f; Fi wgh bd; fuz qfi s gl bayjy j y;
20. Gj f; Fi wgh bd; mwF wi s t sf Fj y;
21. Gj rrj j kF ej cz Tf i s gl bayjy j y;
22. cl y; fi uT vd gi j ti uai wj y;
23. cl y; fi uT Fw F i s t sf Fj y;
24. cl y; fi uT Nehr aflL gLj j j y; gwmpt sf Fj y;
25. rfj pkF ej cz TgnghUlf is gl bayjy j y;
26. Nghj h Clljj j j L ggj whd t o Pi wfi s gl bayjy j y;

Kd Di u:

ehk; eyKld ;, Uggj wF ekj cLYF F Cllk; Nhj t ggLfpj .

xU nrb>mj wF r; #hia nrs prk>eF; kwWk; j Fej vU , j i y na d why
ed Fts uhi j g; Nghy kd p hs F Fk; j qf s ; cLYF F Cllk; ms pFk;
gytfgggl cz Tg; nghUlfs; Nhj t. Nghj h Cllk; vd gl
Foeij fs ;; wgGkwWk; NehAWj ayr; mj p ggq F tfp fpj .
ti uai w.

rhpahd cz Tf i s cz zhj myyj Nghj a ms T Cllks pFk; cz Tf i s cz zhj xUth; Nghj h Cllk; cilat h;
Mthh; Mij ehk; Nghj h Cllk; vd fWhk; ; ej pht py; css
Foeij fs py; Nghj h Cllk; kPr; rhj huz khf cssj ., ej ep yi ag;
ngUkghYk; cz hej nhhs s Kb t j py j y. Vnd d py; Nghj h Cllk;
cila xU Foeij ed whf , Uggj Nghy Nt j hd ; Nh hd Whk; Mdh y;
mNj tajila eykhhej Foeij xd wpl ; gffjy py; epf it j j g;
Nghj h Clj k; nj hl hghd f huz qfs;

- t Wk kwAwk; Nkhjkhd RwNgGwr; #oy;
- mwahik> fty paldik> cz T Mtf; nfhjsfs; kwAwk; goffqfs;
- jWkgj; jWkg t Uk; nj hW Nehafs; t apWg; Nghf F kwAwk; %r R nj hl hghd nj hWfs; Nghd w t.
- ngha FLkgk;
- gWgggy; vlf Fi wT kwAwk; , ujj r; Nr hi f As sj ha;
- rkrrBwcz T Ki w
- Mz ;ngz ;Nt WghLfs;

Nghj h Cllj j pl; mwWwp s;

- 1. vil: eykhej Fo ej j tshf py. ‘eythoTgghij’ ti ugglj jpy; (Road to health chart) tisTf NhLnj hl hej cahej nfhz N Nghf py. 5 tajffF; Fi wej Fo ejj fs; fhyKi wggv vi l ghhffgggL mt d J t #uggljj py; F w#fggL Nt z Lk;
Nkyifr; Rwms T: xU Foei j Nghj h Cllk; nfhz lj hf , Uej hy; mt d; nfhO nfhO vd j; Nghj wpl hy k; mt dJ jirfs; t P bff ggL fpd m. mt dJ Nky;i f nkyyp aj hf Mfp t D fpj. 1 Kjy; S taJ ti u css eybhj Foei jFF Nky;i fapl; Rwms T Rkhh; 16 nr.kP, Uffk; xU Foei j Nghj h Cllk; nfhz lj hf , Uej hy; mj 13 nr.kPFk; Fi wt hf , Uffk; 12 nr.kPFk; Fi wt hf , Uej hy; kpf; fL i ka hf Nghj h Cllk; nfhz bUff fpj.

Gujk; rfj pg; gwwhf Fi wafp a Nghj h Cllk;

- Foei jfs pl; cly; t shrrpfj; Njitahd cz Tfisj; juhj hy; Foei jFF Gujk; rfj pg; gwwhf Fi wvwgL fpj.
mj pfkhf Gujk;- rfj pg; gwwhf Fi wfhz ggLjy;

- lej taJ pl; fs; css Foei jSFF Gujk; rfj pg; Fi wghL mj pfkhf fzh ggLfpj. Cypfpl ejyehd F Foei jSFF, fFi wghL VwgLfpj.

Gujk; rfj pg; gwwhf Fi wapl; tifff;

- Guj g; gwwhf Fi w
- cly; fi uT
- Guj g; gwwhf Fi wkwMk; cly; fi uT, uz Lk;
Guj k; rfj p; gwhff Fi wapd; fhuz qfs;
Kffpafhuz qfs;
- fhg fhhyj j kghY J L k; fhhyj y k cz T gwhff Fi w
- r%f thof j f Ki w
- t W k msthd cz T fphiljy; myyj F wggbl rjj ss
cz T fphilffhky;; Uggj
mLjj fhuz qfs;
- Nghj khd cz T czzhik nrrhahi k> Cllrjj
  gad gljjhi k
- mj p rfj pwwk; Gjr; rj J nj t ggLjy;
cz T clnfhs Sjy; rkkej khd caphay; fhuz qfs;
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  cz T nrhjy; Nhhs hWfs;
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cz T clnfhs S jy; rkkej khd RKj haf; fhuz qfs;
  t W k
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  Foeij j J \ guNahfk;
  Rfhj hukww # oep"
Guj g; gwwhf Fi w

ti uai w

Nghj khd ms T Guj r; j s s cz Tg; nghUlfi s cl nfhs sh sj hy;
Guj g; gwwhf Fi w VwgL fp lj ; j i d e fh C l f fi w (ft h \ Nhnhf fh)
my yj Nghj h <u C l k; (wet malnutrition) vd Wk; $ wggL k;
, eNeha; , ej pah t gy; 3 Kj y; 5 t aj Foei j f S f F
fh z ggL fp lj .

fhuz qfs;
- Guj r; rj ml qf a cz T gwwhf Fi w
- Voj kahd r%f nghUs hj huep yi k
- mwai k kw Wk; %l ekgjiff s; nfhz | jt whd cz T Ki w
goff t off qfs;
- eP | fh yj pf j hagghy; kl L Nk j Uj y;
- Neha; nj hwWfs;
- Fly; GOf ss;
- t apWg; NghF >t hej p ngha F L kgs; (4 my yj 5 Foei j fs;
 , Uggl )

mwF wos;
- efNf hhi t Kj y; fh yfs; gd d h; iff s; kw Wk; Kfj j y;
eF Nf hi t .
- , a w fahd t shr r j f i k
- ep T Nghy Kfj Nj hw Wk;
mwF wF is i t jj t f ggLj j j y;
t i f 1-f hy f s g y; eRN h hi t (t Pf k)
t i f 2-f hy; t Pf k; kW k; K f t Pf k;
t i f 3-f hy t Pf k; K f t Pf k; kW k; neQR % F gF j p s g y; eRN h hi t
t i f 4- F hy; eRN h hi t K f eRN h hi t +neQR % F gF j p s g y;
eRN h hi t kW k; t apW p t Pf k; (kN hj uk)

rµµ j r K i w F s;
 - Foej jfs pl; t sh rµF j; N j i ta h d G j r r j j kµ e j
c z T g n g h Ul f is t o q F j y;
 - Nehaj; nj h W f i s f l L g g L j j j y;
   ◀ t apW Ng h F - j p t kW k; c z T K i w F s g y; f l L g g L j j y;
       N t z L k;
   ◀ Neha; nj h W f f h d r h a h d kh j j p u F i s n f h L j j y;
       N t z L k;

G j k; kµ e j c z T g; n g h Ul F s;
 - t g y q F g; G j q F s; - g h y > j a F h g h y h i l f f l b > k l j l > k B ; kW k;
    , i wr F p
 - f h a F w g G j k; - e g y f F l i y k W k; N r h a h g B j ;
 - rµW h d µ q F s > g a W t i F s > g G G k W k; g a W F s > g a W W n e W
   g l l h z p k W k; g B j } > v z n z a; t µ j F s;
 - K i s f l b a g a W t i F s;
 - K e j µ p g U g > f l i y g U g G > g r i r g g a W > n f h s S > j l j l g g a W
cly;fi uT Neha;

ti uai w

Ngh khd ms T rfjp kbf ej cz Tg; nghUlfi s cl nfhs shky;
, Uggj hy;cly;fi uT Neha;VwgLfpwj .
, eNeha;0-2 taj Foej jfS fF mj pkhf fzh ggLf pwj .

fhuz qfs;
Kffjafhuz qfs;
- cz T gwwhf F i w
- Neha; nj hwW
- Voj kahd rf nghUs hj hu epy

mLjj fhuz qfs;

taj

thshej Foej jfi s t p 6 khj k; Kjy; 1 taj Foej jfs; mj pkhf
ghj pfggLth;
- Fi w gpwt k; kwWi; F i wej vi l cs s Foej jfs; mj pkhf
ghj pfggLth;

nj hl h't hej p
, j d hy; j i r Nrj k i l j y; fzh ggLk;

nj hl h't apWgNghF (Ngj p)

, j d hy; vi l F i wj y; fzh ggLk;

ehl gl l Neha; nj hwWf s;

f hr Neha;R nj hl hghd Nehaj nj hwW>gpwt pNkf f mj pNeha;
gpw pNehafs;
md d gpσ T>j i y t Pf k;

mwφ wφs;
- Foeij rpwaj hftk> kp nky pεj k;Nh y pł; fθ; nf hOgNg
  , yyhky>yY kGc s s j hftk:, Uffk;
- Kfk; nky pφj y>taj Kj φ ej Nj hwwk;
- taφ fF , Uff Nt z ba vil aγy;ghj ρhf F i wj y;
- Nky; i fr Rwws T 14 nr.kφFk; kφ F i wej , Uffk;
- neLeh s ;Ngj p, Uffk;
- eR; ogGmwφ wφs;
- Nj hy; Ruffk;
- taφV>nj hil i f Kf ggFj pφ s psy; Nj hy pł ; fθ; nf hOgG , yyhky;
  fh zg ggLjy;
- FuqF Kf j Nj hwwk;
- tshrpF i wj y;
- Kbcj pφj y;

mwφ wφi s it tj tif ggLjljy;
tif 1- if aφffpy>kWk; f hy bffpy; Nj hy; Ruffk;
tif 2- tajWkWk; , Lggy; Nj hy; Ruffk;
tif 3- neQR kwWk; Kj fgy; Nj hy; Ruffk;
tif 4- fddk; Fi wej fh zg ggLjy;
rpf j r Ki wfs;

- f Nyhhpk g ej cz Tgng Ulfi stoqFjy;
- j Fej kUej j dpj; nfhz L Nehaj; nj hwm Fi s Fz ggLjj y; Nt z Lk;
- Foej j FF Nj iahd md i gAk> mut i z gi gAk; j u Nt z Lk;

f Nyhhpk g ej cz Tgng UlFs;

- rpw j hd pqFs; kwMK; j hd pqFs; Nf hj i k- nhu lb>rggh j p> mhp pf kG> Nhsk; kwMK; Nfo t UF ( j p z )
- khTrjr j ss fhFs; cu isff pqF rhff i ut ss pf pqF kwMK; kut ss pf pqF
- khTrjr j ss goqFs >thi oggok>ugghy h
- rhff i u Nj d ;kwMK; nt yyk;
- nf hOgGs; kwMK; vz nz afs; - nt z nz a>nea;

jLgGKi wFs;

FLkg mst py;

- Kjy; 6 khjj pF Foej j FF j haggy; kl LNk nf hLjj y; Nt z Lk;
- Foej ja pl; 6t j khjj py; i z cz TMukg py; Nt z Lk;
- j hagghy; 1 t Ulk; ti unf hLj y; Nt z Lk;
- %d W khjj pF xu Ki waht J Foej j FF vi l ghpyrhj py y; Nt z Lk;
Njrpa mstpy;

- rjj z T mwòt gj jphi f >G jfk; t hapyhf gugG jy;
- rjj z T, d ikephi yi kfi s fz fhz phi jy;
- rjj z T jphi jfi s j jahhphi jy;

ghj mgfs;

- , uj Nrhi f >sh rpnd i k
- Nehn hj W mj phi hf fhz ggl y;
APPENDIX - G

STRUCTURED INTERVIEW SCHEDULE

PART-I
DEMOGRAPHIC DATA OF THE MOTHER

1. Age of the mother in years
   a) Below 25
   b) 26-30
   c) 31-35
   d) Above 36

2. Educational status of the mother
   a) No formal education
   b) Primary education
   c) Middle education
   d) High school
   e) Higher secondary
   f) Graduate

3. Occupation of the mother
   a) House wife
   b) Coolie
   c) Self employed
   d) Private employee
   e) Government employee
4. Family size (Total number of family members)
   a) 3 members
   b) 4 members
   c) 5 members
   d) 6 and above

5. Type of family
   a) Nuclear
   b) Joint

6. Total number of under five children
   a) 1 child
   b) 2 children

7. Total family income per month
   a) 1000-2000
   b) 2000-3000
   c) 4000-6000
   d) 6000 and above

8. Religion
   a) Hindu
   b) Muslim
   c) Christian
   d) Others
PART-II
STRUCTURED INTERVIEW SCHEDULE/ KNOWLEDGE QUESTIONNAIRE

1. What is malnutrition?
   a) Adequate food and calorie intake
   b) Inadequate food intake for longer period
   c) Excess food intake
   d) Excess intake of fatty foods

2. Which of the following age group has greatest prevalence of malnutrition?
   a) 9-12 months of age
   b) 6 month-3 years of age
   c) 1-2 years of age
   d) 3-5 years of age

3. What are the signs and symptoms of malnutrition?
   a) Fever and cold
   b) Cough and vomiting
   c) Loss of weight and growth failure
   d) Weight gain and irritability

4. Which is not a primary cause of Protein energy malnutrition?
   a) Poverty
   b) Maternal malnutrition
   c) Unavailability of food
   d) Environmental sanitation

5. What are the common forms of Protein energy malnutrition?
   a) Goitre and myxedema
   b) Rickets and scurvy
   c) Beri beri and keratomalacia
   d) Kwashiorkor and marasmus
6. What is kwashiorkor?
   a) Protein deficiency disorder with adequate carbohydrate consumption
   b) Vitamin deficiency disorder with adequate protein consumption
   c) Calorie deficiency disorder with adequate vitamin consumption
   d) Vitamin A deficiency disorder with adequate protein consumption

7. Which age group is mostly affected by kwashiorkor?
   a) 0-2 years
   b) 4-5 years
   c) 3-5 years
   d) 0-1 years

8. What are the signs and symptoms of kwashiorkor?
   a) Redness of eyes and irritability
   b) Edema and mental changes
   c) Leg pain and giddiness
   d) Throat pain and cough

9. How the kwashiorkor child looks?
   a) Short and stout
   b) Thin and tall
   c) Obese and vision changes
   d) Edematous and hair changes

10. What is the dietary management for kwashiorkor?
    a) Providing vitamin rich diet
    b) Providing calorie rich diet
    c) Providing protein rich diet
    d) Providing calcium rich diet
11. What are the protein rich foods given below?
   a) Milk, pulses, meat
   b) Jaggery, honey, dates
   c) Sugar, potato, cucumber
   d) Rice, ragi, bajra

12. What is Marasmus?
   a) Fat deficiency disorder
   b) Vitamin deficiency disorder
   c) Protein deficiency disorder
   d) Calorie deficiency disorder

13. Which age group is mostly affected by Marasmus?
   a) 2-3 years
   b) 0-2 years
   c) 3-4 years
   d) 4-5 years

14. What are the signs and symptoms of Marasmus?
   a) Head ache and abdominal pain
   b) Fever and vomiting
   c) Loss of subcutaneous fat and muscle wasting
   d) Itching and skin lesions

15. How the Marasmic child looks?
   a) Active and weight gain
   b) Very tall
   c) Obesed
   d) Very thin and little old man facies
16. What is the dietary management for Marasmus?
   a) Providing calorie rich diet
   b) Providing vitamin rich diet
   c) Providing Calcium rich diet
   d) Proving protein rich diet

17. What are the calorie rich foods given below?
   a) Rice, maize, ragi
   b) Egg, milk, ghee
   c) Fish, meat, crab
   d) Green leafy vegetables, cucumber, ladies finger

18. What are the common infections frequently encountered by malnourished child?
   a) Skin infections and urinary tract infections
   b) Diarrhea and respiratory infections
   c) Ear infections, skin infections
   d) Urinary tract infections and eye infections

19. What are the risk factors of Malnutrition?
   a) Obesity
   b) Psychological disturbances
   c) Heriditary
   d) Poverty

20. Which is the appropriate age for weaning to prevent malnutrition?
   a) By 6th month
   b) By 8th month
   c) By 7th month
   d) By 9th month
21. How often weight should be checked for 0-3 years of children?
   a) Once in a month
   b) Once in 2 months
   c) Once in 3 months
   d) Once in 4 months

22. How often weight should be checked for 3-6 years of children?
   a) Once in 6 months
   b) Once in 4 months
   c) Once in 3 months
   d) Once in 9 months

23. What is the normal mid arm circumference for 1-5 years of children?
   a) 14 cms
   b) 13 cms
   c) 15 cms
   d) 12 cms

24. Which is not a preventive measure of malnutrition at family level?
   a) Providing high protein diet
   b) Providing high calorie diet
   c) Checking weight regularly
   d) Meeting play needs

25. What are the complications of Malnutrition?
   a) Hepatic failure
   b) Growth failure
   c) Respiratory failure
   d) Renal failure
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<td>Do you give calorie rich diet to your child?</td>
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<td>Do you provide adequate cereals, green leafy vegetables to your child?</td>
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<td>Do you provide small and frequent diet to your child?</td>
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<td>Do you provide protein rich diet to your child?</td>
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<td>Do you provide germinated pulses to your child?</td>
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<td>Do you provide fruits to your child?</td>
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<td>Do you provide milk to your child before bed time?</td>
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<td>Have you given breast feeding up to one year to your child?</td>
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<td>Have you started weaning at 6th month of child’s age?</td>
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<td>Do you check your child’s height and weight regularly?</td>
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<td>Do you make sure that your child is not suffered from frequent respiratory infections and diarrhea?</td>
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<td>Have you given immunization up to your child’s age?</td>
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<td>Have you given vitamin ‘A’ drops to your child?</td>
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APPENDIX – H
SCORES RELATED TO KNOWLEDGE REGARDING MALNUTRITION AMONG MOTHERS WITH UNDER FIVE CHILDREN

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Correct answer-1                           Wrong answer-1
### Scores Related to Practice of Mothers of Under Five Children Regarding Malnutrition

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Correct answer-1  Wrong answer-1
j hapl;Rat muuk;

1. taj (t Uljjpy)
   m) 25 taj pF k;Fi wt hf
   M) 26 - 30
   ,) 31 - 35
   <) 36 taj pF k;Nky;

2. fytpj Fjp
   m) gbf fhjt h;
   M) Mukgfyp
   ,) cahpyf;fytp
   <) Nkyep fyf ytp
   c) glggbgGgbj jth;

3. nj hopy;
   m) FLkgjiytp
   M) $ypNtiynnrgth;
   ,) Ra nj hopy;nrqgt h;
   <) jdhpihefjttjpy;Nti y nrqgt h;
   c) murhqf efjttjpy;Nti y nrqgt h;
4. FL kj j pd ; nkhj j egh f s ?
   m) 3
   M) 4
   ,) 5
   6-f F Nk y;

5. FL kg t i f
   m) j d F L kg k;
   M) $ l L f F L kg k;

6. Ie j t a j pd ; f B , c s s F oe j j f s pd ; nkhj j vz z p i f ?
   m) 1
   M) 2
   ,) 3-f F k; Nky;

7. FL kj j pd ; kh j t U khd k ; (& g h a g y)
   m) 1000 - 2000
   M) 2000 - 4000
   ,) 4000 - 6000
   6000 - F F k; Nky;

8. kj k;
   m) , ej
   M) f p u j t k;
   ,) , j y h k p a k;
   6-f F k; Nky;
   gp v
1. Nghj h C l l k; vd why; vd d?
m) Nghj p ms T cz T c l n f hs S j y;
M) c l y y; C l l cz T gw w h f F i w V w g L j y;
, ) mj p ms T cz T cz gl
<) nh h O g G r; r j j mj p K s s cz T c l n f hs S j y;

2. v e j t a j F o e i j f S f F Nghj h C l l k; m j p kh f f h z g g L f p j ?
m) 9-12 kh j k;
M) 6 kh j k; K j y; 3 t a j t i u
, ) 1 t a j K j y; 2 t a j t i u
<) 3 t a j K j y; 5 t a j t i u

3. Nghj h C l l j j p l ; m w G w p s; a h i t ?
m) r y p k w W k; f h a r r y;
M) , U k y > h e j p
, ) v i l F i w j y > t s h r p a p l i k
<) v i l $ L j y > N f h g g g L j y;

4. f B; f z l d t w l s; v i t K j d i k G u j k; - r f j p ( f N y h h p) Nghj h C l l j j p l ; f h u z p a h f h j ?
m) t W k
M) f h g g p p n g z f S f F t U k; Nghj h C l l k;
, ) c z T gw w h f F i w
<) R w W g G w j ; j a j k
5. Guj k;rfj p Nghj h Cl | j j pd; tiffs; ahit t?
   m) Fuy; ti y Rug gt Pf k>F uy; ti y Rugg F i wghL
   M) t Y t w w v Y k G Neh a r g f s gy , u j j fr P Neh a;
   ,) khi yff z ; Neha > f z ; G w Neha;
   <) e P k Cl | f F i w T>gl bd p ah y; c ly; f i u T.

6. e P k Cl | f F i w T vd wh y; vd d?
   m) Njitahd ms T f Ny h h A l d ; $ ba Gu j g w h f F i w
   M) Njitahd ms T Gu j j l d ; $ ba it l l k p f s ; g w h f F i w
   ,) Njitahd ms T it l l k p f S l d ; $ ba f Ny h h g g w h f F i w
   <) Njitahd ms T Gu j j l d ; $ ba it l l k p ; V g w h f F i w

7. vej t aj Foe j j f S f F e P k Cl | f F i w T Neha ; f h z g g L f p y ?
   m) 2 - 3 t aj
   M ) 0 - 2 t aj
   ,) 3 - 5 t aj
   <) 4 - 5 t aj

8. e P k C l | rr j j F i w g h l bd ; mw f w fs ; ahit t?
   m) f z N f h s h W > N f h g g L j y;
   M) t Pf k ; k W M k ; k d ej y k h w k;
   ,) Ko q f h y ; t y p k a f f k;
   <) nj h z j l t y p ; U ky;

9. e P k C l | f F i w T V w g l l Foe j j v t t h W f h z g g L k?
   m) F s s k ; k W M k ; F z j h f
   M) x y p k W M k ; c au k h f
   ,) c ly ; g U k d ; k W M k ; g h hj t N f h s h W f s;
   <) c ly ; t Pf k ; k W M k ; K b f s p y ; e p k h w w k;
10. eFlk Clff Fi wT Nehap d fl\gg Ljjf; $ ba cz T Ki wvd d?
    m) i t l l k pl; kF ej cz Tf i s nfh Ljjy;
    M) rfjp(f Nyyhp kF ej cz Tf i s nfh Ljjy
    , ) Gujk kF ej cz Tf i s nfh Ljjy;
    <) fhyrak kF ej cz Tf i s nfh Ljjy;

11. fB; fzt wW s; Guj kF ej cz TgnghUlfs; ahi t?
    m) ghy> K i s fl ba gaWt i ffs, i wrp
    M) ntyyk; N i d; Nguprkgok;
    , ) ru f f u c U i s f pqF nt s su p
    <) mupNf s t UF; f kG

12. g l b d pahy; c l y; fi u T Neha; v d wh y; v d d?
    m) nfhOgGr; r j j gwhhf Fi w
    M) i t l l k pl; gwhhf Fi w
    , ) Gujk gwhhf Fi w
    <) f Nyyhp rfjp gwhhf Fi w

13. vej t a j F oe j j S f F gl b d pahy; c l y; fi u T Neha;
    f h z ggL f p y ?
    m) 2-3 t a j
    M) 0-2 t a j
    , ) 3-4 t a j
    <) 4-5 t a j
14. gl l d ph y; c l y; f i u T N e h a p d ; m w p h s ; a h i t ?
   m) j i y t y p k w M k; t a p W c g h i j
   M) f h a r r y > t h e j p
   , ) c l y; n k y y p y ; N j h y p d ; f θ ; n f h o G f i u j y ;
   <) m h p G > N j h y ; G z f s ;

15. gl b d p h y; c l y; f i u T N e h a v w g l l F o e j j v t t h W f h z g g L k ?
   m) R W R W g g h f , U e j h y ; k w M k ; v i l $ L j y
   M) k p c a u k h d N j h w w k ;
   , ) c l y; g U k d ;
   <) k p n k y p e j N j f k > t a j K j p e j N j h w w k ;

16. gl b d p h y; c l y F i w t N e h a p d f l L g g L j j f ; $ b a c z T
   K i w v d d ?
   m) r f j p e j w e j c z T t i f f i s n f h L j j y ;
   M) i t l l k p d ; m j p K s s c z T t i f f i s n f h L j j y ;
   , ) f h y r p a k ; m j p K s s c z T t i f f i s n f h L j j y ;
   <) G u j k ; m j p K s s c z T t i f f i s n f h L j j y ;

17. f N y h h p k p e j c z T g ; n g h U l f s ; a h i t ?
   m) m h p N r h s k ; N f o t u F
   M) K l j l > g h y > n e a ;
   , ) k θ > ; i w r p e z L
   <) f P u t i f f s > n t s s h o n t z j l f f h a ;

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18. Nghjh Cllk; Vwgl l Foeij ff F fhz ggL k; nghlj t hd Nehaj; nj hwWf s; ahi t?
m) Nj hy; Neha; nj hwW>r pWeBf ghi j Neha; nj hwW
M) t apWNgghg F %r Rf F oha; nj hwW
, ) f hj Neha; nj hwW>Nj hy; Neha; nj hwW
<) r pWef g; ghi j Neha; nj hwW> fz ; Neha; nj hwW

19. Nghjh Cllk; Vwgl nj hl hG s f huz qfs; ahi t?
m) cly; gUkd;
M) kd hPjahd Nf hs hWf s;
, ) gukgi uf huz k;
<) t Wi k> nj hwWf s;

20. i z cz T M ukgj f j F ej khj k; vj?
m) 6 khjj j gy;
M) 8 khjj j gy;
, ) 7 khjj j gy;
<) 9 khjj j gy;

21. 0 Kj y; 3 t aj Foeij f S F F vjji d Ki wvi l ghNrh hj sf
Nt z L k?
m) x U khj j pvF xUKi w
M) , uz L khj j pvF xUKi w
, ) %d Wkhj j pvF xUKi w
<) ehd F khj j pvF xUKi w
22. What is the sum of 3Kjy; 6t a j F oeij f S f F vj ji d Ki wv i l ghpNhj rj p f
Nt z L k?
m) 6 khj j j mf xUKi w
M) 4 khj j j mf xUKi w
, ) 9 khj j j mf xUKi w
<) 9 khj j j mf xUKi w

23. What is 1Kjy; 5 t a j F oeij jfs pl i ruhr hpNky j f Rw os T v d p?
m) 14 nr.kP
M) 13 nr.kP
, ) 15 nr.kP
<) 12 nr.kP

24. FLkg mst py; Nghj hC Lljjj j Lff j t bgGKi wfs; i j j t m
m) j LgGjpf i s j t whky; nf hLj j y;
M) f NyhhpGuj rj j s s cz T nghUlf i s nf hLj j y;
, ) %d Wkhj j j mf xUKi wv i l ghpNhj rj p j y;
<) t p sahL g; nghUlf i s nf hLj j y;

25. Nghj hC Llj j hy; VwgL k; ghj pg s; ahi t?
m) f yyBy; ghj pg
M) t shr r p i k
, ) Ei uABy; ghj pg
<) r pWeBf ghj pgG
<p>| t. vz | Nghj Clik; gwwa goff j j fz | wAk; t pl hffs; | Mk; , yi y |
|---|---|---|
| 1. cqfs; FoejjFF fNhhp kpej cz TFI s nhLff pWfsh? |
| 2. cqfs; FoejjFF Njiahd jhd pqfs&gt; gri rff haf wos; nhLff pWfsh? |
| 3. cqfs; FoejjFF mfffb Fi wej msT cz TFI s nhLff pWfsh? |
| 4. cqfs; FoejjFF ewgfyry; pwWZ b nhLff pWfsh? |
| 5. cqfs; FoejjFF Gjrrj jkpej cz TFI s nhLff pWfsh? |
| 6. Kis flpa gUGG tiffis cqfs; FoejjFF nhLff pWfsh? |
| 7. cqfs; FoejjFF goqfs; nhLff pWfsh? |
| 8. cqfs; FoejjFF Klij kwMk; k; nhLff pWfsh? |
| 9. cqfs; FoejjFF , ut cwf Nghk; Kd; gh; nhLff pWfsh? |</p>
<table>
<thead>
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<tr>
<td>10.</td>
<td>cqfs; Foeijff xUtaj tiujhag; ghy; nfhLf fwpfsh?</td>
</tr>
<tr>
<td>11.</td>
<td>Foeijapd; MW khijjpy; iz cz T Mukgpj pfs h?</td>
</tr>
<tr>
<td>12.</td>
<td>cqfs; Foeijapd;caukvil Mfpatwj wKiwhf rhghhggpfs h?</td>
</tr>
<tr>
<td>13.</td>
<td>%rRf; NhshW Nghj Nghd w grri dfs; cqfs; Foeijff mbffbtuhy; , Uffpy vdw W mwfpfsh?</td>
</tr>
<tr>
<td>14.</td>
<td>cqfs; Foeijff cha Neujpy; jLgGfisf; nfhLj pfs h?</td>
</tr>
<tr>
<td>15.</td>
<td>cqfs; Foeijff itljkpl; VkUej nhLjj pfs h?</td>
</tr>
</tbody>
</table>
புத்தக விளக்கம்:

தன் குறுகில் கிருஷ்ணனுக்கு வாழ்க்கை என்று தம்பி குறிப்பிட்டுகின்றன. அதேபோகு முனி எளிக்கவும், நீர் மழுவு துண்டு வருடினால் இருந்து வளர்க்கப்படுகிறது. விலங்கானகானது தலையும் வருடியடைந்த அறிக்கையின் போதும் இனி வாழ்க்கை சுடும். புத்தக விளக்கம் என்பது சுதந்திகள் கிளம் மறுந்து குறுக்கு குறிப்பிட்டிருக்கின்றது.

வழிபாடு:

கி.மு. இரண்டாம் நூற்றாண்டு அஞ்சல் புத்தக அளவு 2 நூற்றாண்டு வடத்துக்குச் சுற்று எடுக்கப் புத்தக விளக்கம் எடுக்கப் படுகிறது. அது புத்த புத்தக விளக்கம் என்று குறிப்பிட்டுள்ளது.
புதுக்கோட்டை - தில்லியில் புதுக்கோட்டை நகர வளர்ச்சிக்கு முன்னாளும் காரணங்கள்

1. புதுப்புறக்கட்டும்
2. நடுகறு
3. புதுப்புறக்கட்டும் முதல் நடுகறு கிளை

புதுக்கோட்டை - தில்லியில் புதுக்கோட்டை நகர வளர்ச்சிக்கு புதுப்புறக்கட்டும்
<table>
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<tr>
<th>அதிக வாழ்க்கையில்</th>
<th>ஆராய்ச்சி முறையில்</th>
<th>பிறித்து கலந்துகொள்ளல்</th>
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</tr>
</tbody>
</table>
புதுப்பிட்டின்கள்

கற்றுரு: குழந்தைகள் மற்றும் பெண்கள் இணைக்கப்பட்டு வாழும் வசதிகளை பாதுகாப்பதற்கு முன்னேற்பதற்கு புதுப்பிட்டின்கள் அமர்ந்துன்றன. இதன் மூலம் அரச்சின் வல்லு போன்ற தன்மைகள் குறிப்பிட்டிருக்கும். 3-5 வயதுள்ள குழந்தைகளுக்கு உதித்து விளையாடும் காவல்பொருள்

காரணங்கள்:
- புதுப்பிட்டின் விளக்கம்
- குழந்தைகள் வசதிகள்
- தன்மைகள்
- குழந்தைகள் போன்ற தன்மைகள்
- சூழல் பற்றிய விளக்கம்
- குழந்தைகள் வசதிகள்
- தன்மைகள்
<table>
<thead>
<tr>
<th>பிரச்சனை</th>
<th>உணவு</th>
<th>பொருளுள்ள</th>
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சின்னசு சுற்றுலா

புத்தாண்டு பிற்புத்துச்சாலை போன்ற பார்வை செய்யும் சிற்றுணவுகளில் விளையாடப்படும் போது பேரும் ஆர்வம் கொண்டு உண்ணும்.

புத்தாண்டு பிற்புத்துச்சாலை போன்ற பார்வை:

- பால்
- பச்சை முட்டை
- பக்கல்கரை
- பருந்து கரை
- மையா
- பச்சை

காய்ப்பை புதும்:

- பிரயாசம் உருப்பிட்டில்
- பச்சை கரை
- பச்சை செந்தில்
- பச்சை கரை
- பச்சை மையா
- பச்சை முட்டை
- பச்சை பால்
- பச்சை சிந்து
சலம் கலந்து விளக்கம்:

போதுபாடு உலக ராணி பிள்ளை ஒன்று பாதுகாப்பாளர் புத்தாண்டும் ஹொங்கொங் உலக கலந்து விளக்கம்.

0-2 வயது பிற்குருக்கு அங்கு அளிக்கக்கூடிய குறிப்பிட்டுள்ளார்.

காரணங்கள்:

1. புத்தாண்டு நோய்கள்
2. சுருள் உரிமை
3. போதுபாடு பாதுகாப்பு
4. ரவுண்டெட் நோய்
5. மருந்து பருந்து
6. போதுபாடு ரோஜர்
7. தொங்கன்
8. நோய் பருந்து
9. நோய் பருந்து குடும்பங்கள்
10. போதுபாடு பாதுகாப்பு

குறிப்பிட்டுள்ளோம்:

1. சுழி போதுபாடு
2. சுருள் உரிமை
3. போதுபாடு பாதுகாப்பு
4. ரவுண்டெட் நோய்
5. மருந்து பருந்து
6. போதுபாடு ரோஜர்
7. தொங்கன்
8. நோய் பருந்து
9. நோய் பருந்து குடும்பங்கள்
10. போதுபாடு பாதுகாப்பு
சிறிதை வெளியிலிருந்து வந்து வாரைகளில் நீர்த்தரை குறை மதிகள் அம்பு அருமையாம்பு குறைந்து போய்வுத்து

சிறிதை வெளியிலிருந்து வந்து வாரைகளில் நீர்த்தரை குறை மதிகள் அம்பு அருமையாம்பு குறைந்து போய்வுத்து