

**A STUDY TO ASSESS THE KNOWLEDGE ON  
SELECTED GASTRO INTESTINAL PROBLEMS OF  
INFANTS AMONG MOTHERS IN A SELECTED RURAL  
AREA, KUMARAMANGALAM, TIRUCHENGODU.**

**By**

**Mrs.P.SENTHAMARAI.**



**VIVEKANANDHA COLLEGE OF NURSING**

*(Affiliated to the Tamil Nadu Dr.M.G.R.Medical University,Chennai-32)*

**ELAYAMPALAYAM,TIRUCHENGODU,PIN-637205**

**TAMILNADU.**

**APRIL 2012**

**A STUDY TO ASSESS THE KNOWLEDGE ON  
SELECTED GASTRO INTESTINAL PROBLEMS OF  
INFANTS AMONG MOTHERS IN A SELECTED RURAL  
AREA, KUMARAMANGALAM, TIRUCHENGODU.**

**RESEARCH GUIDE:** \_\_\_\_\_

**Prof.R.KANAGAVALLI,M.Sc (N)., (Ph.D.),**  
PRINCIPAL,  
VIVEKANANDHA COLLEGE OF NURSING,  
ELAYAMPALAYAM,  
TIRUCHENGODU-637205

**CLINICAL SPECIALITY GUIDE:** \_\_\_\_\_

**Prof.L.PARIMALA DEVI, MSc (N).,**  
DEPARTMENT OF CHILD HEALTH NURSING,  
VIVEKANANDHA COLLEGE OF NURSING,  
ELAYAMPALAYAM,  
TIRUCHENGODU-637205

**VIVA VOCE:**

**1. INTERNAL EXAMINER**

**2. EXTERNAL EXAMINER**

*Submitted in partial fulfillment of the requirements for the  
DEGREE OF MASTER OF SCIENCE (NURSING)  
The Tamil Nadu Dr.M.G.R.Medical university,Chennai-32*

*APRIL-2012*



**VIVEKANANDHA COLLEGE OF NURSING**  
(Affiliated to the Tamilnadu Dr.M.G.R. Medical University)  
**Elayampalayam, Tiruchengode – 637 205, Tamilnadu**  
**Phone: 04288 – 234561**

---

---

## **CERTIFICATE**

This to certify that this thesis, titled “**A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM, TIRUCHENGODU**” Submitted by **Mrs.P. SENTHAMARAI, M.Sc Nursing, (2010-2012 Batch)** Vivekanandha College of Nursing in partial fulfillment of the requirement of the Degree of Master of Science (Nursing) from the Tamil Nadu Dr.M.G.R. Medical University is her original work carried out under our guidance.

This thesis or any part of it has not been previously submitted for any other Degree or Diploma.

**Prof. R. KANAGAVALLI, M.Sc (N), Ph.D.,**  
**PRINCIPAL**

**SPONSORED BY**  
**ANGAMMAL EDUCATIONAL TRUST, ELAYAMPALAYAM.**

## **DECLARATION**

*I here by declare that this thesis entitled “**A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM, TIRUCHENGODU**” is the outcome of the original work undertaken and carried out by me under the guidance and direct supervision of **Prof.R.KANAGAVALLI, M.Sc(N), (Ph.D.,)** and speciality guide **Prof.L.PARIMALA DEVI, M.Sc(N),**Department of Child Health Nursing, Vivekanandha College of Nursing,(Sponsored by Angammal Educational Trust), Elayampalayam, Tiruchengodu, Namakkal District.*

*I also declare that the material of this thesis has not formed in any way the basis for award of any other degree, diploma or Associate fellowship previously of the Tamil Nadu Dr. M.G.R. Medical University.*

**Mrs.P.SENTHAMARAI,**

Vivekanandha college of nursing,

Elayampalayam, Tiruchengodu.

Place: Elayampalayam

Date:

## ACKNOWLEDGEMENT

*Every good and perfect gift is from above , coming down from the father of heavenly lights, I thank and praise **GOD** for all the wisdom, knowledge, strength and guidance which led to the completion of this work.*

*It is with gratitude that I wish to acknowledge all those who have enriched and crystallized my study.*

*I extent heartfelt thanks to **Vidhya Ratna, Rastriya Rattan, Hind Rattan, Kalviyogi, Prof.Dr.M.KARUNANITHI, B.Pharm.,M.S, Ph.D., (D.Lit.,)** The Chairman and Secretary of Vivekanandha group of institutions to undertake this investigation in Vivekanandha college of nursing, Elayampalayam.*

*Nursing is a noble profession and the teacher who are equally on the same pedestal. It is initiation and guidance of my teachers and well- wishers who have the strength in my career at all levels.*

*I am very grateful and thankful to **Prof.R.KANAGAVALLI, M.Sc (N), [Ph.D.,]** Principal, Vivekanandha college of nursing for her valuable suggestions, constant guidance, genuine concern, continuous encouragement and constructive criticism which contributed towards completion of the study.*

*It is my privilege to express my deep sense of gratitude to **Prof.K.KAMALA, MSc (N)., [Ph.D.,]** Principal, Vivekanandha nursing College for women, her constant and untiring guidance, who awakened my thought, instilled the essence of confidence, implanted the courageous spirit with highly instructive suggestions and precious advice throughout my effort in successful bringing out the thesis.*

*I sincerely express my heartfelt thanks to **Prof.L.PARIMADEVI, MSc(N),** department of Child Health Nursing, Vivekanandha College of Nursing, Elayampalayam, for her motherly attitude, dexterous and expert guidance, valuable suggestions, affectionate enduring support, timely motivation and enthusiastic words which kept me working towards the successful completion of the study.*

*I wish to express my whole hearted gratitude to my esteemed **Prof.M.GEETHA, MSc(N),** Vice Principal, Vivekanandha college of nursing for providing me with constant care, concern and encouragement for this endeavour.*

*My humblest thanks to my class co-ordinator **Mrs.MANOHARI, MSc(N),** department of Obstetrics and gynaecology, Vivekanandha College of Nursing for her valuable suggestion and encouragement.*

*I consider myself fortunate enough to have been piloted by all the **P.G.FACULTY MEMBERS** of Vivekanandha College of Nursing for their guidance and support enabled me to do the work. I shall always be thankful to their constant encouragement, valuable in depth discussion and suggestion throughout the study.*

*I own my special thanks to all the **SUBJECT EXPERTS** who spent their valuable time for validating my tool.*

*I express my sincere and special thanks to **Mr.RAVICHANDREN,** Lecturer in Biostatistics, for his valuable guidance and advice in statistical analysis and presentation of data.*

*It would be a gravious lapse on my part if I do not thank **ALL MY PARTICIPANTS** who enthusiastically participated in the study and without their co-operation the study would have remained a dream.*

*I am grateful and thankful to the **TAMIL and ENGLISH TEACHERS** for sharing their valuable time in translating the tool and editing the thesis.*

*I am thankful to the **LIBRARIAN** of Vivekanandha College of Nursing, Elayampalayam for helping me with literature work and for extending library facilities throughout the study.*

*I extent my sincere thanks to **SRI KRISHNA COMPUTERS**, Five Road,Salem, for thesis manuscript.*

*I am indebted to **My Uncle (Mr.R.BALASUBRAMANI), Aunty (Mrs. B.KALAIVANI) and PARENTS(Mr.PERIYASAMY and P.GNANA SUNDARI)** for their constant encouragement without whom this study would have been impossible.*

*I am very much grateful to my beloved **Husband Mr.S. JAYACHANDRAN**, for his support, prayers, constant encouragement, valuable suggestions, timely help, which boosted up my morale during the course of this study and to my beloved **Daughter S.NEGA SRI** for her co-operation, sacrifice and adjustments.*

*I express my heartfelt gratitude to **my IN-LAWS, and MY FAMILY MEMBERS** for their support and help.*

*I render my deep sense of gratitude to **my CLASSMATES** for their timely help, support and cooperation.*

*I thank all my well wishers who helped me directly and indirectly.*

**Mrs.P.SENTHAMARAI**

## **ABSTRACT**

**“A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM,TIRUCHENGODU”**, was conducted by **Mrs.P.SENTHAMARAI** in partial fulfillment of the requirement for the degree of master of nursing during the year 2010-2012.

### **THE OBJECTIVES OF THE STUDY ARE**

- ❖ To assess the knowledge of mothers regarding the selected gastrointestinal problems of infants.
- ❖ To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.
- ❖ To prepare a health education package on selected gastro intestinal problems of infants.

The research design adopted for the study was descriptive in nature. Totally 80 mothers having infants from kumaramangalam village were selected for the study.80 mothers were selected for this study by convenient sampling method.

A semi-structured interview schedule was developed to collect data from the sample, it has 2sections, section A deals with socio demographic



variables of the mothers. Section B consist of 40 questions to assess the knowledge of selected gastro intestinal problems of infants among mothers.

Collected data was analyzed by using descriptive and inferential statistics in terms of frequencies percentage, mean, standard deviation and chi-square analysis.

### **SUMMARY OF THE MAJOR FINDINGS:**

#### **Findings related to selected socio demographic variables:**

- ❖ Out of 80 mothers 17 (21.25%) were in the age group of less than 20 years, 55 (68.75%) were in the age group of 21 – 30 years, 8 (10%) were in the age group of 31 – 40 years and none of them were above 40 years.
- ❖ Majority of the mothers 63 (78.75%) were belongs to Hindu, 15 (18.75%) of mothers were belongs to Christian and 2 (2.5%) were belongs to Muslim.
- ❖ 4 (5%) were illiteracy, 47 (58.75%) of the mothers had completed primary education, 24 (30%) were studied upto secondary education and only 5 (6.25%) were graduates.
- ❖ Majority of the mothers 56 (70%) were house wife, 8 (10%) were cooly, 8 (10%) were self employee, 6 (7.5%) were private employee and 2 (2.5%) were government employees.

- ❖ Out of 80 mothers 45 (56.25%) were getting below Rs. 2000 per month of family income, 19 (23.75%) were getting Rs. 2001 – 3000, 11 (13.75%) were getting Rs. 3001 – 4000 and 5 (6.25%) were getting above Rs. 4001 of monthly income.
- ❖ 55 (68.75%) mothers were belongs to nuclear family and 25 (31.25%) mothers were belongs to joint family.
- ❖ 39 (48.75%) mothers have one child, 35 (43.75%) mothers have two children and 6 (7.5%) mothers have more than two children.
- ❖ 63 (78.75%) of the mothers fetch water from public tap, 16 (20%) of them taking water from bore well and only 1(1.25%) of the mother was using well water.
- ❖ 17 (21.25%) of the mothers were living in pucca house, 45 (56.25%) of them were in katcha house and 18 (22.5%) of the mothers were in hut.
- ❖ 41 (51.25%) received information on selected gastro intestinal problems of infants from family members, 6 (7.5%) of the mothers were received information from friends, 29 (36.25%) of them received from health workers and 4 (5%) from mass media.

**Finding related to knowledge score of mothers:**

The results of the study revealed that 68 (85%) of the mothers were having inadequate knowledge, 11(13.75%) were having moderate knowledge and only 1 (1.25%) was having adequate knowledge.

The mean score percentage of knowledge regarding infants was 47%, abdominal colic was 41.23%, gastro esophageal reflux was 44.6%, vomiting was 51.45%, constipation was 45.6% and diarrhea was 53.8%.

The over all knowledge score of the mothers regarding selected gastro intestinal problems of infants were 48.31% which implies that they have inadequate knowledge regarding selected gastro intestinal problems of infants.

**Findings regarding the relationship between the selected socio demographic variables and knowledge level of mothers:**

The investigator tries to find out the relationship between the knowledge of mothers with age, religion, education, occupation, family income, type of family, number of children, source of water supply, type of house and source of information. The chi-square test was used to determine the statistical significance of the mean score, it was found that age, education, number of children and source of information was significant at 5% level, but religion, occupation, family income, type of family, source of water supply and type of house are not significant.

The health education pamphlet was developed for mothers regarding the selected gastro intestinal problems of infants.

**RECOMMENDATIONS:**

**Based on the findings the following recommendations were made:**

- ❖ The study can be replicated using a large sample, there by findings can be generalized.

- ❖ A comparative study can be conducted to assess the knowledge regarding selected gastro intestinal problems among mothers having infants residing in urban and rural area.
- ❖ A comparative study can be conducted to assess the knowledge regarding selected gastro intestinal problems among illiterate and literate mothers having infants.
- ❖ A quasi experimental study can be conducted with a structured teaching programme on selected gastro intestinal problems of infants among mothers.
- ❖ Observational study can be conducted to find out the home management of selected gastro intestinal problems of infants in community setting.
- ❖ Health professional can be instructed to conduct the health education programme on selected gastro intestinal problems of infants in their health unit.
- ❖ Mass communication through regional language should be provided to educate the public regarding the selected gastrointestinal problems of infant.
- ❖ A similar study can be conducted by using experimental and control group.

## TABLE OF CONTENTS

CHAPTER NO	CONTENTS	PAGE NO
<b>1</b>	<b>INTRODUCTION</b>	<b>1-17</b>
	<ul style="list-style-type: none"> <li>• Need for the study</li> <li>• Statement of the problem</li> <li>• Objectives of the study</li> <li>• Operational definitions</li> <li>• Assumptions</li> <li>• Limitations of the study</li> <li>• Conceptual framework</li> </ul>	<p>8</p> <p>12</p> <p>12</p> <p>12</p> <p>13</p> <p>13</p> <p>14</p>
<b>II</b>	<b>REVIEW OF LITERATURE</b>	18-40
<b>III</b>	<b>METHODOLOGY</b>	41-49
	<ul style="list-style-type: none"> <li>• Research approach</li> <li>• Research design</li> <li>• Study setting</li> <li>• Target population</li> <li>• Sample and sampling technique</li> <li>• Sample selection criteria</li> <li>• Selection and development of instrument</li> <li>• Description of the tool</li> <li>• Content validity</li> <li>• Reliability of the instrument</li> <li>• Pilot study</li> <li>• Data collection procedure</li> <li>• Plan for data analysis</li> </ul>	<p>42</p> <p>42</p> <p>44</p> <p>44</p> <p>45</p> <p>45</p> <p>45</p> <p>46</p> <p>47</p> <p>47</p> <p>47</p> <p>48</p> <p>48</p>

<b>IV</b>	<b>DATA ANALYSIS, INTERPRETATION AND DISCUSSION</b>	50 – 72
<b>V</b>	<b>SUMMARY, FINDINGS, CONCLUSION, IMPLICATIONS AND RECOMMENDATION</b>	73-82
	<ul style="list-style-type: none"> <li>• Summary</li> <li>• Major findings of the study</li> <li>• Conclusion</li> <li>• Implications</li> <li>• Recommendations</li> </ul>	73 74 77 77 80
	<b>REFERENCES</b>	83-96
	<b>APPENDICES</b>	97-140

## LIST OF TABLES

<b>SL. NO</b>	<b>TITLE</b>	<b>PAGE NO</b>
4.1.1	Distribution of mothers by age	52
4.1.2	Distribution of mothers by religion	53
4.1.3	Distribution of mothers by educational qualification	54
4.1.4	Distribution of mothers by occupation	55
4.1.5	Distribution of mothers by family income	56
4.1.6	Distribution of mothers by type of family	57
4.1.7	Distribution of mothers by number of children	58
4.1.8	Distribution of mothers by source of water supply	59
4.1.9	Distribution of mothers by type of house	60
4.1.10	Distribution of mothers by source of information	61
4.2.1	Knowledge level of mothers regarding selected gastro intestinal problems of infants	62
4.2.2	Knowledge score on selected gastro intestinal problems of infants over different aspects	64
4.2.3	Overall knowledge score on selected gastro intestinal problems of infants	66
4.3.1	Association between the knowledge score on selected gastro intestinal problems of infants with socio demographic variables	67

## LIST OF FIGURES

SL. NO	TITLE	PAGE NO
1.1	Conceptual Framework	17
3.1	Schematic representation of research design	43
4.1.1	Distribution of mothers by age	52
4.1.2	Distribution of mothers by religion	53
4.1.3	Distribution of mothers by educational qualification	54
4.1.4	Distribution of mothers by occupation	55
4.1.5	Distribution of mothers by family income	56
4.1.6	Distribution of mothers by type of family	57
4.1.7	Distribution of mothers by number of children	58
4.1.8	Distribution of mothers by source of water supply	59
4.1.9	Distribution of mothers by type of house	60
4.1.10	Distribution of mothers by source of information	61
4.2.1	Knowledge level of mothers regarding selected gastro intestinal problems of infants	62
4.2.2	Knowledge score on selected gastro intestinal problems of infants over different aspects	64



## LIST OF APPENDICES

SL. NO	TITLE	PAGE NO
A	Letter seeking permission to conduct the study	97
B	Letter granting permission to conduct the study	99
C	Letter for validation of the tool	100
D	Letter seeking permission from the participants	102
E	Semi structured interview schedule	103
F	Evaluation criteria checklist for validation of the tool	128
G	Certification of validation	129
H	Health Education Pamphlet	130

# CHAPTER-I

## INTRODUCTION

**“A baby is a blank cheque made payable to the human race.”**

**[Barbara Christine seifert: 2011].**

The miracle of life begins at conception and continues through out the life span. The magnificence of this miracle is encountered during infancy. Infants are defined as one month to one year old. [Nicki And Barbara: 2002]

The period from birth to 12 months of life is known as infancy period. The youngest children those from newborn to walking are called infants. [Mena.J:2000]

The word infant is derived from Greek and Latin and means literally “One who does not speak”. Infancy is defined as the time from birth to 12 months of age, when children begins to speak in sentences consisting of two words. During infancy, rapid physical growth and maturation are primarily important. [Susan Rowen James: 2007]

An infants or baby is the very young off spring of a human or other mammals and such. A newborn is an infant who is within hours, days or upto a few weeks from birth. The term infant is derived from the “ Latin” word “infans” meaning “unable to speak” or “speechless”. It is typically applied to children between the ages of one month and 12 months.

From birth to under 4 weeks (<28 days) of age is called a neonate. First week of life (<7 days or <168 hours) is known as early neonatal period. Late neonatal period extends from 7<sup>th</sup> to <28<sup>th</sup> day. Period of infancy from 28 days to <365 days of life is known as post neonatal period. [Op Ghai:2010]

Infants (0-1 year) constitute 2.92 percent of the total population in India. 136 million children born each year in the world. Although the chances of survival of these newborns has improved by 50 percent in the last 20 years, the first few hours, days and months of their lives are still an obstacle race. From the time of birth 20-30 percent of babies are under weight. That makes them vulnerable to infection and disease. [K.Park:2009]

Infancy is characterized by the need to establish harmony between the self and the world. To achieve this harmony, the infant needs food, warmth, comfort, oral satisfaction, environmental stimulation and opportunities for self exploration and self- expression. [Susan Rowen James, 2007]

Infants become children and children become adolescents, passing through their parents lives and disappearing into adulthood, full - fledged persons with lives and futures of their own. Through out the periods of growth and development, however, children need parents or substitute parents to survive. [Dorothy.R. Marlow: 2006]

Children are the future of our society and special gifts to the world. Their overall health has improved and rates of death and illness in some areas have decreased, but we still must focus on children's health.[Sae Kyle: 2009]

The infant grows and develops skills more rapidly than he or she ever will again. In the brief span of a single year, this tiny, helpless bit of humanity becomes a person with strong emotions of love, fear, jealousy and anger and gains the ability to rise from a supine to an upright position and move about purposeful. [N.Jayne And Nancy:2006]

The infancy period (beginning with the newborn period and ending at 1 year), a child grows and develops from a tiny bundle of physiologic needs to a dynamo, capable of locomotion and language and ready to embark on the adventures of the toddler years. [Susan Rowen James: 2007]

The first year of life is one of rapid change for the infant. The birth weight usually doubles by about 5 months and triples by the end of the first year. Height increases by about a foot during this year. Teeth begin to erupt at about 6 months, and by the end of the first year the infant has 6 to 8 deciduous teeth. [Jane Ball, Ruth Bindler:1995]

The infant usually makes his physical needs of warmth, hunger, elimination, cleanliness and sleep and pain known to his parents by crying. This is his only method of communication until he learn to smile,

gurgles, babble and form words. Rest and sleep is the only occupation between feed, bath and play times and averages 20 hours per day. [Helen Lewer:1983]

All children are born with the potential to develop both physically and emotionally. During the first years of life, the rate at which the child develops physically is very fast. The child will proceed through a series of milestones (or stepping stones ) and will not “jump” from one stage to the next. [Leslie Robertson:1983]

Growth and development are the most important factors to be considered in the care of infants and children. [Achar's: 2005]

Infancy is defined as the period from birth to 12 months of age. Growth and development are inter related ongoing processes in infancy and childhood. Growth refers to an increase in physical size. Development is the sequential process by which infants and children gain various skills and functions. [Sae Kyle: 2009]

The infant's physical growth is influenced by genetics, the environment, ethnic background and biology. Physical growth patterns include weight , height and head circumference changes.[Secker:1999]

All children have three important needs to help achieve full potential – a feeling that they are loved, that their stomach's are supplied with wholesome food, and that they have freedom from infection. Enough evidence is on record to show that a child who feels loved and is well -

nourished, has a rather low-risk of getting serious infection. [R.K.Anand: 2007]

During the infant's first year, the parents must learn from the cues what the infant is trying to tell them. They must learn to observe their infants behavior and strive to fulfill the baby's needs. Some parents, unfortunately, are not prepared to undergo the emotional development needed in relation to their child's development. These parents particularly need help in understanding the usual steps in an infant's development, a process which the nurse can interpret for them.[Dorothy.R.Marlow,2006].

The infant mortality rate has declined dramatically since the beginning of this century. In the United States in 1900 the rate was approximately 200 per 1000 live births. By 1965, the rate was 24.7 per 1000 live births with further notable reductions to the 1977 rate of 14 and 1985 rate of 10.6.[Wegman:1986]

The world average of infant mortality rate for 1990 has been estimated at about 84 per 1000 live births. By 1995, the rate was 74 per 1000 live births, by 2000, the rate was 69 per 1000 live births, by 2005, the rate was 56 per 1000 live births, by 2006, the rate was 54.63 per 1000 live births, by 2007, the rate was 34.6 per 1000 live births, by 2008, the rate was 32.31 per 1000 live births.[C. Manivannan:2009]

Certain important measures to reduce infant mortality rate include lowest birth rate, highest literacy rate, specially female literacy, prenatal nutrition, prevention of infections, exclusive breast feeding, growth monitoring, family planning, environmental sanitation and hygienic measures. [Parul Datta: 2009]

In less well-developed countries, infectious diseases, malnutrition, ignorance, poor sanitation and the lack of medical care are among the leading causes of excessive mortality in infancy.[Dorothy.R. Marlow, 2006]

The primary function of the gastro intestinal (GI) tract is the digestion and absorption of nutrients. The gastro intestinal tract also has secretory, barrier, endocrine, immunologic functions. The extensive surface area of the gastro intestinal tract and its digestive function represent the major means of exchange between the human organism and the environment. Thus any dysfunction of the gastro intestinal tract can cause significant problems with the exchange of fluids, electrolytes and nutrients. [Carolyn.V. Daigneau: 2009]

The most common infant digestive problems are colic, gastro esophageal reflux, vomiting, constipation and diarrhea. All may occur together and are likely to be food related. The “irritable” or reactive bowel syndrome begins in infancy with colic, bloating, regurgitation, vomiting and diarrhea. [Jenkins: 2007]

Colic generally occurs during the first 3 or 4 months of life. Infants with colic suffer from sudden paroxysmal intestinal cramps caused by the production and accumulation of excess gas, which causes abdominal distention and pain. They may expel flatus or may eructate it from the stomach.[Dorothy.R. Marlow, 2006]

Physiologic gastro esophageal reflux (spitting up) is normal in infants younger than 8-12 months old. As infants grow, they spend more time upright, eat more solid foods, develop a longer and larger diameter esophagus, have a large and more compliant stomach and experience lower caloric needs per unit of body weight. As a result, most infants stop spitting up by 9 to 12 months of age. [Warren.P.Bishop: 2007]

Gastro esophageal reflux is passage of gastric contents into the esophagus. It is considered a normal physiologic process that occurs in healthy infants and children. However, when complications develop from the reflux of gastric contents back into the esophagus or oropharynx, it becomes more of a pathologic process known as gastro esophageal reflux disease (GERD). [Sea Kyle:2009]

Vomiting is the forceful ejection of gastric contents through the mouth. The infant or child who is vomiting is positioned to prevent aspiration and is observed for evidence of dehydration. Fluid and electrolyte status must be carefully monitored to avoid the possibility of electrolyte imbalance. [Mary .R. Mondozzi:2009]



Constipation is two or fewer stools per week or passage of hard, pellet-like stools for at least 2 weeks. Infants may experience symptoms of straining for prolonged periods and crying, followed by passage of soft stool. This pattern of difficult defecation is called infantile dyschezia and is present only in the first 3 months of life.[Warren .P.Bishop-2007]

Diarrhea is the second leading cause of death in children. Nearly 6,00,000 children needlessly die due to diarrheal disorders in a year world wide. In India, 1,50,000 children lose their life due to diarrhea. It is the most frequent cause for health seeking behavior by the community. [S.Shivananda:2007]

#### **NEED FOR THE STUDY:**

Health means a state of total physical, mental, and social well being and not merely the absence of disease and infirmity. Prevention is the best measure for maintaining health. [Achar's: 2005]

Care of the child is not only vital itself, but it is the most important aspect of the health of the country. Most of the parents are not interested in prevention and management of gastro intestinal problems. The parents are unable to concentrate on their infant's health due to illiteracy and poor socio economic status. The health of the children also is affected by poor personal hygiene, poor environmental sanitation and low socio economic status. [Dhar.V: 2007]

The gastro intestinal tract includes all of the structures from the mouth to the anus. The primary functions of the gastro intestinal systems are the digestion and absorption of nutrients and water, elimination of waste products, and secretion of various substances required for digestion. Babies are born with gastro intestinal tracts that are not fully mature until age two. Due to this immaturity, there are many differences between the digestive tract of the young child and that of older child or adult. Family education related to the treatment of gastro intestinal disorders are key to prevent the illness from progressing to an emergency situation. The majority of gastro intestinal disorders can be handled in an out patient setting to avoid unnecessary hospitalization, but some life – threatening problems require emergency care in the hospital.[Sae Kyle: 2009]

Infants are prone to various gastro intestinal problems. About  $\frac{3}{4}$ th of the infants are considered as unhealthy and surviving with impairment of physical and intellectual functions due to poor health status. Early detection and anticipation of the problem may prevent impairment, disability and fatal outcome. The gastro intestinal problems of infants are found in health care settings or in community health units or at home need immediate interventions. The mothers need much knowledge to play a vital role for prevention and management of gastro intestinal problems. [Parul Datta: 2007]

Colic in infancy is abdominal pain with the attendant emotional distress of the infant and his parents. Cumulative incidence rates of colic vary from 5% to 19% in different studies. Girls and boys are affected equally. Less than 5% of infants evaluated for excessive crying have an organic etiology. [Sheila Gahagan, 2007]

In infancy, gastro esophageal reflux is not always an abnormality. Physiologic gastro esophageal reflux (spitting up) is normal in infants younger than 8 to 12 months of old. Nearly half of all infants are reported to spit up at 2 months of age. Most infants stop spitting up by 9-12 months of age. The incidence rate of gastro esophageal reflux among infants are 47.6% and every 5<sup>th</sup> of 105 infants are affected. [Warren.P.Bishop: 2007]

Vomiting are common in infants and are usually part of a mild, short lived illness, frequently caused by a viral infection. 1-70% of infants are affected. [Robert.M. Kliegman: 2006]

Constipation is a common problem in infants. The incidence rate of constipation among infants are 1-30%. [Karen.J. Marcdante: 2006]

Diarrheal diseases constitute a leading cause of morbidity and mortality among children under five years of age in developing countries. On an average 3.3 episodes of diarrhea are experienced per child per year but in some areas the average exceeds 9 episodes per year. More than 2 million deaths are estimated to result each year as a consequences of

diarrheal disease in under fives. 8% of these deaths occurs in the first 2 years of life. 14 – 21% of infants are affected every year. [A.K. Patwari: 2007]

Mother is a primary nurse and important care giver. It would be necessary to improve the maternal knowledge about causes, signs and symptoms, management and prevention of selected gastro intestinal problems and for recognition of early danger signs and prompting them to seek appropriate medical care. This helps to reduce the complications of gastro intestinal problems. If the mothers have adequate knowledge on selected gastro intestinal problems and its management that will help to achieve control of selected gastro intestinal problems at domiciliary level. So the investigator felt that mothers having infants need to know about the selected gastro intestinal problems like abdominal colic, gastro esophageal reflux, vomiting, constipation, diarrhea and seek medical help in case the infant has got the problem. Also mother should be able to manage the infant in the home situations. Hence the investigator has selected the study to assess the knowledge on selected gastro intestinal problems of infants among mothers in a selected rural area.

## **STATEMENT OF THE PROBLEM:**

A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM, TIRUCHENGODU.

## **OBJECTIVES:**

1. To assess the knowledge of mothers regarding the selected gastrointestinal problems of infants.
2. To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.
3. To prepare a health education package on selected gastro intestinal problems of infants.

## **OPERATIONAL DEFINITIONS:**

### **Knowledge:**

Knowledge is referred as the correct response by mothers regarding causes, signs and symptoms, management, prevention and complications of selected gastro intestinal problems of infants are measured by semi structured interview schedule method.

### **Gastro Intestinal Problems:**

Gastro intestinal problems refers to an illness that occur frequently among infants. The gastro intestinal problems are abdominal colic, gastro esophageal reflux, constipation, vomiting and diarrhea.

### **Infants:**

Infants refers to children in the age group of birth to one year.

### **ASSUMPTION:**

1. The mothers may have inadequate knowledge regarding selected gastro intestinal problems of infants and its management.
2. Knowledge of mothers regarding selected gastro intestinal problems of infants may influence by different socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.

### **LIMITATIONS:**

1. Study was limited with only mothers having infants.
2. Study was conducted in only one rural area, so the findings cannot be generalized.

## **CONCEPTUAL FRAMEWORK**

Conceptual framework is the conceptual underpinning of a study. It refers to an understanding of the phenomenon of interest and reflects the assumptions and philosophical view of the investigation. (Denise. F. Polit, 2008)

According to Polit and Hungler (2003) a conceptual framework is inter-related concepts on an instruction that are assembled together in some rational scheme by virtue of their relevance to a common theme. It is a device that helps to stimulate research and the extension of knowledge by providing both direction and impetus.

Pender's health promotion model (1996) was used as conceptual framework of this study. According to this model, Health promotions defined as activities directed towards the development of resources that maintain or enhance an individual well being.

The individual perception is the primary motivational mechanism for acquisition and maintain of health promoting behaviors exerts direct influence on health promoting behavior (Frank, 1990).

Pender states that according to the health promotion model, modifying factors exert their influence through cognitive perceptual mechanisms that directly affect the perception of an individual. Individual behavior cognitive perceptual factors constitute the exclusive source of all the connection between the modifying factors and healthy behavior.

The modifying factors include demographic factors such as age, religion, educational qualification, occupation, family income, type of family, number of children in the family, source of water supply, type of house and source of information. Situational factors and behavioral factors such as cognitive and psychomotor will make the individual to develop proper skill necessary to carryout health behavior.

Therefore the investigator felt that the Pender's health promotion model was suitable for the present study.

The model focuses on 3 areas,

- I. Cognitive perceptual factors (individual perception).
- II. Contributing factors (Socio demographic characteristics, knowledge factor and situational factors of the subjects).
- III. Promotion of behavior to gain adequate knowledge regarding selected gastro intestinal problems.

The cognitive perceptual factors include the mothers awareness regarding meaning, causes, signs and symptoms, management, complications and prevention of selected gastro intestinal problems of infants.

The contributing factors include socio demographic variables of mothers having infants such as age, religion, educational qualification, occupation, family income, type of family, number of children in the family, source of water supply type of house and source of information.



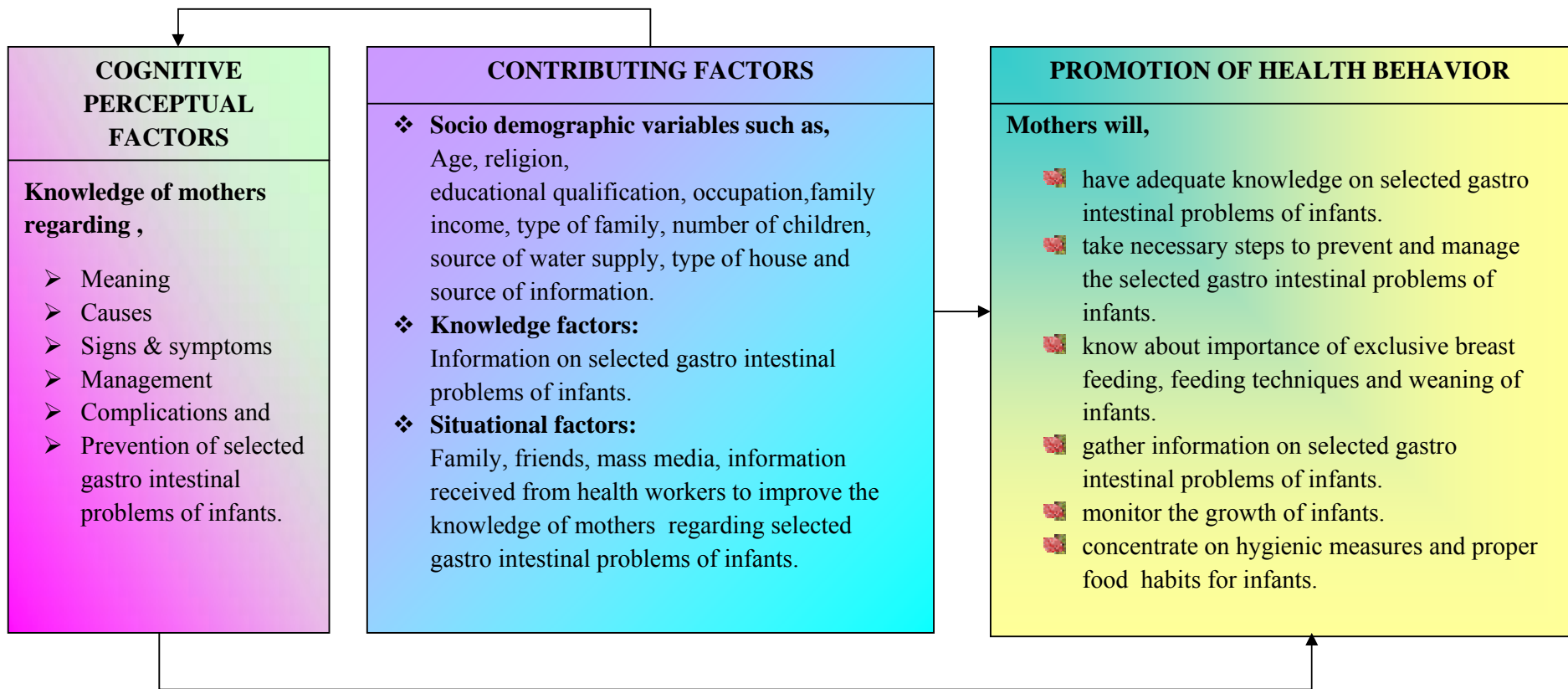
The situation factors include family, friends, health workers and information received from mass media to improve the knowledge of mothers regarding selected gastro intestinal problems of infants. The contributing factors will enhance the mothers to acquire knowledge regarding selected gastro intestinal problems of infants.

The expected health promoting behavior are, mothers having infants will able to provide knowledge about meaning, causes, signs and symptoms, management, complications and prevention of selected gastro intestinal problems of infants. Also they will develop skill in early identification of the problem and to take necessary actions to prevent the complications.

**SUMMARY:**

This chapter viewed about researcher's interest, need for the study, statement of the problem, objectives, operational definitions, assumptions, limitations and conceptual frame work of the study.

**FIGURE-1.1: ADOPTED FROM PENDER'S HEALTH PROMOTION MODEL (1996)**



## **CHAPTER –II**

### **REVIEW OF LITERATURE**

Review of literature is a broad systematic and critical collection and evaluation of the important scholarly published literature as well as unpublished materials. The review serves the evidence and essential background for any research. (BT. Basavanthappa, 2004).

Review of literature is a crucial summary of research on a topic of interest generally prepared to put a research problem in context to identify gaps and weakness in prior studies, so as to justify a new investigation. (Polit and Hungler, 2004)

The investigator reviewed the related literature and organized into two sections.

- Literature related to selected gastro intestinal problems of infants.
- Studies related to selected gastro intestinal problems of infants.

#### **LITERATURE RELATED TO SELECTED GASTRO- INTESTINAL PROBLEMS OF INFANTS:**

The extensive surface area of the gastro intestinal (GI) tract and its digestive function represent the major means of exchange between the human organism and the environment. Inflammatory and malabsorptive disorders impair the functional integrity of the gastro intestinal tract. The infant's intestine is extremely vulnerable to infection. The most common

infant digestive problems are colic, gastro esophageal reflux, constipation, diarrhea, abdominal pain, vomiting, nausea, and abdominal distention. [Marsha.L.Ellett, 2009]

Colic is generally described as paroxysmal abdominal pain or cramping that is manifested by loud crying and drawing the legs up to the abdomen.[David Wilson, 2009]

Colic is more common in young infants under the age of 3 months than in older infants. Colic is reported to occur in 5% to 3% of all infants. [Neu and Robinson, 2003]

Colic has no particular affinity in regard to the gender, race or socio economic status of the infant and family. [Ellett, 2003]

Too rapid feeding, over eating, swallowing excessive air, improper feeding technique (especially in positioning and burping), emotional stress or tension between parent and child, cow's milk intolerance, parental smoking , lactase deficiency, central nervous system immaturity and neuro chemical dysregulation in the brain have also been proposed as potential causes of colic. [Duro, 2002]

Colic often is diagnosed using Wessel's "rule of threes"- crying for more than three hours per day for more than three days per week for more than three weeks. [Sheila Gahagan, 2007]

Herbal (chamomile) tea offered at the onset of crying and up to three times daily has proved effective in relieving the symptoms of colic in some infants. [Crotteau, Wright, 1993]

Abdominal colic of the baby increases anxiety and tension of the mother. Baby should be placed in upright position and burping can be done to remove swallowed air. Psychological bonding with infant to be improved. Presence of any organic causes to be excluded. Frequent small amount of feeding and modification of feeding technique are very important. Antispasmodic drugs may be administered to relief the colic. [Parul Datta, 2007]

Gastro esophageal reflux(chalasia) is a dysfunctional or incompetence of the distal esophageal sphincter, where the tubular esophagus enters the bulge of the stomach, causing a frequent return of stomach contents into the esophagus and vomiting. [ Dorothy.R. Marlow, 2006]

Approximately 50% of infant's less than 2 months old are reported to have gastro esophageal reflux. [Suwandhi and Schwarz, 2006]

The physiologic gastro esophageal reflux usually resolves spontaneously by 1 year of age. Gastro esophageal reflux becomes a disease when complications such as failure to thrive, bleeding or dysphagia develop. [Zeiter and Hyams,1999]

Certain conditions predispose children to a high prevalence of gastro esophageal reflux disease including neurologic impairment, hiatal hernia, repaired esophageal atresia and morbid obesity. [Ton and Schwarz, 2006]

The pathogenesis of gastro esophageal reflux is multifunctional, its primary causative mechanism likely involves inappropriate transient relaxation of the lower esophageal sphincter. [Weizman and Goldfarb, 2006]

Avoidance of certain foods that exacerbate acid reflux (eg: caffeine, citrus, tomatoes, peppermint, spicy or fried foods), lifestyle modifications (eg: weight control, small, more frequent meals) and feeding maneuvers in infants(eg:thickened feeding, upright positioning)can improve mild gastro esophageal reflux symptoms. [Marsha. L. Ellett, 2009]

Constant nasogastric feeding may be necessary for the infant with severe reflux and failure to thrive until surgery can be performed. Elevating the head of the bed 30 degrees or placing the infant in an infant seat elevated 30 degrees for 1 hour after feeding may decrease gastro esophageal reflux. Prone positioning of infants also decreases episodes of gastro esophageal reflux but is recommended only with extreme caution when the risk of gastro esophageal reflux disease complications exceeds

the risk of sudden infant death syndrome. [Cavataio and Guandalini 2005]

Healthy young infants, no treatment is necessary other than a towel on the shoulder of the care taker. For infants with complications of gastro esophageal reflux, pharmacological therapy with a proton pump inhibitor should be offered. Lesser benefits are obtained with H<sub>2</sub> receptor antagonists. Prokinetic drugs, such as metoclopramide, occasionally may be helpful by enhancing gastric emptying and increasing lower esophageal sphincter tone, but are seldom very effective. [Warren.P. Bishop, 2007]

If life threatening aspiration is present, surgical intervention may be required. Fundoplication procedures such as Nissan operation are designed to enhance the antireflux anatomy of the lower esophageal sphincter. [Christian and Buyske, 2005]

The most recent surgical advance is the introduction of the laparoscopic Nissan fundoplication. [Jackson and Askar, 2001]

Complications following fundoplication include breakdown of the wrap, small bowel obstruction, gas-bloat syndrome, infection, retching and dumping syndrome. [Rudolph and Liptak, 2001]

Vomiting is a co-ordinated motor response of the gastro intestinal and respiratory tracts that results in increased salivation followed by

forceful expulsion of the stomach contents. It occurs in 3 phases, that is a) nausea, b)retching and c) emesis.[A.K.Patwari, 2007]

Vomiting is the forceful expulsion of gastric contents through the mouth. [Ulshen, 2004]

The causes of vomiting are swallowed air due to erratic feeding, swallowed amniotic fluid or blood, faulty feeding, too much crying, septicemia or other infections such as meningitis, intra uterine infections causing encephalitis, gastro enteritis, hypoglycemia, congenital hypertrophic pyloric stenosis, hiatal hernia, cow milk allergy, uremia and galactosemia. [R.A Anderson, 2004]

In vomiting, oral rehydration is accomplished successfully in most out patient cases of simple vomiting. In the child with mild to moderate dehydration resulting from vomiting, oral feeding should be withheld for 1-2 hours after emesis, after which time oral rehydration can begin. Give the infant or child 0.5 to 2 ounces of oral rehydration solution every 15 minutes depending on child's age and size. Most infants and children can retain this small amount of fluid if fed the restricted amount every 15 minutes. As the child improves, large amounts will be tolerated. [Dale, 2004]

In vomiting, frequent small amounts of clear liquids are tolerated better than are larger amounts. Antiemetic medications should not be used in infants or young children because their side effects are



undesirable and potentially toxic. Drugs that are sometimes used include promethazine, prochlorperazine and trimethobenzamide. [Eugen A.H.Waechter, 1985]

Constipation is a very common problem seen in a pediatric practice, reportedly representing 3 % to 5% of all pediatric outpatient visits. It accounts for 25% of the referrals made to a pediatric gastroenterologist for further management of the condition. [Castiglia, 2001]

Constipation refers to the nature of the stool and not to its frequency. It is rare in breast fed infants under one year of age. Formula fed infants may develop constipation as a result of inadequate intake of food or fluid or from diets that are deficient in bulk or contain too much protein or fat. Constipation during infancy may be caused by a tight anal sphincter, which can be corrected with dilatation or by anal cracks or fissures. During the first 6 months of life, treatment consists of increasing the amount of fluid or sugar given to the infant. After solid foods are added to the diet, Constipation can be treated by increasing the fluid intake and adding cereals, vegetable and fruits to increase bulk. Prune juice (0.5 to 1 ounce), enemas or suppositories may be effective but should be used infrequently and only as temporary measures. [Dorothy.R.Marlow, 2006]

Diarrhea is either an increase in the frequency or a decrease in the consistency of stool. [Ulshen, 2004]

Diarrhea in children can either be acute or chronic. Acute infectious diarrhea (gastroenteritis) remains the leading cause of death for children worldwide. In the United States, the incidence of diarrhea varies between 1 and 2.5 episodes per child per year, leading to approximately 38 million cases, 2 to 3.7 million physicians visits, 2, 20,000 hospitalization and 325 to 425 deaths annually. [Berman 2003]

Acute diarrhea in children is most commonly caused by viruses, but it may also be related to bacterial or parasitic enteropathogens. [Berman, 2003]

Diarrheas are acute and viral in nature, therapeutic management of diarrhea is usually supportive (maintaining fluid balance and nutrition). Probiotic supplementation may decrease the length and extent of diarrhea. [Young and Huffman, 2003]

Probiotic supplementation while a child is taking antibiotics for other disorders may reduce the incidence of antibiotic related diarrhea. [Young and Huffman,2003]

Diarrhea after rehydration is achieved, it is important to encourage the child to consume a regular diet to maintain energy and growth. [Brunell, 2006]

## **STUDIES RELATED TO SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS:**

**Vander Pol R.J** and et.al., (2011) conducted a crossover study about efficacy of proton pump inhibitors in infants with gastro esophageal reflux disease. The objective of the study were to determine effectiveness and safety of proton-pump inhibitors in infants with gastro esophageal reflux disease. Respondents were 40 infants from department of Pediatric Gastroenterology and Nutrition in Emma children hospital at Netherlands. Randomized controlled trials investigating efficacy and safety of proton-pump inhibitors in infants with gastro esophageal reflux disease. They have concluded that proton pump inhibitors are not effective in reducing gastro esophageal reflux disease symptoms in infants.

**Othman.S.** and et.al., (2011) conducted a retrospective study about gastro esophageal reflux studies using milk in infants. The objectives of the study were to assess the value of multiple acquisitions in detecting position-related gastro esophageal reflux (GER). Respondents were 105 infants in King Khalid university hospital in Saudi Arabia. After 2 hours of fasting sulfur colloid was given to the infants orally along with formula or milk. Serial images were acquired in the supine, prone, right side down, and left-side down position. They have concluded that the

percentage yield of a positive GER position related technique was three-fold that of conventional single supine position.

**Damaso D Infante** and et.al., (2011) conducted a retrospective study about modification of stool's water content in constipated infants: management with an adapted infant formula. The objective of the study were to evaluate the impact of a formula with high levels of lactose and magnesium in compliance with the official regulations on stool water content as well as a parental assessment of constipation. Respondents were 30 formula-fed infants from Hospital Universitari Vall d'Hebron in Spain. Stool composition was measured by near infrared reflectance analysis (NIRA) and parents answered questions about crying associated with defecation and stool consistency at baseline and after 2 weeks of the adapted formula. In the results, after two weeks of the adopted formula, stool water content increased from  $71 \pm 8.1\%$  to  $84 \pm 5.9\%$ . There was no significant change in the stool's fat, protein or carbohydrate content. They have concluded that an adapted formula with high levels of lactose and magnesium increases stool water content and improves symptoms of constipation in formula-fed infants.

**El-Hodhod MA** and et.al., (2010) conducted a prospective study about cow's milk allergy related pediatric constipation, appropriate time of milk tolerance. The objectives of the study were to evaluate the extent of cow's milk allergy as a cause of pediatric constipation and determine

the appropriate timing of tolerance to cow milk in infants. Respondents were 60 infants from department of pediatrics in Ain shams university hospital in Egypt. The frequency of cow's milk allergy among constipated infants was 77.7%. They have concluded that tolerance to cow milk was achieved after 6 months in only 22.2% compared with 88.8% after 12 months of elimination. In the results, cow's milk allergy is shown to be a significant etiologic factor for constipation in infants.

**Soares-Weiser.K.** and et.al., (2010) conducted a retrospective study about vaccines for preventing rotavirus diarrhea. The objective of the study were to evaluate rotavirus vaccines approved for use [Rotarix, Rota Teg and Lanzhou Lamp Rotavirus (LLR)] for preventing rotavirus diarrhea. Randomized controlled trials for 17,594 samples from Cochrane. They have concluded that Rotarix and Rota Teg are effective vaccines for the prevention of rotavirus diarrhea.

**Passariello. A** and et.al., (2010) conducted a retrospective study about diarrhea in neonatal intensive care unit. The objectives of the study were to examine the frequency, causes and current treatment measures for diarrhea in newborn. Respondents were 5801 newborn from neonatal intensive care unit in university of Naples Federico in Naples. In the results, 39 cases of diarrhea (36 acute, 3 chronic) were indentified. The prevalence of diarrhea was 6.72 per 1000 hospitalized newborn. 3 infants died related to complications of diarrhea (7.7%). In 19 to 39 newborn

(48.7%) rehydration was performed exclusively by the oral route. They have concluded that diarrhea in neonates is a challenging disease condition due to the possible heterogeneous causes and severe outcomes. Particular guidelines are advocated in order to treat diarrhea in this particular setting.

**Sager.S**, and et.al., (2010) conducted a prospective study about temporal relationship between gastro esophageal reflux and rate of gastric emptying in infants. The objective of the study were to evaluate the temporal distribution of the reflux episodes and to evaluate whether the gastric emptying rate changed with the gastro esophageal reflux time or amount. Respondents were 211 infants from Istanbul University in Turkey. Reflux episodes were calculated every 10 minutes for each infants in a supine position after ingesting milk. Gastric reflux was observed in 104 infants. The number of reflux episodes were higher in the first and second 10 minutes. The lowest reflux episode was observed in the last 10 minutes suggesting that the reflux episode was decreasing by the gastric emptying. In the results, they said, there were no significant differences in the gastric emptying rates between patients who had reflux episodes beginning in the first 30 minutes of the study and those who had reflux episodes in the last 30 minutes of the study [ $p>0.5$ ]. They have concluded that the numbers of reflux episodes were not related with the gastric emptying rate.

**Savino F.** and et.al., (2010) conducted a prospective study about new treatments for infant colic. The objective of the study were to find out recent studies that have examined different kinds of plan of actions. Respondents were 60 infants from Regina Margherita children hospital from Italy. An inadequacy of lactobacilli and an higher concentration of coliform might influence the pathogenesis of infantile colic. They have concluded that pediatricians have to exclude other underlying clinical conditions with a clinical examination and prevent feeding disorders. Then, considering the favorable clinical course of the disturbance, well tolerated measures should be administer to minimize pain related to infantile colic.

**Reinthal .M** and et.al., (2009) conducted a prospective study about effects of minimal acupuncture in infants with colic. The objective of the study were to test the effect of light needling (minimal acupuncture) on crying. Respondents were 40 infants from institute of health and caring sciences in Sweden. Children were given light needling acupuncture on one point on both hands for approximately 20 seconds on four occasions. In the results, there were also significant differences between the groups for the afternoon and evening time periods. They have concluded that four treatments with light needling or one point in the hand may alleviate crying and pain related behavior without any noted side effects.

**Thorp A.W** and et.al., (2009) conducted a prospective study about ketamine associated vomiting. The objectives of the study were to determine if the rate of vomiting is dose related to intravenous ketamine. Respondents were 1000 infants' from Loma Linda university medical center in USA. Vomiting occurred in 74(7%) over all. The result shows no significant association between emesis and initial dose. They have concluded that, ketamine associated vomiting is not related to either the initial loading dose or the total dose except for a modest increase for those receiving high cumulative doses ( $>7$  mg/kg).

**Wendelschafer-Crabb.G** and et al (2009) conducted a prospective study about mucosal nerve deficiency in chronic childhood constipation. The objectives of the study were to investigate potential autonomic dysfunction by examining nerves in rectal mucosa. Respondents were 40 from university of Minnesota medical school in USA. A computer assisted neuron tracing technique was used to determine mucosal nerve density in Zamboni-fixed biopsy sections. In the results, a deficiency of mucosal nerves was observed in chronic childhood constipation when compared to children who are not constipated. They have concluded that most children with chronic constipation had decreased innervation of the rectal mucosa. Because mucosal nerves are critical for the peristaltic reflux, water secretion and absorption, their deficiency can be related to child constipation.



**Kazeem A Oshikoya** and et.al., (2009) conducted a prospective study about self-medication for infants with colic. The objective of the study were to determine the knowledge of Nigerian mothers about colic, their home-based management, extent of self-medication for the infants with colic and the types of medicines involved. Respondents were 800 mothers of infants from 20 primary health care centres in Nigeria. The results shows that, Six hundred and eighty three (85.4%) mothers had a good knowledge of colic. Incessant and excessive cry was the main clinical feature of colic identified by 430(62.9%) mothers. Three hundred and seventy eight (67.7%) infants were treated by self-medication, 157 (28.1%) sought medical intervention and 17 (3.1%) were treated at a traditional birth attendant home. Herbal medicines constituted 51.8% of the self-medicated medicines, of which 48 (26.2%) were "Ororo Ogiri". Nospamin (49.5%) and Gripe water (43.0%) were the two frequently prescribed and self-medicated medicines for infants with colic. They have concluded that, Nigerian mothers are deficient in their knowledge of colic. Self-medication was the most frequently used home-based intervention. Health education would appear necessary to improve parental management of this self-limiting condition.

**Abu-Flamreen FH**, and et.al., (2008) conducted a prospective study about viral, bacterial and parasitic etiology of infants diarrhea in Palestine. The objectives of the study were to determine the etiology of

acute diarrhea in Palestinian infants and to improve knowledge of the etiology of gastrointestinal pathogens using traditional and molecular diagnostic techniques. Respondents were 150 infants from central pediatric hospital in Palestine. The results show that shigella 9/150(6%), rotavirus 42/150(28%), Entamoeba histolytica 23/150(15%), E-coli 7/150(5%), salmonella 3/150(2%), Giardia intestinalis 1/150(1%) strongyloides stercoralis 1/150(1%) of the samples. They have concluded that rotavirus, E-coli and campylobacter, which are not routinely screened for in Palestine, were significant entero pathogens. The results highlight the value of using a combination of traditional and molecular diagnostic techniques in the diagnosis of entero pathogens related to gastroenteritis.

**Ferrer SR** and et.al., (2008) conducted a prospective study about a hierarchical model for studying risk factors for infant's diarrhea. The objective of the study was to identify factors associated with diarrhea occurrence in infants with high access to water and sanitation. Respondents were 1688 infants from city of Salvador in north eastern Brazil. 1676 controls were selected. Data collection was by a questionnaire and structured observation during home visits. Non-conditional logistic regression was used, and odds ratio and population attributable fractions were estimated. The results show that socioeconomic factors contributed most to determining diarrhea occurrence, followed by interpersonal contact, while factors related to

food preparation, the environment, water and sanitation made a smaller contribution. They have concluded that diarrhea control strategies must give greater emphasis to policies geared towards reducing person to person transmission for the prevention of diarrhea.

**Yalcin S** and et.al., ( 2008) conducted a retrospective study about clinical presentation and management of gastro esophageal reflux disease. The objective of the study were to analyze the characteristics of the pathway from the onset of clinical findings related to gastro esophageal reflux until the surgical therapy to achieve a better organization of the multiple disciplines and create the best management scheme . Respondents were 64 infants from department of pediatric surgery in Hacettepe University at Turkey.Forty-one of the 64 had anti reflux surgery primarily after presentation, in addition to selection of medical therapies and/ or other surgical interventions as a first step in the remaining 23.They have concluded that extended non responsive medical therapy is as harmful as needless surgical therapy performed prior to appropriate medical management.Their experience emphasizes that guidelines on the use of a multidisciplinary approach is the first step for successful gastro esophageal reflux disease treatment.

**Sudipta Misra** and et.al., (2007) conducted a prospective observational study about rotavirus diarrhea in children under 1 year of age. The objective of the study were to document the changing clinical

profile and prognosis of acute diarrhea in infants. Respondents were 34 infants from department of pediatrics in school of Tropical Medicine at Kolkata. Demographic, anthropometric and clinical data were collected in infants with acute diarrhea. Stool was examined under the microscope to detect rotavirus infection. 31 (91.2%) of the infants were breast fed, 18 exclusively and 13 partially. 23 had rotavirus infection. The results shows that there was no difference in the incidence of rotavirus infection between exclusively and partially breastfed infants. Continuation of feeds containing lactose did not affect prognosis. They have concluded that failure of exclusive breastfeeding to protect against rotavirus infection highlights the need for universal rotavirus vaccination.

**Timothy.F.Jones** and et.al., (2006) conducted a case control study about epidemiology of sporadic salmonella infection in infants. The objective of the study were to identify dietary and environmental risk factors for sporadic salmonellosis among infants. Respondents were 928 infants from eight states in California. Subjects were identified via active laboratory-based surveillance. Data were analyzed by using logistic regression adjusting for age. They have concluded that attention should be directed at developing effective preventive measures for this high risk population. In the results, they said attending day care with a child with diarrhea was associated with salmonellosis in infants.

**Van den Berg MM** and et.al., (2005) conducted a follow- up study about functional constipation in infants. The objective of the study were to describe the clinical course of several functional constipation in infancy. Respondents were 47 infants from Emma children's hospital in Netherlands. Follow-up data were obtained through a standardized questionnaire. Six months after initial evaluation, 69% of the infants were recovered. A duration of symptoms <3 months before referral correlated significantly with better outcome. They have concluded that most infants with severe constipation evaluated at a tertiary center are recovered after 6 months. Early therapeutic intervention may beneficially contribute to the resolution of constipation.

**C Miller-Loncar** and et.al., (2004) conducted a comparison study about infant colic and feeding difficulties. The objective of the study were to examine the relation between colic and feeding difficulties and their impact on parental functioning for a primarily clinic referred sample. Respondents were 43 infants from women and infants hospital in Island and USA. Infants were divided into two groups, colic (n=19) and comparison (n=24). Families were assessed at two visits. In the results, infants in the colic group displayed more difficulties with feeding. Mothers in the colic group reported higher levels of parenting stress. They have concluded that the association between feeding difficulties

colic suggests the potential for ongoing regulatory problems in infants presenting with clinically significant colic symptoms.

**Miyazawa.R.** and et.al., (2002) conducted a retrospective study about prevalence of gastro esophageal reflux related symptoms in infants. The objective of the study were to obtain precise information on the natural course of gastro esophageal reflux related symptoms in infants. Respondents were 921 mothers having infants in Gunma University School of Medicine at Japan. In the results, one month old infants, 47.1% had one or more regurgitation or vomiting episode per day. This proportion decreased to 28.8% at 4 months old and 6.4% at 7 months old. There was no significant differences in the prevalence of regurgitation or vomiting between breast fed infants and formula-fed or mixed-feeding infants either at 1 or 4 months of age. They have concluded that regurgitation is a common symptom in Japanese infants and decreases spontaneously with age. The natural history of gastro esophageal reflux must be taken into consideration when deciding the treatment.

**Reijneveld SA** and et.al., (2001) conducted a cross-sectional national population based study about excessive infant crying: the impact of varying definitions. The objective of the study were to assess the impact of varying definitions of excessive crying and infantile colic on prevalence estimates and to assess to what extent these definitions comprise the same children. Respondents were 3345 infants from

Amsterdam at Netherlands. We computed the prevalence of excessive crying according to 10 published definitions regarding parent-reported duration of infant crying and the parents experience. In the results, overall prevalence rates of excessive crying varied strongly between definitions from 1.5% to 11.9%. They were always highest in 1-month – old infants. Definitions was only excellent, if they were closely related such as crying for >3 hours / day for >3 days/week for the preceding 2 or 3 weeks. They have concluded that different definitions of excessive crying lead to the inclusion of very dissimilar groups of infants. They recommended clearly described definitions concerning both duration of crying and parental distress may improve the comparability of studies on the cause and treatment of excessive infant crying.

**Ravelli** and et.al., (2001) conducted an experimental study about vomiting and gastric motility in infants with cow's milk allergy. The objective of the study were to describe cow's milk in sensitized infants may impair antral mobility, there by promoting gastro esophageal reflux and reflux vomiting. Respondents were 15 infants from department of paediatrics in University of Brescia at Italy. Infants underwent a challenge with cow's milk formula. Electrogastrography was used to measure the post prandial to fasting power ratio of gastric electrical activity. They have concluded that, in sensitized infants, cow's milk induces severe gastric dysrhythmias and delayed gastric emptying, which

in turn may exacerbate gastro esophageal reflux and induce reflux vomiting.

**Mandell GA** and et.al., (1999) conducted a experimental study about cost-effective imaging approach to the non bilious vomiting infant. The objective of the study were to develop a cost and time consuming algorithm for differentiating hypertrophic pyloric stenosis from other medical causes of vomiting in infants. The respondents were 89 infants between the ages of 11days to 4month from DuPont hospital for children in USA. Every infants was assessed for duration of vomiting, status of body weight, time and amount of last ingestion and time of last vomiting. An aspirated stomach contents volume less than 5 ml suggested a clinical cause for the vomiting. 23 of 89 infants (25%) had hypertrophic pyloric stenosis. In the results, by performing the upper gastrointestinal series in 66 infants, it was shows that 14 % had slow gastric emptying and 79% had gastro esophageal reflux in the results. They have concluded that,before gastric emptying if infants were not given anything by mouth for 3 to 4 hours,96% was improved by accuracy and 94% was improved by volumetric method.



**SUMMARY:**

This chapter views about the literature review, literature related to selected gastro intestinal problems of infants such as abdominal colic, gastro esophageal reflux, vomiting, constipation, diarrhea and studies related to selected gastro intestinal problems of infants.

## **CHAPTER –III**

### **METHODOLOGY**

Research methodology involves systemic procedure in which the researcher starts from initial identification of problems to its final conclusion. The role of methodology consists of procedures and techniques for conducting a study. [Polit and Hungler, 2004]

This chapter deals with the methodology followed by the investigator to assess the knowledge on selected gastro intestinal problems among mothers having infants.

#### **METHODOLOGY OF PRESENT STUDY DEALS WITH:**

- Research approach.
- Research design.
- Study setting.
- Target population.
- Sample.
- Sampling technique.
- Sample selection criteria.
- Selection and development of instrument.
- Content validity and reliability.
- Pilot study.
- Data collection procedure.
- Plan for data analysis.

## **RESEARCH APPROACH:**

A research approach tells the researchers from whom to collect the data, how to collect the data and how to analyse them. It also suggests possible conclusions and helps the researcher in answering specific research questions in the most accurate and efficient way possible. [Nancy and Grove, 2005]

The research approach adopted for this study was non-experimental approach.

## **RESEARCH DESIGN:**

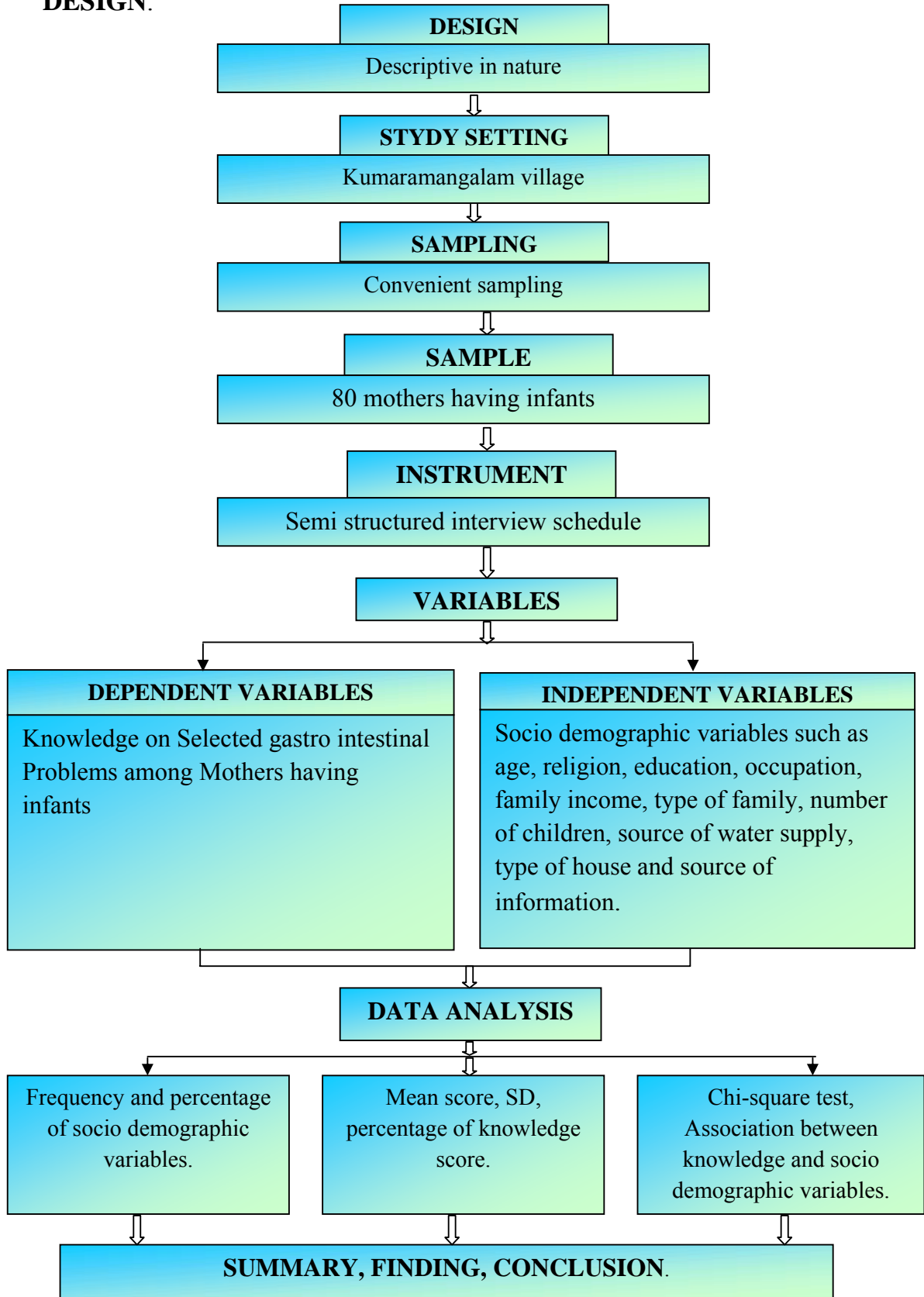
The research design is the overall plan for obtaining answers to the research question. The plan for systemic collection of information in a systemic manner that assures the answer found will be meaningful and accurate. [Carol.L. Macnee, 2004].

The term research design refers to the plan of scientific investigations. Research design designates the logical manner in which individuals or other units are compared and analyzed; it is the basis for making interpretations from the data. [Arvind Kumar, 2005].

Research design selected for this study was descriptive design, it was used for assessing the level of knowledge on selected gastro intestinal problems of infants among mothers.

The schematic representation of the design used in the study was given in figure 3.1

**FIGURE-3.1: SCHEMATIC REPRESENTATION OF RESEARCH DESIGN.**



## **STUDY SETTING:**

Setting is the physical location and conditions in which data collection takes place in a study. [Polit and Beck, 2004]

Selection of the area for the study is one of the essential steps in the research process. The selection of the area for the present study was on the basis of,

- Availability of subjects,
- Feasibility of conducting the study,

This study was conducted in Kumaramangalam village, Tiruchengode. Kumaramangalam is one of the sub centres which comes under Primary Health Center, Manickampalayam. Total population of the village is 2570. The main occupation of the area is weaving, coolie, business like maintaining power looms and living pucca, katcha and hut houses. The area is having adequate transport and educational facilities. our college is situated 2 Km distance from the village. So the investigator found this setting was feasible to conduct the study.

## **Target Population:**

Target population is the entire population to which the researcher is interested and would like to generalize the results of the study. [Polit and Beck, 2008]

The population for the present study includes mothers having infants in Kumaramangalam village, Tiruchengodu (Tk), Namakkal(Dt).

## **SAMPLE AND SAMPLING TECHNIQUE:**

Sample constitutes the subset of total population. Sampling is the process of selecting a portion of the population to represents the entire population. [Polit and Hungler, 2005]

In this study sample consists of 80 mothers having infants in kumaramangalam village. The convenient sampling technique was carried out to select the study subjects.

Convenience sampling is a selection of the most readily available persons as participants in a study.

## **SAMPLE SELECTION CRITERIA:**

### **Inclusion Criteria:**

- Mothers having infants were only selected for the study.
- Mothers who were present at the time of data collection.

## **SELECTION OF THE TOOL:**

The instrument selected for the study was a vehicle that would obtain best data to draw conclusions pertinent to the study. [Treece and Treece, 2004]

Semi structured interview schedule was prepared to assess the knowledge on selected gastro intestinal problems among mothers having infants. Semi structured interview schedule was considered to be the most appropriate instrument to elicit the response from the subjects.

## **DEVELOPMENT OF THE TOOL:**

In the process of developing the tool, the investigator reviewed the related research and non research literatures and discussed with subjects experts in the field of child health nursing. This helped in the selection of the content for the development of the tool.

## **DESCRIPTION OF THE TOOL:**

The tool was used to collect the data was semi structured interview schedule to assess the knowledge on selected gastro intestinal problems among mothers having infants.

The semi structured interview schedule was organized into two sections.

### **Section –A:**

It consists of 11 items related to the socio demographic data of mothers having infants. It include age, religion, education, occupation, family income, type of family, number of children, source of water supply, type of house and source of information.

### **Section-B:**

It consists of 40 items dealing with knowledge on selected gastro intestinal problems of infants.

### **CONTENT VALIDITY:**

Validity is the most important single methodological criteria for evaluating any measuring instrument. Validity refers to whether an instrument measures accurately, what it is suppose to measure. [B.T.Basavanhappa, 2005]

The content validity of the tool was obtained from different experts in the field of pediatrician and pediatric nursing. As per the suggestions the necessary changes were incorporated in the tool.

### **RELIABILITY:**

The degree of consistency or accuracy with which an instrument measures the attribute it is designed to measure. [Polit and Beck, 2004]

The semi structured interview schedule was administered to 10 mothers having infants in karattuppalayam. The co-relation co-efficient  $r=0.93$  was found and showed high degree of reliability of the tool to conduct the study.

### **PILOT STUDY:**

A pilot study is a small scale version done in preparation for a main study. [Polit and Hungler, 2004]

Pilot study was conducted in the month of September 2011. The investigator translated the interview schedule into Tamil to maintain the objectivity. Eight mothers having infants were selected. The investigator



visited the area and personally interviewed all the eight mothers. The mothers were responded well to the questions and they were very cooperative. The results of the data were revealed that the tool was feasible to conduct the study.

#### **DATA COLLECTION PROCEDURE:**

The permission was obtained from the concerned higher authority to conduct the study in the area. The purpose of the interview was explained to all the mothers with self introduction. Prior to interview a separate place was selected in the house for an interview and subjects were made comfortable and relaxed. The investigator personally visited each house for the interview. Nearly 30-40 minutes were spent for each interview. The investigator visited 8 to 10 houses daily in the month of October 2011.

Totally the investigator has taken 10 days to complete the interview from the 80 mothers. During the interview, all the mothers were cooperative.

#### **PLAN FOR DATA ANALYSIS:**

The collected data were entered in a master sheet. The data obtained was analysed in terms of the objectives of the study by using descriptive and inferential statistics. The plan for data analysis was as follows.

1. The frequencies and percentage was used to analyze the socio demographic variables.
2. Mean score, Standard deviation and Mean score percentage were used to assess the knowledge score.
3. Inferential statistics especially chi-square test to find out the relationship between knowledge with selected socio demographic variables.

The significant findings will be expressed in tables, figures and graphs.

### **CONCLUSION:**

This chapter deals with research approach, research design, study setting, population, sample and sampling techniques, sample selection criteria, selection of the tool, development of the tool, description of the tool, content validity, reliability, pilot study, data collection procedure and plan for data analysis.

# **CHAPTER IV**

## **DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

This chapter deals with analysis and interpretation of the data elicited from a sample of 80 mothers having infants regarding knowledge on selected gastro intestinal problems of infants like abdominal colic, gastro esophageal reflux, vomiting, constipation and diarrhea.

Data analysis is method for rendering quantitative meaningful and intelligible information. [Polit and Hungler, 2006].

The data which are necessary to provide to the adequacy of the study are collected through the semi structured interview schedule were analyzed by using relevant descriptive and inferential statistics. The substantive summaries of the findings are arranged in connection with specific objectives of the study.

### **OBJECTIVES OF THE STUDY:**

1. To assess the knowledge of mothers regarding the selected gastro intestinal problem of infants.
2. To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.

3. To prepare a health education package on selected gastro intestinal problems of infants.

### **PRESENTATION OF DATA:**

The collected data are analyzed and presented in 3 sections.

#### **Section-I:**

Description of socio-demographic variables of mothers having infants in frequencies and percentage analysis.

#### **Section-II:**

Knowledge of mothers regarding selected gastro intestinal problems of infants were assessed through the application of mean, standard deviation and means score percentage.

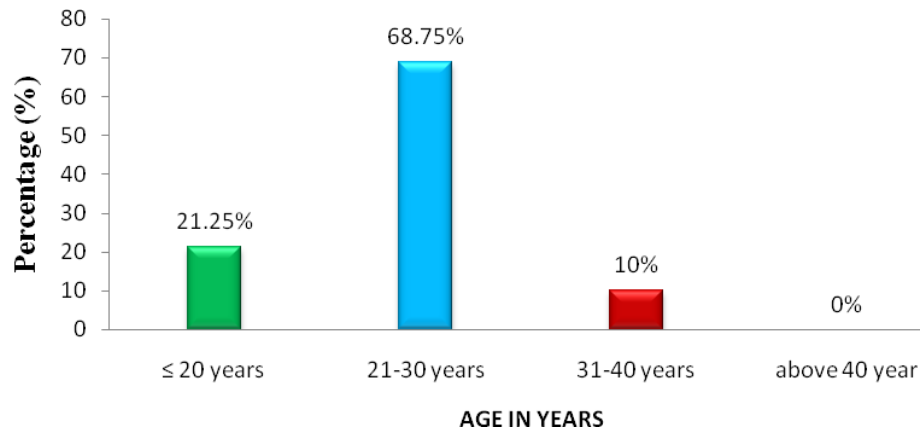
#### **Section –III:**

Inferential statistics, and chi square test was used to determine the association of mothers knowledge on selected gastro intestinal problems of infants with selected socio demographic variables.

**SECTION-I**  
**DESCRIPTION OF SOCIO DEMOGRAPHIC**  
**CHARACTERISTICS OF MOTHERS HAVING INFANTS**

**Table- 4.1.1: Distribution of mothers according to their age.**

S. No	Age in years	Respondents	
		Number	Percentage(%)
1.	≤ 20 years	17	21.25
2.	21-30 years	55	68.75
3.	31-40 years	8	10
4.	Above 40years	0	0
<b>Total</b>		<b>80</b>	<b>100</b>

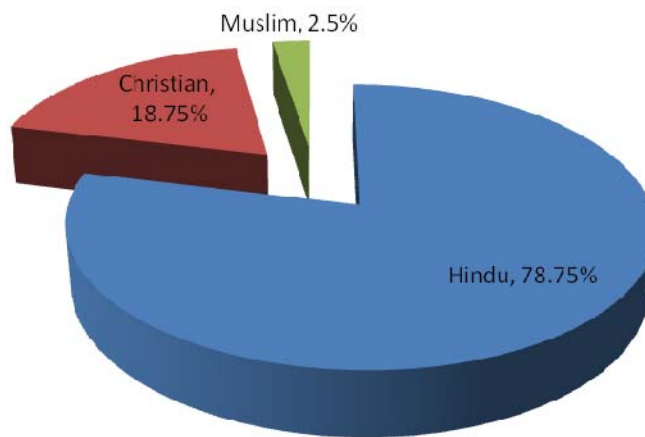


**Figure 4.1.1 Distribution of mothers according to their age.**

Table 4.1.1 and figure 4.1.1 shows that the distribution of the mothers having infants under the study according to age. The maximum number of subjects 55(68.75 %) were in the age group of 21-30 years 17(21.25 %) were in the ≤ 20 years, 8 (10 %) were in 31-40 years and 0% in above 40 years.

**Table-4.1.2: Distribution of mothers according to their religion**

S. No	Religion	Respondents	
		Number	Percentage(%)
1.	Hindu	63	78.75
2.	Christian	15	18.75
3.	Muslim	2	2.5
<b>Total</b>		<b>80</b>	<b>100</b>

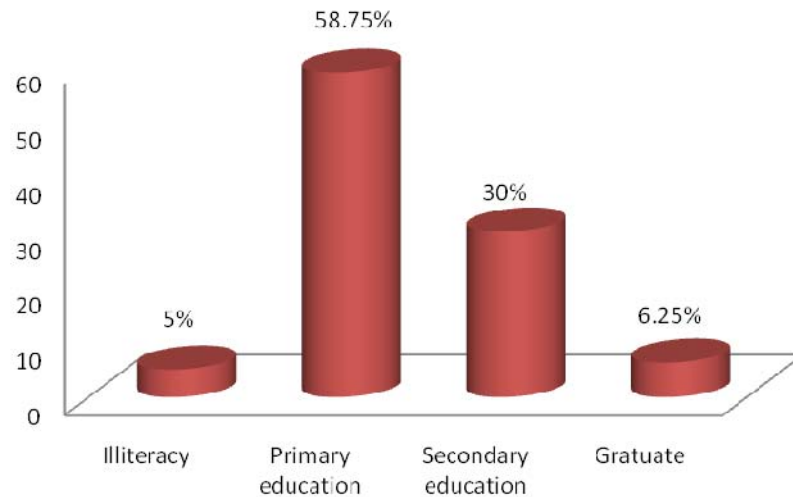


**Figure 4.1.2 distribution of mothers according to their religion.**

Table 4.1.2 and figure 4.1.2 shows that the distribution of the mothers according to religion. 63 (78.75 %) were belongs to Hindu, 15(18.75%) were belongs to Christian and 2(2.5 %) were belongs to Muslim.

**Table- 4.1.3: Distribution of mothers according to their educational qualification**

S. No	Educational Qualification	Respondents	
		Number	Percentage(%)
1.	Illiteracy	4	5
2.	Primary Education	47	58.75
3.	Secondary Education	24	30
4.	Graduate	5	6.25
<b>Total</b>		<b>80</b>	<b>100</b>

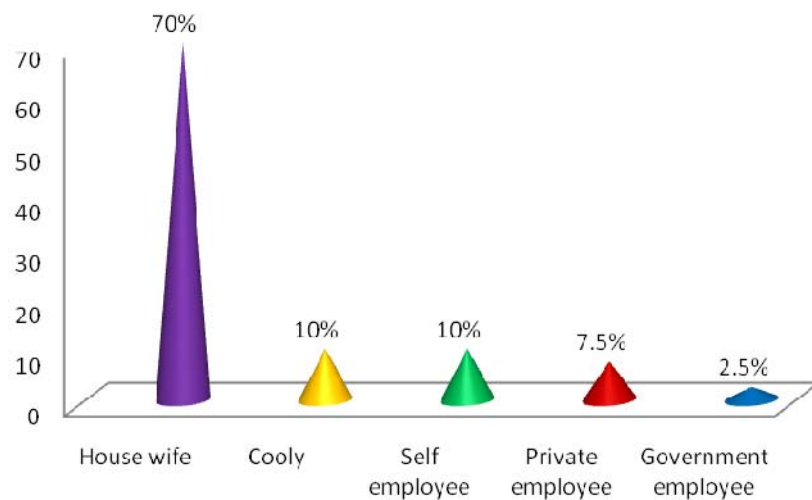


**Figure-4.1.3: Distribution of mothers according to their educational qualification.**

Table 4.1.3 and figure 4.1.3 shows that 4(5%) were illiteracy, 47(58.75%) were primary education, 24(30%) had secondary education and only 5(6.25%) were graduates.

**Table-4.1.4: Distribution of mothers according to their occupation**

S. No	Occupation	Respondents	
		Number	Percentage (%)
1.	House wife	56	70
2.	Cooly	8	10
3.	Self Employee	8	10
4.	Private Employee	6	7.5
5.	Government Employee	2	2.5
<b>Total</b>		<b>80</b>	<b>100</b>



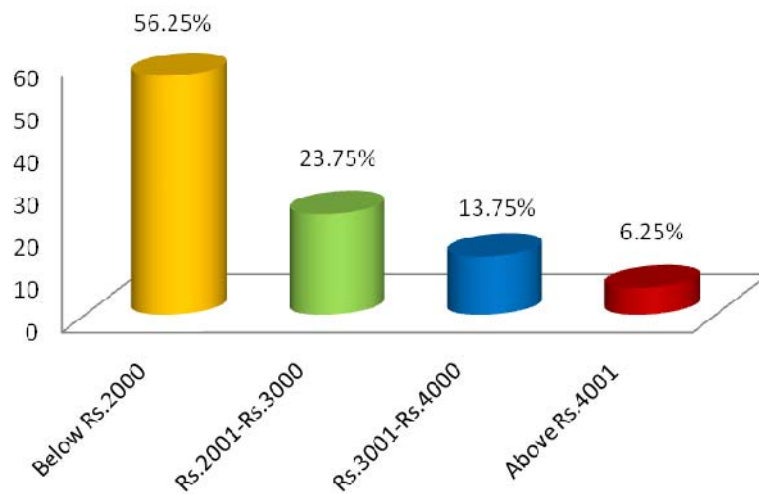
**Figure- 4.1.4: Distribution of mothers according to their occupation**

Table 4.1.4 and figure 4.1.4 shows that maximum number of subjects 56 (70%) were house wife, 8 (10%) were cooly, 8 (10%) were self employee, 6 (7.5%) were private employee and 2 (2.5%) were government employee.



**Table- 4.1.5: Distribution of mothers according to their family income**

S. No	Family Income	Respondents	
		Number	Percentage (%)
1.	Below Rs. 2000	45	56.25
2.	Rs.2001 - Rs.3000	19	23.75
3.	Rs.3001 - Rs.4000	11	13.75
4.	Above Rs.4001	5	6.25
<b>Total</b>		<b>80</b>	<b>100</b>

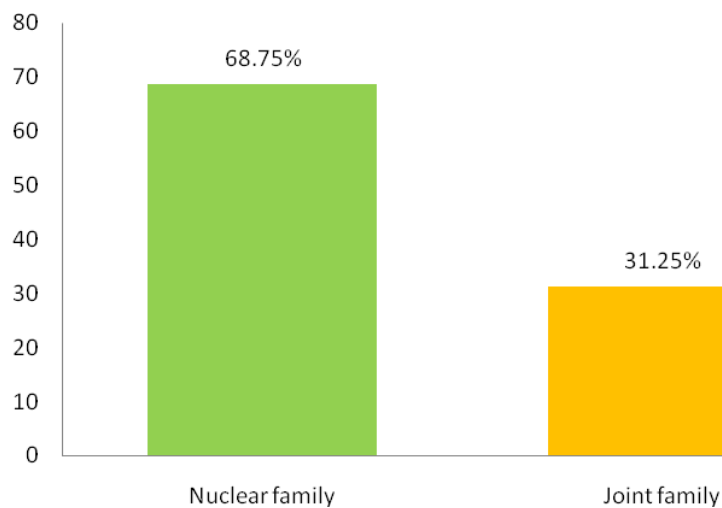


**Figure-4.1.5: Distribution of mothers according to their family income**

Table 4.1.5 and figure 4.1.5 shows that 45(56.25%) of mothers were having family monthly income is below Rs.2000, 19(23.75%) were having the family income of Rs.2001- Rs.3000, 11(13.75%) were having the family income of Rs.3001-4000 and 5(6.25%) were having family income is above Rs.4001.

**Table-4.1.6: Distribution of mothers according to their type of family**

S. No	Type of family	Respondents	
		Number	Percentage (%)
1.	Nuclear family	55	68.75
2.	Joint family	25	31.25
<b>Total</b>		<b>80</b>	<b>100</b>

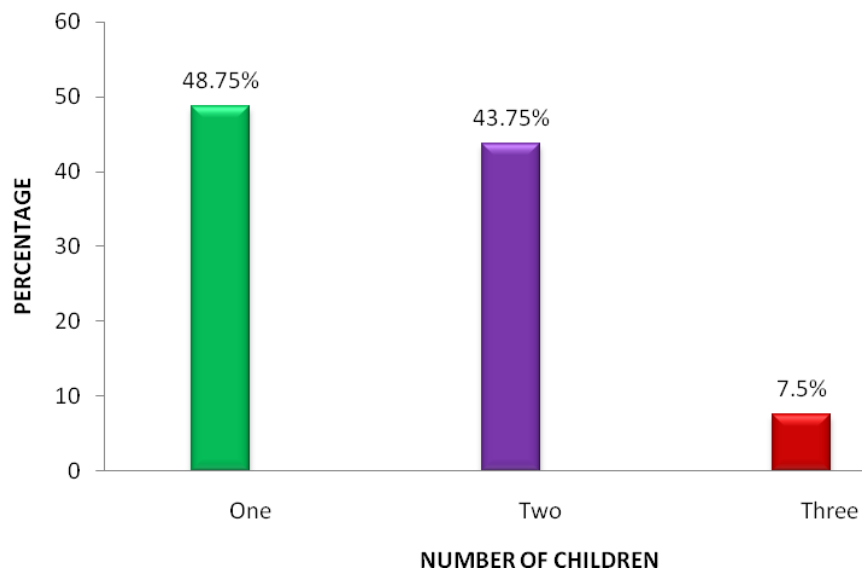


**Figure-4.1.6: Distribution of mothers according to their type of family**

Table 4.1.6 and figure 4.1.6 shows that 55(68.75%) mother were belongs to nuclear family and 25(31.25%) mothers were belongs to joint family.

**Table- 4.1.7: Distribution of mothers according to their number of children.**

S. No	Number of children	Respondents	
		Number	Percentage(%)
1.	One	39	48.75
2.	Two	35	43.75
3.	More than two	6	7.5
<b>Total</b>		<b>80</b>	<b>100</b>

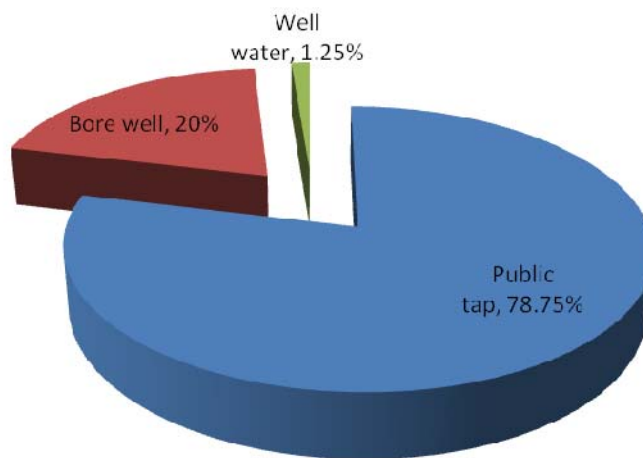


**Figure- 4.1.7: Distribution of mothers according to their number of children.**

Table 4.1.7 and figure 4.1.7 shows that 39(48.75%) mothers have one child, 35(43.75%) mothers have two children and 6(7.5%) mothers have more than two children.

**Table- 4.1.8: Distribution of mothers according to their source of water supply**

S. No	Source of water supply	Respondents	
		Number	Percentage(%)
1.	Public tap	63	78.75
2.	Bore well	16	20
3.	well	1	1.25
<b>Total</b>		80	100

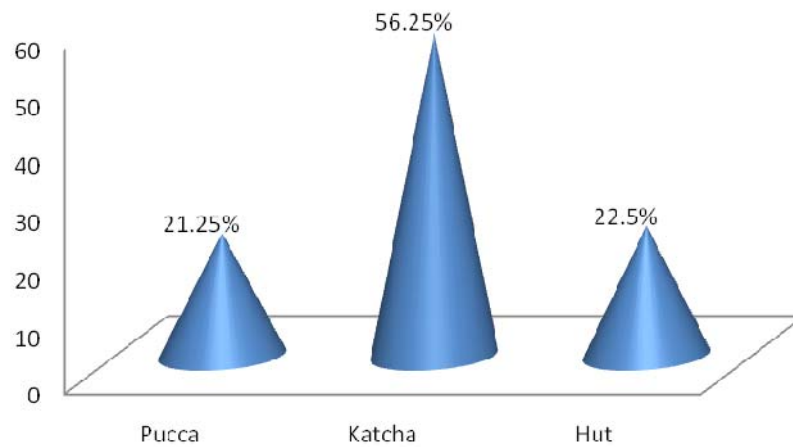


**Figure- 4.1.8: Distribution of mothers according to their source of water supply.**

Table 4.1.8 and figure 4.1.8 shows that 63(78.75%) of the samples consume public tap, 16(20%) of the samples consume bore well and only one (1.25%) of the sample consume well water.

**Table-4.1.9: Distribution of mothers according to their type of house**

S. No	Type of house	Respondents	
		Number	Percentage(%)
1.	Pucca	17	21.25
2.	Katcha	45	56.25
3.	Hut	18	22.5
total		<b>80</b>	<b>100</b>

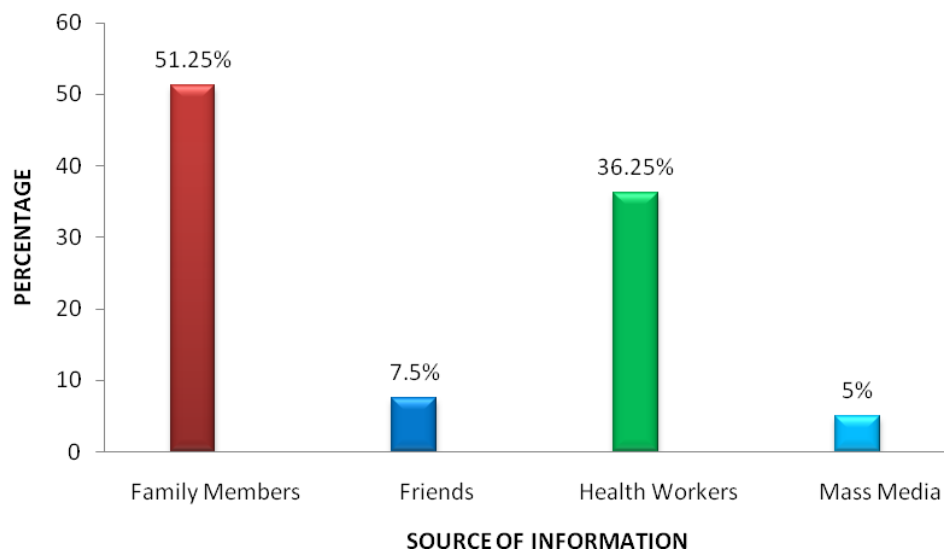


**Figure- 4.1.9: Distribution of mothers according to their type of house.**

Table 4.1.9 and figure 4.1.9 shows that 17(21.25%) of the mother live in pucca house, 45(56.25%) of the mother live in katcha house and 18(22.5%) of the mothers live in hut house.

**Table-4.1.10: Distribution of mothers according to their source of information**

S. No	Source of information	Respondents	
		Number	Percentage (%)
1.	Family members	41	51.25
2.	Friends	6	7.5
3.	Health workers	29	36.25
4.	Mass media	4	5
<b>Total</b>		<b>80</b>	<b>100</b>



**Figure-4.1.10: Distribution of mothers according to their source of information.**

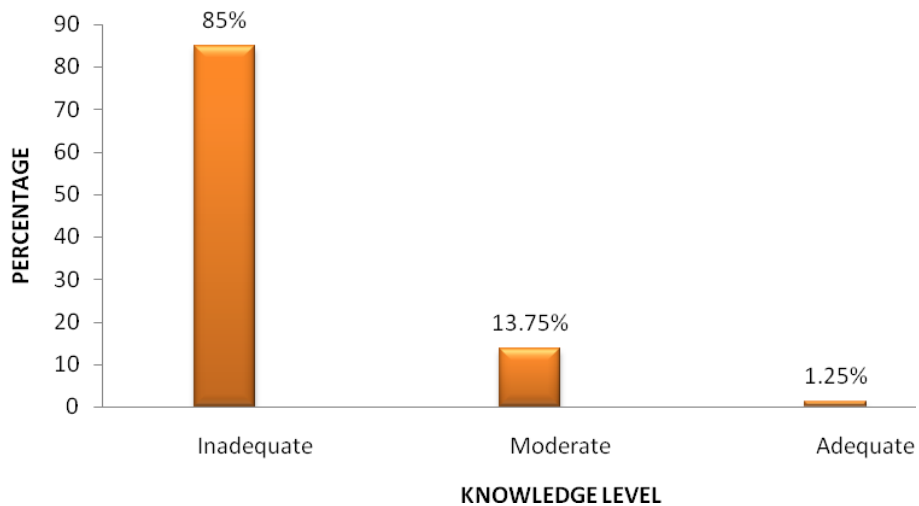
Table 4.1.10 and figure 4.1.10 shows that 41(51.25%) received information from family members, 6(7.5%) of mothers received information from friends, 29(36.25%) from health workers and 4(5%) from mass media.

## SECTION –II

### ASSESSING THE KNOWLEDGE ON SELELCTED GASTR INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS

**Table-4.2.1: Knowledge Level of Mothers Regarding Selected Gastro  
Intestinal Problems of infants**

S. No	Knowledge Level	Respondents	
		Numbers	Percentage(%)
1.	Inadequate (<50%)	68	85
2.	Moderate (50-75%)	11	13.75
3.	Adequate (> 75%)	1	1.25
<b>Total</b>		<b>80</b>	<b>100</b>



**Figure- 4.2.1: Knowledge level of mothers regarding selected gastro  
intestinal problem of infants.**

The data on table 4.2.1 and figure 4.2.1 shows that the distribution of mothers according to their knowledge level regarding selected gastro intestinal problems of infants.

The investigator has classified the knowledge level into three categories

- Inadequate - <50 %
- Moderate - 50-75 %
- Adequate - >75 %

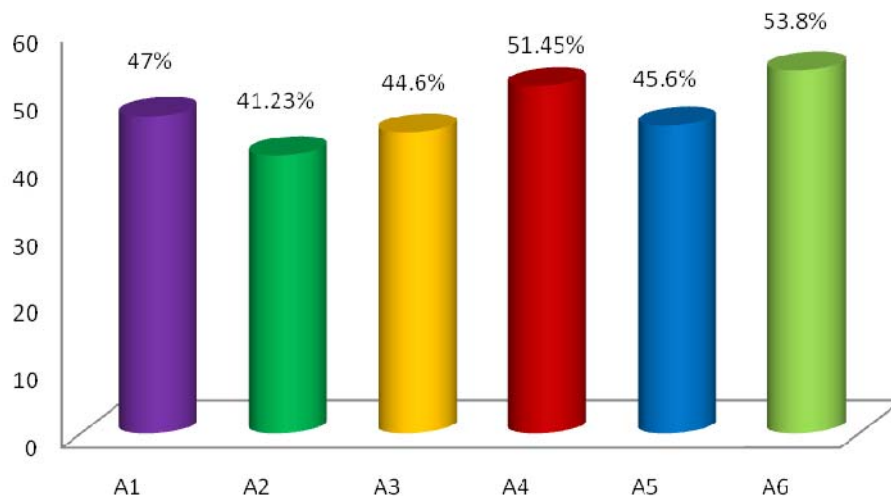
Only 1(1.25%) mother was having adequate knowledge, most of the mother 68(85%) were having inadequate knowledge and 11 (13.75%) were having moderate knowledge regarding selected gastro intestinal problems of infants.



**Table 4.2.2 knowledge score on selected gastro intestinal problems of infants over different aspects.**

**N= 80**

S. No	Aspects	Max score	Range score	Respondents knowledge		
				Mean	Mean score (%)	SD.
1.	Infants	18	3-13	8.46	47	2.07
2.	Abdominal colic	13	4-11	5.36	41.23	1.86
3.	Gastro esophageal reflux	25	5-16	11.15	44.6	1.74
4.	Vomiting	24	5-18	12.35	51.45	2.89
5.	constipation	20	5-14	9.12	45.6	2.22
6.	Diarrhea	35	8-32	18.83	53.8	4.46



A1-Infants      A2- Abdominal colic      A3-Gastro Esophageal reflux  
 A4-Vomiting      A5-Constipation      A6-Diarrhea

**Figure- 4.2.2: Knowledge score on selected gastro intestinal problems of infants over different aspects.**

The above table 4.2.2 and figure 4.2.2 reveals that the outcomes of descriptive measures such as range, mean, mean score percentage and SD of knowledge of mothers on selected gastro intestinal problems of infants.

The knowledge was assessed in different areas such as infants, abdominal colic, gastro esophageal reflux, vomiting, constipation and diarrhea.

The mean score percentage of knowledge regarding infants was 47%, mean was 8.46 and standard deviations 2.07. The mean score percentage of knowledge regarding abdominal colic was 41.23%, mean was 5.36 and standard deviation was 1.86. The mean score percentage of gastro esophageal reflux was 44.6%, mean was 11.15 and standard deviation was 1.74. The mean Score percentage of knowledge regarding vomiting was 51.45%, mean was 12.35 and standard deviation was 2.89. The mean score percentage of constipation was 45.6%, mean 9.12 and standard deviation was 2.22.the mean. The mean score percentage regarding diarrhea was 53.8%, mean was 18.83 and standard deviation was 4.46.

**Table-4.2.3: Overall knowledge score on selected gastro intestinal problems of infants**

**N=80**

<b>Aspects</b>	<b>Max Score</b>	<b>Range Score</b>	<b>Respondents knowledge</b>		
			<b>Mean</b>	<b>Mean Score %</b>	<b>SD.</b>
Over all Knowledge	135	32-103	65.22	48.31	11.37

A table 4.2.3 shows that the overall knowledge score of the mothers was 48.31%, which implies that they have inadequate knowledge regarding selected gastro intestinal problems of infants.

## SECTION –III

### ASSOCIATION OF SELECTED SOCIO DEMOGRAPHIC VARIABLES WITH LEVEL OF KNOWLEDGE

**Table-4.3.1: Association between the knowledge on selected gastro intestinal problems of infants with socio demographic variables.**

S. No	Variables	Category	Level of knowledge								df.	$\chi^2$
			Inadequate		Moderate		Adequate		Total			
			No	%	No	%	No	%	No	%		
1.	Age	≤ 30 years	67	98.5	5	45.5	0	0	72	90	2	38.74*
		>30 Years	1	1.5	6	54.5	1	100	8	10		
2.	Religion	Hindu	55	80.8	8	72.7	0	0	63	78.75	2	4.11
		Others	13	19.1	3	27.2	1	100	17	21.25		
3.	Education	Primary Education	50	73.5	1	9	0	0	51	63.75	2	18.792*
		Secondary education & graduate	18	26.5	10	90.9	1	100	29	36.25		
4.	Occupation	House Wife	48	70.6	7	63.6	1	100	56	70	2	0.649
		Others	20	29.4	4	36.4	0	0	24	30		
5.	Family income	Below Rs.3000	54	79.4	9	81.8	1	100	64	80	2	0.285
		Above Rs.3001	14	20.6	2	18.2	0	0	16	20		
6.	Type of family	Nuclear	49	72.1	5	45.5	1	100	55	68.75	2	3.575
		Joint	19	27.9	6	54.5	0	0	25	31.25		
7.	No. of children	One	39	57.4	0	0	0	0	39	48.75	2	13.42*
		Two and more	29	42.6	11	100	1	100	41	51.25		
8.	Source of water supply	Public tap	53	77.9	9	81.8	1	100	63	78.75	2	0.323
		others	15	22.1	2	18.2	0	0	17	21.25		
9.	Type of house	Pucca	14	20.6	2	18.2	1	100	17	21.25	2	3.825
		Others	54	79.4	9	81.8	0	0	63	78.25		

10	Source of information	Family members & Friends	45	66.2	2	18.2	0	0	47	58.75	2	10.378*
		Health workers & mass media	23	33.8	9	81.8	1	100	33	41.25		

**\*Significant at 5% level (  $P < 0.05$  ), 2 df = 5.99**

The above table 4.3.1 shows the results obtained on chi square analysis of association between knowledge on selected gastro intestinal problems of infants and demographic variables, it reveals that there was significant relationship between the knowledge of mothers regarding selected gastro intestinal problems of infants with age, education, number of children and source of information. But there was no significantly relationship between mothers knowledge score with religion, occupation, family income, type of family, source of water supply, and type of house.

## **DISCUSSION**

The study was focused on assessing the knowledge on selected gastro intestinal problems among mothers having infants. The discussion was described under the following headings:

- Socio demographic variables of mothers.
- Knowledge of mothers regarding selected gastro intestinal problems.
- Association between mothers knowledge in selected gastro intestinal problems with socio demographic variables.

### **I. SOCIO DEMOGRAPHIC VARIABLES OF MOTHERS:**

- out of 80 mothers 17(21.25%) were in the age group of less than 20 years, 55(68.75%) were in the age group of 21-30 years, 8(10%) were in the age 31-40 years and 0% in the age group of above 40 years.
- Majority of the mothers 63(78.75%) were belongs to Hindu, 15(18.75%) of mothers were belongs to Christian and 2(2.5%) were belongs to Muslim.
- 4(5%) were illiteracy, 47(58.75%) of the mothers had completed primary education, 24(30%) were studied up to secondary education and only 5(6.25%) were graduate.

- Majority of the mothers 56(70%) were house wife, 8(10%) were cooly, 8(10%) were self employee, 6(7.5%) were private employee and 2(2.5%) were government employee.
- Out of 80 mothers 45(56.25%) getting below Rs.2000 per month of family income, 19(23.75%) were getting Rs.2001-3000, 11(13.75%) were getting above Rs.3001-4000 and 5(6.25%) were getting above Rs.4001 of monthly income.
- 55(68.75%), mothers were belongs to nuclear family and 25(31.25%) mothers were belongs to joint family.
- 39(48.75%) mothers have one child, 35(43.75%) mothers have two children and 6(7.5%) mothers have more than two children.
- 63(78.75%) of the mothers fetch water from public tap, 16(20%) of them taking from bore well water and only (1.25%) of the mother was using well water.
- 17(21.25%) of the mothers were living in pucca house, 45(56.25%) of them were in katcha house, 18(22.5%) of the mothers were in hut.
- 41(51.25%) received information from family members, 6(7.5%) of the mothers received information from friends, 29(36.25%) from healthy workers and 4(5%) from mass media.

## **II. KNOWLEDGE OF MOTHERS REGARDING SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS:**

Knowledge of mothers on selected gastro intestinal problems of infants are divided into three categories,

- Inadequate - < 50 %
- Moderate - 50 % -75 %
- Adequate - >75 %

Finding of the study revealed that 68(85 %) of the mothers were having inadequate knowledge, 11(13.75%) of the mothers were having moderate knowledge and only 1(1.25%) was having adequate knowledge.

The mean score percentage of knowledge regarding infants was 47% abdominal colic was 41.23%, gastro esophageal reflux was 44.6%, vomiting was 51.45% constipation was 45.6% and diarrhea was 53.8%.

The overall knowledge score of the mothers was 48.31% which implies that they have inadequate knowledge regarding selected gastro intestinal problems of infants.

## **III. ASSOCIATION BETWEEN MOTHERS KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS WITH SOCIO DEMOGRAPHIC VARIABLES.**

The present study reveals knowledge of mothers regarding selected gastro intestinal problems of infants was influenced by socio demography



variables of mothers such as age, education, number of children and source of information have high significant relationship with knowledge score that is found through chi- square analysis. Religion, occupation, family income, type of family, source of water supply and type of house have no significant association with knowledge score of mothers.

### **CONCLUSION:**

This chapter deals with analysis and interpretation of the data collected from 80 mothers on selected gastro intestinal problems of infants in a selected rural area, Kumaramangalam.

## **CHAPTER – V**

### **SUMMARY, FINDINGS, CONCLUSION, IMPLICATION AND RECOMMENDATION.**

This chapter presents a brief account of the summary, major findings, conclusion, implications and recommendations of the study.

#### **SUMMARY:**

The primary aim of the study was to assess the knowledge on selected gastro intestinal problems of infants among mothers in a selected rural area, Kumramangalam, Tiruchengodu.

#### **THE OBJECTIVES OF THE STUDY:**

- ❖ To assess the knowledge of mothers regarding the selected gastro intestinal problems of infants.
- ❖ To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.
- ❖ To prepare a health education package on selected gastro intestinal problems of infants.

Based on the literature reviewed and with the guidance from various subject experts, the investigator developed the conceptual frame work, methodology for the study and a data analysis plan, in a most

effective and efficient way. The conceptual frame work adopted for this study was based on the pander's Health promotion model.

In view of the nature of the problem selected for the study and the objectives to be accomplished. The descriptive survey was considered as appropriate research approach for this study. The sample of the study comprised of 80 mothers having infants in Kumaramangalam Village, Tiruchengodu. The instrument used for the data collection was a semi structured interview schedule. The data was collected in the month of October, 2011.

The knowledge of mothers regarding selected gastro intestinal problems of infants were assessed and compared with selected socio demographic variables like age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.

### **MAJOR FINDINGS OF THE STUDY:**

The major findings of the study are summarized as follows,

#### **Finding related to socio demographic variables:**

- ❖ out of 80 mothers 17 (21.25%.) were in the age group of less than 20 years, 55 (68.75%) were in the age group of 21 – 30 years, 8 (10%) were in the age group of 31 – 40 years and 0% in the age group of above 40 years.

- ❖ Majority of the mothers 63 (78.75%) were belongs to Hindu, 15 (18.75%) of mothers were belongs to Christian and 2 (2.5%) were belongs to Muslim.
- ❖ 4 (5%) were illiteracy, 47 (58.75%) of the mothers had completed primary education, 24 (30%) were studied upto secondary education and only 5 (6.25%) were graduates.
- ❖ Majority of the mothers 56 (70%) were house wife, 8 (10%) were cooly, 8 (10%) were self employee, 6 (7.5%) were private employee and 2 (2.5%) were government employees.
- ❖ Out of 80 mothers 45 (56.25%) were getting below Rs. 2000 per month of family income, 19 (23.75%) were getting Rs. 2001 – 3000, 11 (13.75%) were getting Rs. 3001 – 4000 and 5 (6.25%) were getting above Rs. 4001 of monthly income.
- ❖ 55 (68.75%) mothers were belongs to nuclear family and 25 (31.25%) mothers were belongs to joint family.
- ❖ 39 (48.75%) mothers have one child, 35 (43.75%) mothers have two children and 6 (7.5%) mothers have more than two children.
- ❖ 63 (78.75%) of the mothers consume public tap water, 16 (20%) of them consume bore well water and only 1(1.25%) of the mother was consume well water.

- ❖ 17 (21.25%) of the mothers live in pucca house, 45 (56.25%) of them live in katcha house and 18 (22.5%) of the mothers live in hut house.
- ❖ 41 (51.25%) received information from family members, 6 (7.5%) of the mothers received information from friends, 29 (36.25%) of them received from health workers and 4 (5%) from mass media.

### **Finding related to knowledge score of mothers:**

The results of the study revealed that 68 (85%) of the mothers were having inadequate knowledge, 11 (13.75%) were having moderate knowledge and only 1 (1.25%) was having adequate knowledge.

The mean score percentage of knowledge regarding infants was 47%, abdominal colic was 41.23%, gastro esophageal reflux was 44.6%, vomiting was 51.45%, constipation was 45.6% and diarrhea was 53.8%.

The over all knowledge score of the mothers regarding selected gastro intestinal problems of infants were 48.31 which implies that they have inadequate knowledge regarding selected gastro intestinal problems of infants.

### **Findings regarding the relationship between the selected socio demographic variables and knowledge level of mothers.**

The investigator tries to find out the relationship between the knowledge of mothers with age, religion, education, occupation, family

income, type of family, number of children, source of water supply, type of house and source of information. The chi-square test was used to determine the statistical significance of the mean score, it was found that age, education, number of children and source of information was significant at 5% level, but religion, occupation, family income, type of family, source of water supply and type of house are not significant.

### **CONCLUSION:**

Over all knowledge of mothers having infants on selected gastro intestinal problems was inadequate 48.31%. Since the present study revealed that the socio – demographic variables such as age, education, number of children and source of information had influence, but religion, occupation, family income, type of family, source of water supply and type of house had no influence on the knowledge score of the mothers.

So the health care personnel should take the responsibility to improve the knowledge of mothers regarding gastro intestinal problems of infants such as abdominal colic, gastro esophageal reflux, vomiting, constipation and diarrhea of infants.

### **IMPLICATIONS:**

The findings of the study has implications in different branches of nursing profession, i.e. nursing service, nursing education, nursing administration and nursing research. By assessing the knowledge of

mothers regarding selected gastro intestinal problems of infants, gives a clear picture regarding different steps to be taken in all these fields to improve the knowledge of mothers about selected gastrointestinal problems of infants.

### **Nursing Service:**

Nursing and other health team members have the responsibility to promote health information among the public. A community health Nurse must take initiative steps to educate the mothers about the management and prevention of gastro intestinal problems of infants. Health education session may be organized to improve mother's knowledge regarding gastrointestinal problems of infants.

Nursing personnel working in the community area may give individual teaching regarding management and prevention of gastro intestinal problems of infants, if necessary and create awareness among the mothers.

### **Nursing Education:**

Gastro intestinal problems like abdominal colic, gastro esophageal reflux, vomiting, constipation and diarrhea are the common problems among infants. The nursing students must be able to identify the learning needs of mothers on management and prevention of gastro intestinal problems of infants. They must be given special instruction to teach

mothers regarding management and prevention of gastro intestinal problems of infants.

Mass health education programmes may be conducted on the gastro intestinal problems of infants at frequent intervals in the community. The appropriate health education pamphlets may be provided to the mother's with appropriate picture and explanations to create awareness about management and prevention of gastro intestinal problems of infants.

Nursing education means in which nurses are prepared for practice in various settings. Thus the study results can be used as an informative illustration for students who can effectively able to identify the gastro intestinal problems of infants. It will help the students to provide proper management with minimum resources in hospital and community.

The institutes of nursing education should play an active role in conducting inservice education programme, workshops and continuing education programmes to educate nursing personnel of the community on management and prevention of gastro – intestinal problems of infants. Nurses should be equipped with up to date knowledge on management and prevention of gastro intestinal problems of infants.

### **Nursing Research:**

The study revealed that there is lack of knowledge regarding the selected gastro-intestinal problems of infants. It emphasis a great need for



research in creating awareness and development of teaching programme on gastro intestinal problems of infants.

**Nursing Administration:**

Health personnel are playing vital role in improving the nursing practices. Nursing personnel should be prepared to take leadership role in education. The nurses creating the knowledge regarding gastro intestinal problems of infants can be brought about without any additional budget or special instruments or other resources and with existing number of personnel. Through multiple roles as care givers, educators and case managers, nurses are able to identify the knowledge deficit of mothers and set priorities to achieve the realistic goals. Staff development programme on gastrointestinal problems of infants can be conducted for all staff nurses.

The study shows that the mothers need more education and training on management of gastro intestinal problems of infants. This can be achieved by proper health education on mothers with the help of the health care personnel.

**RECOMMENDATIONS:**

- ❖ The study can be replicated using a large sample, there by findings can be generalized.

- ❖ A comparative study can be conducted to assess the knowledge regarding selected gastro intestinal problems among mothers having infants residing in urban and rural area.
- ❖ A comparative study can be conducted to assess the knowledge regarding selected gastro intestinal problems among illiterate and literate mothers having infants.
- ❖ A quasi experimental study can be conducted with a structured teaching programme on selected gastro intestinal problems of infants among mothers.
- ❖ Observational study can be conducted to find out the home management of selected gastro intestinal problems of infants in community setting.
- ❖ Health professional can be instructed to conduct the health education programme on selected gastro intestinal problems of infants in their health unit.
- ❖ Mass communication through regional language should be provided to educate the public regarding the selected gastrointestinal problems of infant.
- ❖ A similar study can be conducted by using experimental and control group.

**SUMMARY:**

This chapter has deals with summary, major findings of the study, conclusions, implications and recommendations.

## REFERENCES

### Text Books:

1. **Achar's**, (1989), "Textbook of Pediatrics", 3<sup>rd</sup> edition, Orient Longman limited, Hyderabad, Pp:17-24, 415-427, 407.
2. **AK Dutta and Anupam Sachdeva**, (2007), "Advances in Pediatrics", 1<sup>st</sup> edition Jaypee brothers medical publishers (p) Ltd, New Delhi, Pp:649-654, 658-661.
3. **A.Parthasarathy**, (2007), "IAP Textbook of Pediatrics", 3<sup>rd</sup> edition, Jaypee brothers medical publishers(p) Ltd, New Delhi, Pp:478-480, 494-499.
4. **Debra.L.Price and Julie.F.Gwin**, (2008), "Pediatric Nursing-An Introductory Text", 10<sup>th</sup> edition, Saunders elsevior, Missouri, Pp:60,89-90,122, 163.
5. **Denish.F. Polit and Beck**, (2008), "Nursing Research –Generating and Assessing Evidence for Nursing Practice", 8<sup>th</sup> edition, Wolters Kluwer/Lippincott Williams and Wilkins, New Delhi, Pp: 141-142.
6. **Denish.F. Polit and Hungler**, (1989), "Essentials of Nursing Research –Methods", Appraisal and Utilization, 2<sup>nd</sup> edition, J.B.Lippincott Company, Philadelphia, Pp:179-180,242-246, 272.

7. **Dorothy.R.Marlow**, (2006), "Text book of Pediatric Nursing", 6<sup>th</sup> edition, Saunders an imprint of elsevior, Philadelphia, Pp:585-588, 690-692,621-628, 545, 572-575.
8. **E.Alan Glasper and Jim Richardson**, (2006), "A Textbook of Children's and Young People's Nursing", 1<sup>st</sup> edition, Churchill Livingstone elsivier, London, Pp:446-448, 456-457.
9. **Forfar and Arneil's**, (2008), "Textbook of Pediatrics", 7<sup>th</sup> edition, Churchill Livingstone elsevior, London, Pp:605-607, 611, 626-628,639.
- 10.**Gloria Leifer**, (1999), "Introduction to Maternity and Pediatric Nursing", 3<sup>rd</sup> edition, W.B.Saunders Company, Philadelphia, Pp:423,731-733.
- 11.**GN Prabhakara**, (2006), "Biostatistics",1<sup>st</sup> edition, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, Pp:25-35, 41, 55.
- 12.**Helen Lewer and Leslie Robertson**, (1983), "Care of the Child",1<sup>st</sup> edition, Mac millan press, London, Pp:13, 118-124.
- 13.**Jane ball and Ruth Bindler**, (1995), "Pediatric Nursing",1<sup>st</sup> edition, Appletion and Large Paramount Publishing Business and Professional Group, America, Pp:417-418, 483, 498-499. 512-517.

14. **Katie Barnes**, (2003), “Pediatrics- A Clinical Guide for Nurse Practitioners”, 1<sup>st</sup> edition, Butter Worth Heinemann an imprint of elsevier science Limited, London, Pp:141-148.
15. **K.N.Agarwal**, (2008), “ Pediatrics and Neonatology”, 1<sup>st</sup> edition, CBS Publishers and distributors, New Delhi, Pp:396-400.
16. **K.Park**, (2002), “Textbook of Preventive and Social Medicine”, 17<sup>th</sup> edition, M/S Banarsidas Bhanot Publishers, Jabalpur, Pp:367.
17. **Mrs.R.S.Tambulwadkar**, (1994), “Pediatric Nursing”, 1<sup>st</sup> edition, Vora medical publications, Bombay, Pp:60-61, 64-65, 125-128.
18. **Nancy Burns and Susan.K.Grove**, (2007), “Understanding Nursing Research-Building and evidence based practice”, 4<sup>th</sup> edition, Saunders an imprint of elsevier, Missouri, Pp:240-243.
19. **Nancy.J.Cobb**, (2001), “The Child – Infants, Children and Adolescents”, 1<sup>st</sup> edition, Mayfield publishing company, California, Pp:132-142.
20. **Nancy.T.Haffield**, (2009), “Pediatric Nursing”, 7<sup>th</sup> edition, Wolters Kluwer Health/Lippincott Williams and Wilkins, New Delhi, Pp:374-379.
21. **Nelson**, (2008), “Textbook of Pediatrics”, 18<sup>th</sup> edition, Volume-2, Saunders elsevier, Philadelphia, Pp:1546,1605-1617.

22. **N.Jayne and Nancy**, (2006), “Introductory Material and Pediatric Nursing”, 1<sup>st</sup> edition, Lippincott Williams and Wilkins, Philadelphia, Pp:364, 878-879, 882-883.
23. **OP Ghai**, (2010), “Essential Pediatrics”, 7<sup>th</sup> edition, CBS publishers and distributors Pvt Ltd, New Delhi, Pp:251-255, 260-262.
24. **Parul Datta**, (2010), “Pediatric Nursing”, 2<sup>nd</sup> edition, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, Pp:300-301, 76-77, 171-173, 288-293.
25. **Piyush Gupta**, (2010), “Essential Pediatric Nursing”, 2<sup>nd</sup> edition, CBS Publishers and distributors Pvt.Ltd, New Delhi, Pp:66, 433-434.
26. **P.S.S.Sundar Rao**, (1996), “An Introduction to Biostatistics-A manual for Students in Health Sciences”, 3<sup>rd</sup> edition, Prentice-Hall of India Private Limited, New Delhi, Pp:34-36, 93-96.
27. **R.Arvind**, (2006), “Applied Neonatology”, 1<sup>st</sup> edition, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, Pp:371-372.
28. **S.C.Gupta**, (1994), “Fundamentals of Statistics”, 5<sup>th</sup> edition, Himalaya publishing house, Mumbai, Pp:380-382, 519-520, 1165-1170.
29. **S.K.Mittal**, (2010), “An Approach to Pediatric Problems”, 15<sup>th</sup> edition, CBS Publishers and distributors Pvt Ltd, New Delhi, Pp:74, 188, 194, 227.

30. **Suraj Gupta**, (2004), "The Short Textbook of Pediatrics", 10<sup>th</sup> edition, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi, Pp:366-377, 395, 397.
31. **Susan Rowen and Jean Weiler**, (2007), "Nursing Care of Children- Principles and Practice", 3<sup>rd</sup> edition, Saunders elsevier, Missoure, Pp:130-131, 498-502, 503-504, 522, 529-532.
32. **Susan Rowen and Sandra R.Mott**, (1988), "Child Health Nursing- Essential Care Of Children And Families", 1<sup>st</sup> edition, Addison Wesley publishing company, California, Pp:115, 117, 523-525, 907.
33. **Vicky.R.Bowden,Dickey and Green Berg**, (1998), "Children and their Families-The Continuum of Care", 1<sup>st</sup> edition, W.B.Saunders company-A division of Harcourt brace and company, Philadelphia, Pp:254, 260, 1090-1095.
34. **Wong's**, (2009), "Nursing Care of Infants and Children", 8<sup>th</sup> edition, Mosby elsevier, Missouri, Pp:587-589, 1400-1403, 1180-1194, 1395-1397.



## **Journals:**

1. **Andrew.D.Jung**, (2001), “Gastro esophageal reflux in infants and children”, A peer-reviewed journal of the American Academy of family Physicians, December-1, volume-64, no:11, Pp:1853-1861.
2. **Ann Maria Hibbs and Scott A.Lorch**, (2006), “Metoclopramide for the treatment of gastro esophageal reflux disease in infants”, Official journal of the American Academy of Pediatrics, August-1, volume-118, no:2, Pp:746-752.
3. **Babaei.A, Bhargava. V and etal**, (2010), “Upper esophageal sphincter during transient lower esophageal sphincter relaxation:effects of reflux content and posture”, American journal of physiology and gastro intestinal liver physiology, volume-298, Pp:G 601-607.
4. **Baker.SS**, (2001), “Constipation in infants and children-evaluation and treatment”, Journal of Pediatric gastro enterology and nutrition, volume-30, Pp:109.
5. **Carroll AE, Garrison MM and etal**, (2002), “A systematic review of non pharmacological and non surgical therapies for gastro esophageal reflux in infants”, Archives pediatric adolescence and medicine, volume-156, no:2, Pp:109-113.
6. **Catherine A.Golski, Ellen S.Rome and etal**, (2010), “Pediatric speciality beliefs about gastro esophageal reflux in premature

infants”, Official journal of the American Academy of Pediatrics, January-1, volume-125, no:1, Pp:96-104.

7. **Cavataio.F, Carroccio A and Lacono G**, (2000), “Milk induced reflux in infants less than one year of age”, Journal of Pediatric gastro enterology and nutrition, 30 suppl, Pp:S 36-44.
8. **Chao HC and Vandenplas Y**, (2007), “Effect of cereal-thickened formula and upright positioning on regurgitation, gastric emptying and weight gain in infants with regurgitation”, Journal of nutrition, volume-23(1), Pp:23-28.
9. **Clifford TJ, Campbell MK, and et al**, (2002), “*Sequelae of infant colic: evidence of transient infant distress and absence of lasting effects on maternal mental health*”, Archives of Pediatric Adolescence and Medicine, volume-156, Pp:1183–1188.
10. **C.Miller-Loncar, R Bigsby and et al**, (2004), “Infant colic and feeding difficulties”, Archives of disease in childhood, volume-89, issue:10, Pp:908-912.
11. **Condino AA, Sondheimer J and et al**, (2006), “Evaluation of infantile acid and nonacid gastro esophageal reflux using combined PH monitoring and impedance measurement”, Journal of Pediatric gastro enterology and nutrition, volume-42, Pp:16-21
12. **Deal L, Gold BD and et al**, (2005), “Age-specific questionnaires distinguish GERD symptoms, frequency and severity in infants

- and young children: development and initial validation”, *Journal of Pediatric Gastroenterology and Nutrition*, volume-41 (2), Pp:178– 185.
13. **Devault KR and Castell DO**, (2005), “Updated guidelines for the diagnosis and treatment of gastro esophageal reflux disease”, *American journal of gastro enterology*, volume-100, Pp:190-200.
  14. **E.I.Nweze**, (2009), “virulence properties of diarrheagenic E.coli and etiology of diarrhea in infants,young children and other age groups in southeast,Nigeria”, *American-Eurasian journal of scientific research*, volume-4, no-3, Pp:173-179.
  15. **Francesco savino and emanuele castagho**, (2005), “A prospective 10 year study on children who had severe infantile colic”, *Acta paediatrics*, octomber, volume-94, issue:S 449, Pp:129-132.
  16. **Garrison MM and Christakis DA**, (2000), “A systematic review of treatments for infant colic”, *journal of Pediatrics*, volume- 106, Pp:184-190.
  17. **Gold bd** , (2003), “outcomes of pediatric gastro esophageal reflux disease:in the first year of life,in childhood and in adults...oh, and should we really leave helicobacter pylori alone?”, *Journal of Pediatric Gastroenterology and Nutrition*, volume-37, Suppl(1), Pp:S 33-S39.

18. **Gremse DA and etal**, (2002), "Comparison of polyethylene glycol 3350 and lactulose for treatment of chronic constipation in children", *Clinical pediatrics*, volume-41, Pp:225-229.
19. **Heine RG, Jorden B and etal**, (2006), "Clinical predictors of pathological gastro esophageal reflux in infants with persistent distress", *Journal of pediatric child health*, volume-42(3), Pp:134-139.
20. **Hibbs AM and Lorch SA**, (2006), "Metoclopramide for the treatment of gastro esophageal reflux disease in infants:A systemic review", *Journal of pediatrics*, volume-118(2), Pp:746-752.
21. **Hill DJ, Roy N and etal**, (2005), "Effect of a low-allergen maternal diet on colic among breastfed infants: a randomized, controlled trial", *Journal of Pediatrics*, volume- 116, Pp:e709-e715.
22. **Khoshoo V and Dhume P**, (2008), "Clinical response to 2 dosing regimens of lansoprazole in infants with gastroesophageal reflux", *Journal of Pediatric Gastroenterology and Nutrition*, volume-46 (3), Pp:352– 354.
23. **Kilgour T and Wade S**,(2005), "Infantile colic", *Clinical Evidence*, volume-13, Pp:362-372.
24. **Kohelet D, Boaz M and etal**, (2004), "Esophageal PH study and symptomatology of gastro esophageal reflux in newborn infants", *American journal of perinatology*, volume-21, Pp:85-91.

25. **Lucassen PLBJ, Assendelft WJJ and etal**, (2000), “Infantile colic: crying time reduction with a whey hydrolysate: a double-blind, randomized, placebo-controlled trial”, *Journal of Pediatric*, volume-106, Pp:1349-1354.
26. **Moore DJ, Tao BS and etal**, (2003), “Double-blind placebo-controlled trial of omeprazole in irritable infants with gastroesophageal reflux”, *Journal of Pediatrics*, volume-143 (2), Pp:219– 223.
27. **Mousa H, Woodley FW etal**, (2005), “Testing the association between gastro esophageal reflux and apnea in infants”, *Journal of Pediatric Gastroenterology and Nutrition*, volume-41, Pp:169-177.
28. **Neelam mohan, arun soni**, (2002), “Gastro esophageal reflux in neonates”, *journal of neonatology*, July-september, volume-16, no:3, Pp:257-265.
29. **Omari T, Davidson G and etal**, (2007), “Pharmacokinetics and acid-suppressive effects of esomeprazole in infants 1–24 months old with symptoms of gastroesophageal reflux disease”, *Journal of Pediatric Gastroenterology and Nutrition*, volume-45(5), Pp:530–537.
30. **Orenstein SR**, (2000), “Management of supra esophageal complications of gastro esophageal reflux disease in infants and

children”, American journal of medicine, volume-108, Suppl(49),  
Pp:139-143.

31. **Orenstein SR, Hassall E and etal**, (2009), “ Double-blind, randomized, placebo-controlled trial assessing the efficacy and safety of proton pump inhibitor lansoprazole in infants with symptoms of gastroesophageal reflux disease”, Journal of Pediatrics, volume-154 (4), Pp:514– 520.
32. **Orenstein SR, Shalaby TM etal**, (2003), “Famotidine for infant gastro esophageal reflux”, Journal of Aliment pharmacology therapy, volume-17, Pp:1097-1107.
33. **Paula.D.Scariati and etal**, (2010), “Risk of diarrhea related to iron content of infant formula: Lack of evidence to support the use of low-iron formula as a supplement for breastfed infants”, Official journal of the American Academy of Pediatrics, May-25, Pp:2-4.
34. **Robins –Browne R.M, E.L.Hart land and etal**, (2002), “Escherichia coli as a cause of diarrhea”, Journal of gastro enterology and hepatology, volume-17, Pp:467-475.
35. **Rudolph CD, Mazur LJ and etal**, (2001), “Guidelines for evaluation and treatment of gastro esophageal reflux in infants and children”, Journal of Pediatric Gastroenterology and Nutrition, volume-32 (suppl-2), Pp:1-31.

36. **Sampson HA, Sicherer SH and etal**, (2001), “AGA technical review on the evaluation of food allergy in gastrointestinal disorders”, Journal of Gastroenterology, volume-120, Pp:1026-1040.
37. **Sandritter T**, (2003), “Gastro esophageal reflux disease in infants and children”, Journal of pediatric health care, volume-17, Pp:198-205.
38. **Sticker.T, Braegger CP and etal**, (2000), “Constipation and intolerance to cow’s milk allergy”, clinical pediatrics, July, volume-40(7), Pp:399-402.
39. **Susan .S. Baker and etal**, (2006), “Evaluation and treatment of constipation and children”, Journal of Pediatric Gastroenterology and Nutrition, June-3, volume-43, Pp:1-13.
40. **Therasa.J.Ochoa**, (2009), “Age-related susceptibility to infection with diarrheagenic Escherichia coli among infants from periurban areas in Lima, Peru”, Oxford journals medicine-clinical infectious diseases, volume-49, issue:11, Pp:1694-1702.
41. **Ulysses Fagundes-Neto and Jacy A.B.de Andrade**, (1999), “Acute diarrhea and Malnutrition: Lethality risk in hospitalized infants”, Journal of the American college of nutrition, August, volume-18, no:4, Pp:303-308.

42. **Vander Berg MM and etal**, (2005), “Functional constipation in infants: A follow-up study”, *Journal of Pediatrics*, November, volume-147 (5), Pp:700-704.
43. **Vanderhoof JA and etal**, (2001), “Allergic constipation: Association with infantile milk allergy”, *Clinical Pediatrics*, July, volume-40 (7), Pp:399-402.
44. **Vernacchio L and etal**, (2006), “Diarrhea in American infants and young children in the community setting: Incidence, Clinical presentation and Microbiology”, *Pediatric infectious disease journal*, volume-25, Pp:2-7.
45. **Vorasith Sornsrivichai**, (2008), “Hospitalized infant morbidity in the prospective cohort study of Thailand children project”, *Journal of Medical Association Thailand*, volume-91, no:6, Pp:882-888.
46. **Wendy.S.Biggs and etal**, (2006), “Evaluation and treatment of constipation in infants and children”, *A peer reviewed journal of the American Academy of family physicians*, February-1, volume-73, no:3, Pp:469-477.
47. **Wenzl TG,Schenkes and etal**, (2001), “Association of apnea and nonacid gastro esophageal reflux in infants”, *Journal of pediatrics and pulmonology*, volume-31, Pp:144-149.



48. **Yimyaem.P**, (2003), “Gastro intestinal manifestations of cow’s milk protein allergy during the first year of life”, Journal of medical association Thailand, February, volume-86 (2), Pp:116-123.

## **APPENDIX-A**

### **LETTER SEEKING PERMISSION TO CONDUCT THE STUDY**

**From:**

**Mrs.P.SENTHAMARAI,**  
M.Sc.Nursing II Year,  
Vivekanandha College of Nursing,  
Elayampalayam.

**To:**

**THE DEPUTY DIRECTOR OF HEALTH SERVICES,**  
Namakkal district.

**Respected Sir/ Madam:**

**Sub: Requesting permission to conduct a study among  
mothers having infants.**

I am **Mrs.P.SENTHAMARAI**, M.Sc Nursing II year student (child health nursing),Vivekanandha college of nursing, Elayampalayam have undertaken a thesis on the topic “ **A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM,TIRUCHENGODU.**”

## **OBJECTIVES:**

- ❖ To assess the knowledge of mothers regarding the selected gastrointestinal problems of infants.
- ❖ To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.
- ❖ To prepare a health education package on selected gastro intestinal problems of infants.

I request you to kindly grant me permission to conduct the study in kumaramangalam village by collecting the necessary information related to the study.

Thanking you,

Your's faithfully,

**Mrs.P.SENTHAMARAI.**

Place: Tiruchengodu

Date:

## **APPENDIX-B**

### **LETTER GRANTING PERMISSION TO CONDUCT THE STUDY**

**From:**

**THE DEPUTY DIRECTOR OF HEALTH SERVICES,**  
Namakkal district.

**Subject: Permission to conduct a study among mothers  
having infants in kumaramangalam village.**

With reference to the above letter, it has been informed that **Mrs.P.SENTHAMARAI** II Year M.Sc Nursing student, Vivekanandha college of nursing, Elayampalayam, is granted permission to conduct her study on **“A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM,TIRUCHENGODU.”**

With regards,

Yours sincerely,

Place:

The Deputy Director of

Date:

Health Services,

Namakkal district.

## **APPENDIX-C**

### **LETTER FOR VALIDATION OF THE TOOL**

**From:**

**Mrs.P.SENTHAMARAI,**  
M.Sc.Nursing II Year,  
Vivekanandha College of Nursing,  
Elayampalayam.

**To:**

**Respected Sir/ Madam:**

**Sub: Requesting for the content validation of the tool.**

I **Mrs.P.SENTHAMARAI**, M.Sc Nursing II year student (child health nursing), Vivekanandha college of nursing, Elayampalayam have taken a project on “ **A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM, TIRUCHENGODU.**” To be submitted to Tamilnadu Dr.M.G.R.Medical university as partial fulfillment for Master of Nursing degree.

## **OBJECTIVES OF THE STUDY:**

- ❖ To assess the knowledge of mothers regarding the selected gastrointestinal problems of infants.
- ❖ To find out the relationship between knowledge scores with selected socio demographic variables such as age, religion, education, occupation, income, type of family, number of children, source of water supply, type of house and source of information.
- ❖ To prepare a health education package on selected gastro intestinal problems of infants.

To achieve the above mentioned objectives, I have prepared a semi structured interview schedule. I request you to kindly give your expert opinion and suggestion. kindly sign the enclosed certificate that you have validated the tool.

Thanking you,

Your's faithfully,

**Enclosures:**

**Mrs.P.SENTHAMARAI.**

1. Semi structured interview schedule.
2. Score key.
3. Evaluation checklist
4. Certificate of validation.

## **APPENDIX-D**

### **LETTER SEEKING PERMISSION FROM THE PARTICIPANTS**

Dear participants,

I am **Mrs.P.SENTHAMARAI**, M.Sc., Nursing student of Vivekanandha college of Nursing, Tiruchengode is interested to know more about your knowledge on selected gastro intestinal problems of infants. The information that you are giving will be kept confidential and will be used only for this study. Please participate in this programme by answering my questions honestly and state your willingness to participate in this study.

Thanking you,

Your's truly,

**Mrs.P.Senthamarai.**

Name :

Signature:

### **CONSENT FROM THE PARTICIPANT**

I understand the purpose of this study and I am willing to participate in this study.

Signature

**APPENDIX-E**  
**SEMI STRUCTURED INTERVIEW SCHEDULE**  
**SECTION – A**  
**SOCIO DEMOGRAPHIC DATA OF MOTHERS**  
**HAVING INFANTS**

- 1) Code no:
- 2) Age in years
  - 2.1. ≤ 20 years. [ ]
  - 2.2. 21–30 years. [ ]
  - 2.3. 31 –40 years. [ ]
  - 2.4. Above 40 years. [ ]
- 3) Religion
  - 3.1. Hindu. [ ]
  - 3.2. Christian. [ ]
  - 3.3. Muslim. [ ]
- 4) Educational Qualification
  - 4.1. Illiteracy. [ ]
  - 4.2. Primary education. [ ]
  - 4.3. Secondary education. [ ]
  - 4.4. Graduate. [ ]
- 5) Occupation
  - 5.1. House wife. [ ]
  - 5.2. Cooly. [ ]
  - 5.3. Self employee. [ ]
  - 5.4. Private employee. [ ]
  - 5.5. Government employee. [ ]



- 6) Family income per month
- 6.1. Below RS.2000. [ ]
  - 6.2. RS.2001-3000. [ ]
  - 6.3. RS.3001-4000. [ ]
  - 6.4. Above RS. 4001. [ ]
- 7) Type of family
- 7.1. Nuclear family. [ ]
  - 7.2. Joint family. [ ]
- 8) Number of children in the family
- 8.1. One. [ ]
  - 8.2. Two. [ ]
  - 8.3. More than two. [ ]
- 9) Source of water supply
- 9.1. Public tap. [ ]
  - 9.2. Bore well. [ ]
  - 9.3. Well. [ ]
- 10) Type of house
- 10.1. Pucca. [ ]
  - 10.2. Katcha. [ ]
  - 10.3. Hut. [ ]
- 11) Source of information about gastro intestinal problems of infants
- 11.1. Family members. [ ]
  - 11.2. Friends. [ ]
  - 11.3. Health workers. [ ]
  - 11.4. Mass media (Television, radio, magazine). [ ]

## SECTION – B

### KNOWLEDGE ON SELECTED GASTROINTESTINAL PROBLEMS OF INFANTS

- 12) What is growth?
- 12.1. Progressive increase in skill and capacity to function. [ ]
  - 12.2. Increase in physical size of the whole or any of its parts. [ ]
  - 12.3. It is a qualitative change in the child's body. [ ]
- 13) Which growth period is considered as infancy?
- 13.1. Birth to 12 months. [ ]
  - 13.2. Birth to 7 months. [ ]
  - 13.3. Birth until 28 days. [ ]
- 14) What is the average birth weight of Indian baby?
- 14.1. 2000 gm-2500 gm. [ ]
  - 14.2. 2500 gm -3000 gm. [ ]
  - 14.3. 3000 gm-3500 gm. [ ]
- 15) What are the physical development during infancy?
- 15.1. Holds head erect and steady at 3 months. [ ]
  - 15.2. Eruption of primary teeth begins at 5 to 7 months. [ ]
  - 15.3. Sits alone briefly at 6 months. [ ]
  - 15.4. Crawling begins at 8 months and Creeping begins at 9 months. [ ]
  - 15.5. Walks in few steps with or without help at 12 months. [ ]
- 16) What is the emotional development during infancy?
- 16.1. Learns to trust the adults usually the parents. [ ]
  - 16.2. Begins to show early signs of individuality. [ ]
  - 16.3. Want to learn what they can do for themselves. [ ]

- 17) What is the cognitive development during infancy?
- 17.1. Learning about physical objects. [ ]
  - 17.2. Preoccupied with symbols in language. [ ]
  - 17.3. Move into abstract world and mastering numbers. [ ]
- 18) How long can exclusive breast feeding be given?
- 18.1. Up to 4 months. [ ]
  - 18.2. Up to 5 months. [ ]
  - 18.3. Up to 6 months. [ ]
- 19) What is the ideal time to start weaning diet?
- 19.1. 4-6 months onwards. [ ]
  - 19.2. 6-9 months onwards. [ ]
  - 19.3. 9-12 months onwards. [ ]
- 20) What is the ideal time to introduce the normal food?
- 20.1. After 1 year. [ ]
  - 20.2. After 1 ½ years. [ ]
  - 20.3. After 2 years. [ ]
- 21) What are the common gastrointestinal problems of infants?
- 21.1. Abdominal colic. [ ]
  - 21.2. Constipation. [ ]
  - 21.3. Diarrhea. [ ]
  - 21.4. Vomiting. [ ]
  - 21.5. Gastro esophageal reflux. [ ]
- 22) What is abdominal colic?
- 22.1. Sudden paroxysmal intestinal cramps. [ ]
  - 22.2. Inflammatory lesion of the gastric mucosa. [ ]
  - 22.3. Break in the mucosa of the stomach. [ ]

- 23) What are the causes of abdominal colic?
- 23.1. Physiological immaturity of the intestine. [ ]
  - 23.2. Cow's milk allergy. [ ]
  - 23.3. Excessive swallowing of air. [ ]
  - 23.4. Improper feeding technique ( especially in positioning and burping). [ ]
- 24) What are the signs and symptoms of abdominal colic?
- 24.1. Crying for more than 3 hours per day. [ ]
  - 24.2. Abdominal pain and passing flatus. [ ]
  - 24.3. Inadequate intake or feeding. [ ]
  - 24.4. Sleeping disturbances. [ ]
- 25) What are the treatment measures for abdominal colic?
- 25.1. Eliminate cow's milk from his or her diet. [ ]
  - 25.2. Warm water be given to stimulate peristalsis. [ ]
  - 25.3. Place in upright position and burping of infant. [ ]
  - 25.4. Provide small and frequent feeding. [ ]
- 26) What is reflux?
- 26.1. Back ward flow( regurgitation) [ ]
  - 26.2. Forceful expulsion of gastric contents through the mouth. [ ]
  - 26.3. Involuntary instantaneous response to a stimulus. [ ]
- 27) What is gastro esophageal reflux?
- 27.1. Back flow of gastric or duodenal contents in to the esophagus. [ ]
  - 27.2. Voluntary or habitual bringing up of a feeding after it has been swallowed. [ ]
  - 27.3. Mild, short-lived illness, frequently caused by a viral infection. [ ]

- 28) What are the causes of gastro esophageal reflux?
- 28.1. Immature lower esophageal sphincter. [ ]
  - 28.2. Short , narrow esophagus. [ ]
  - 28.3. Horizontal body position. [ ]
  - 28.4. Small, non compliant stomach. [ ]
  - 28.5. Frequent, relatively large volume feeding. [ ]
- 29) What are the signs and symptoms of gastro esophageal reflux?
- 29.1. Vomiting immediately after feeding. [ ]
  - 29.2. Excessive crying and Refusal of eating. [ ]
  - 29.3. Features of dehydration. [ ]
  - 29.4. Respiratory symptoms like coughing, wheezing. [ ]
  - 29.5. Failure to thrive or weight loss. [ ]
- 30) What are the treatment measures for gastro esophageal reflux?
- 30.1. Small and frequent feedings. [ ]
  - 30.2. Avoid over feeding. [ ]
  - 30.3. Hold baby in an upright position during feeding. [ ]
  - 30.4. Burping of infant immediately after feeding. [ ]
- 31) What are the food items to be avoided in gastro esophageal reflux?
- 31.1. Spicy foods. [ ]
  - 31.2. Fatty foods. [ ]
  - 31.3. Citrus products including citrus juices. [ ]
  - 31.4. Caffeinated drinks. [ ]
- 32) What are the complications of gastro esophageal reflux?
- 32.1. Anemia. [ ]
  - 32.2. Aspiration pneumonia. [ ]
  - 32.3. Chronic esophagitis and esophageal stricture. [ ]
  - 32.4. Failure to thrive. [ ]
  - 32.5. Sudden infant death syndrome. [ ]

33) What is vomiting?

33.1. Forceful expulsion of stomach content through the mouth. [ ]

33.2. Transfer of gastric contents in to the esophagus. [ ]

33.3. Passage of refluxed gastric contents in to the oropharynx. [ ]

34) What are the causes of vomiting?

34.1. Faulty feeding techniques. [ ]

34.2. Swallowed air. [ ]

34.3. Infections of the intestine. [ ]

34.4. Blockage or narrowing of the stomach or intestines. [ ]

34.5. Introduction of new foods and allergy to certain foods.[ ]

35) What are the associated symptoms of vomiting?

35.1. Fever. [ ]

35.2. Headache and abdominal pain. [ ]

35.3. Fluid and electrolyte imbalance [ ]

35.4. Drowsiness. [ ]

36) What are the treatment measures for vomiting?

36.1. With holding oral fluids for a few hours. [ ]

36.2. Stomach wash in neonates and infants. [ ]

36.3. Administration of intravenous fluids. [ ]

36.4. Administration of antiemetics. [ ]

36.5. Organic causes should be diagnosed and treated early. [ ]

37) What are the home remedies for vomiting?

37.1. Continue to breast feed. [ ]

37.2. Hygienic method of preparation and serving of foods. [ ]

37.3. Hold baby in an upright position during feeding. [ ]

37.4. Fluid replacement by oral rehydration therapy. [ ]

38) When to seek doctor's consultation in vomiting?

- 38.1. Green or blood tinged vomit. [ ]
- 38.2. Vomiting that continues for more than 24 hours. [ ]
- 38.3. Infant refuses to eat or drink more than a few hours. [ ]
- 38.4. Severe abdominal pain and fever. [ ]
- 38.5. Lethargy and moderate to severe dehydration. [ ]

39) What is constipation?

- 39.1. Increase in the frequency of bowel movements. [ ]
- 39.2. Passage of loose watery stools. [ ]
- 39.3. Dry and hard stool often with difficulty and pain. [ ]

40) What are the causes of constipation?

- 40.1. Insufficient intake of food. [ ]
- 40.2. Lack of fluid intake. [ ]
- 40.3. Artificial feeding. [ ]
- 40.4. Delayed introduction of semisolid food. [ ]
- 40.5. Lack of roughage in diet and chronic illness. [ ]

41) What are the signs and symptoms of constipation?

- 41.1. Abdominal pain and discomfort. [ ]
- 41.2. Flatulence. [ ]
- 41.3. Loss of appetite. [ ]
- 41.4. Nausea and vomiting. [ ]
- 41.5. Disturbed sleep. [ ]

42) What are the treatment measures for constipation?

- 42.1. Increasing intake of fluids and water. [ ]
- 42.2. Increase fibre in diet. [ ]
- 42.3. Feeding with apple or prune juice. [ ]
- 42.4. Stool softeners and laxatives. [ ]

- 43) What are the types of medications used for constipation?
- 43.1. Milk of magnesia. [ ]
  - 43.2. Mineral oil. [ ]
  - 43.3. Stimulant laxatives. [ ]
  - 43.4. Lactulose. [ ]
  - 43.5. Miralax. [ ]
- 44) What is diarrhea?
- 44.1. Increased frequency with liquidity of faecal discharge.[ ]
  - 44.2. Increased passage of dry and hard stool. [ ]
  - 44.3. Passage of frequent loose or watery stools with visible blood. [ ]
- 45) What are the infectious agents causing diarrhea?
- 45.1. Viruses. [ ]
  - 45.2. Bacteria. [ ]
  - 45.3. Parasites. [ ]
  - 45.4. Fungi. [ ]
- 46) What are the causes of diarrhea?
- 46.1. Malnutrition. [ ]
  - 46.2. Food allergy and poisoning. [ ]
  - 46.3. Pre maturity and lack of personal hygiene. [ ]
  - 46.4. Infections like pneumonia, tonsillitis etc. [ ]
  - 46.5. Incorrect or unhygienic infant feeding practices. [ ]
- 47) What are the mode of transmission for diarrhea?
- 47.1. Contaminated water. [ ]
  - 47.2. Contaminated food. [ ]
  - 47.3. Fingers. [ ]
  - 47.4. Flies. [ ]
  - 47.5. Contaminated articles. [ ]



48) What are the signs and symptoms of diarrhea?

- 48.1. Low grade fever. [ ]
- 48.2. Loss of appetite with vomiting. [ ]
- 48.3. Increased frequency of passing stools and abdominal iscomfort. [ ]
- 48.4. Behavioral changes like irritability, restlessness. [ ]
- 48.5. Physical changes like sunken eyes, depressed fontanelles, poor skin turgor, weight loss. [ ]

49) What are the treatment measures for diarrhea?

- 49.1. Oral rehydration therapy and continue breast feeding. [ ]
- 49.2. Provide food like rice, potatos, wheat, pulses, fruits, vegetables and rice milk. [ ]
- 49.3. Provide small and frequent feeding. [ ]
- 49.4. Hygienic measures to be followed during preparation and serving of foods. [ ]
- 49.5. Administration of intravenous fluid therapy in severe dehydration [ ]

50) What are the complications of diarrhea?

- 50.1. Dehydration. [ ]
- 50.2. Malnutrition. [ ]
- 50.3. Growth retardation. [ ]
- 50.4. Hypovolemic shock. [ ]
- 50.5. Convulsions. [ ]

51) What are the preventive measures of diarrhea?

- 51.1. Using of safe water and boiling of feeding vessels. [ ]
- 51.2. Hand washing practices. [ ]
- 51.3. Fly control. [ ]
- 51.4. Washing of fruits and vegetables. [ ]
- 51.5. Adequate sewage disposal. [ ]

<b>SCORE KEY</b>		
<b>Q.NO</b>	<b>CORRECT RESPONSES</b>	<b>SCORE</b>
12	12.2	1
13	13.1	1
14	14.2	1
15	15.1,15.2,15.3,15.4,15.5	5
16	16.1	1
17	17.1	1
18	18.3	1
19	19.1	1
20	20.1	1
21	21.1,21.2,21.3,21.4,21.5	5
22	22.1	1
23	23.1,23.2,23.3,23.4	4
24	24.1,24.2,24.3,24.4	4
25	25.1,25.2,25.3,25.4	4
26	26.1	1
27	27.1	1
28	28.1,28.2,28.3,28.4,28.5	5
29	29.1,29.2,29.3,29.4,29.5	5
30	30.1,30.2,30.3,30.4	4
31	31.1,31.2,31.3,31.4	4
32	32.1,32.2,32.3,32.4,32.5	5
33	33.1	1
34	34.1,34.2,34.3,34.4,34.5	5
35	35.1,35.2,35.3,35.4 .	4
36	36.1,36.2,36.3,36.4,36.5	5
37	37.1,37.2,37.3,37.4	4

38	38.1,38.2,38.3,38.4,38.5	5
39	39.3	1
40	40.1,40.2,40.3,40.4,40.5	5
41	41.1,41.2,41.3,41.4,41.5	5
42	42.1,42.2,42.3,42.4	4
43	43.1,43.2,43.3,43.4,43.5	5
44	44.1	1
45	45.1,45.2,45.3,45.4	4
46	46.1,46.2,46.3,46.4,46.5	5
47	47.1,47.2,47.3,47.4,47.5	5
48	48.1,48.2,48.3,48.4,48.5	5
49	49.1,49.2,49.3,49.4,49.5	5
50	50.1,50.2,50.3,50.4,50.5	5
51	51.1,51.2,51.3,51.4,51.5	5
	<b>TOTAL</b>	<b>135</b>

**neh;fhzy; gl;oay;**  
**gphpt[ ? m**  
**rKjha r{H;epiy fhuzpfs;**

1/ FwpaPl;L vz;

2/ taJ

2/1/ 20 kw;Wk; 20 tajpw;F fPH; [ ]

2/2/ 21?30 taJ [ ]

2/3/ 31?40 taJ [ ]

2/4 40 tajpw;F nky; [ ]

3/ kjk;

3/1/ ,e;J [ ]

3/2/ fpwp!;Jth; [ ]

3/3/ Kl;ypk; [ ]

4/ fy;tpj; jFjp

4/1/ gof;fhjth; [ ]

4/2/ Muk;gf; fy;tp [ ]

4/3/ cah;epiyf; fy;tp [ ]

4/4/ gl;lg; gog;g[ [ ]

5/ bjhHpy;

5/1/ FLk;gj; jiytp [ ]

5/2/ Typ [ ]

5/3/ Ra bjhHpy; [ ]

5/4/ jdpahh; ntiy [ ]

5/5/ murh';f ntiy [ ]

6/ FLk;g khj tUkhdk;

6/1/ U:/2000?f;Fk; fPH; [ ]

6/2/ U:/2001? 3000 tiu [ ]

6/3/ U:/3001? 4000 tiu [ ]

6/4/ U:/4001f;Fk; nky; [ ]

7/ FLk;gj;jpd; tif

7/1/ jdPf; FLk;gk; [ ]

7/2/ Tl;Lf; FLk;gk; [ ]

8/ c';fs; FLk;gj;jpy; vj;jid FHe;ijfs; cs;sdh;>

8/1/ 1 FHe;ij [ ]

8/2/ 2 FHe;ijfs; [ ]

8/3/ 2 FHe;ijfSf;F nky; [ ]

9/ tPl;ow;F njitahd jz;zPh; v';fpUe;J fpilf;fpwJ>

9/1/ bghJ FHha; [ ]

9/2/ MH;Jis fpzW [ ]

9/3/ fpzW [ ]

10/ tPl;od; tif

10/1/ kho tPL [ ]

10/2/ Xl;L tPL [ ]

10/3/ Foir tPL [ ]

11/FHe;ijfspd; cztr; brhpkhd gpur;ridfs; gw;wpa jfty;fis ahh;

K:ykhf mwpe;J bfhz; Oh;fs;>

11/1/ FLk;gj;jpy; cs;sth;fs; [ ] 11/2/

ez;gh;fs; [ ]

11/3/ Rfhjhu gzpahsh;fs; [ ]

11/4/ jfty; bjhlh;g[ rhjd';fs; [ ]

(bjhiyf;fh;rp. gj;jphpf;if.thbdhyp [ ]

**gphpt[ ?M**

**FHe;ijfspd; njh;e;bjLf;fg;gl;l czt[r; brhpkhd gpur;ridfs;**

**gw;wpa mwpt[j;jpwd; fhuzpfs;**

12/ tsh;r;rp vd;why; vd;d>

12/1/ jpwik kw;Wk; ntiy bra;a[k; rf;jp mjpfhpj;jy;

[ ]

12/2/ bkhj;j clypd; mst[ (m) clypd; VnjDk; xU

gFjp mjpfhpj;jy;/ [ ]

12/3/ FHe;ijfspd; clypy; Vw;gLk; Fzkhw;wk; [ ]

13/ FHe;ijg; gUtkhf fUjg;gLk; fhyk; vJ>

13/1/ gpwe;jjppUe;J 12 khj';fs; tiu [ ]

13/2/ gpwe;jjppUe;J 7 khj';fs; tiu [ ]

13/3/ gpwe;jjppUe;J 28 ehl;fs; tiu [ ]

14/ ,e;jpa ehl;od; ruhrhp FHe;ijapd; vil vd;d>

14/1/ 2000 fpuhk; ? 2500 fpuhk; [ ]

14/2/ 2500 fpuhk; ? 3000 fpuhk; [ ]

14/3/ 3000 fpuhk; ? 3500 fpuhk;/ [ ]

15/ FHe;ijg; gUtj;jpy; Vw;gLk; cly; Kd;ndw;w';fs; ahit>

15/1/ 3 khj';fspy; fGj;J neuhf epw;Fjy;/ [ ]

15/2/ 5?7 khj';fspy; Muk;g gw;fs; Kisj;jy; [ ]

15/3/ 8 khj';fspy; jtH Muk;gpj;jy; kw;Wk; 9

khj';fspy; kz;oapl;L efu Muk;gj;jy;/ [ ]

15/4/ 6 khj';fspy; jdpahf cl;fhUjy; [ ]

15/5/ 12 khj';fspy; kw;wthpd; cjtpa[lid; (my;yJ)

jhdhfnt elf;f Muk;gpj;jy;/ [ ]

16/ FHe;ijg; gUtj;jpy; Vw;gLk; kd Kd;ndw;wk; vJ>

16/1/ Kjpath;fspy; Kf;fpakhf bgw;nwhh;fspk;  
ek;gpf;if itj;jy;; [ ]

16/2/ jdpj;J epw;Fk; jd;ikiaf; fhl;l Muk;gpj;jy;/

[ ]

16/3/ mth;fshy; bra;a Koa[k; ntiyfif; fw;W  
bfhs;Sjy; [ ]

17/ FHe;iig; gUtj;jpy; mwptpy; Vw;gLk; mwpt[ Kd;ndw;wk; vJ>

17/1/ bghUl;fspd; bgah;fisf; fw;f Muk;gpj;jy;/ [ ]

17/2/ bkhHpfspy; cs;s milahs Fwfpis Kd;djh

fw;Wf; bfhs;Sjy;/ [ ]

17/3/ ftdr; rpjwy; kw;Wk; vz;fis fw;Wf;

bfhs;Sjy;/ [ ]

18/ jha;g;ghy; kl;Lk; vj;jid khj';fs; tiu bfhLf;fyhk;>

18/1/ 4 khj';fs; tiu [ ] 18/2/ 5

khj';fs; tiu [ ]

18/3/ 6 khj';fs; tiu [ ]

19/ ,iz czt[ bfhLf;f Muk;gpf;Fk; fhyk; vJ>

19/1/ 4?6 khj';fs; Kjy; [ ]

19/2/ 6?9 khj';fs; Kjy; [ ]

19/3/ 9?12 khj';fs; Kjy; [ ]

20/ tHf;fkhd czt[ bfhLf;f Muk;gpf;Fk; fhyk; vJ>

20/1/ 1 tajpw;F nky; [ ]

20/2/ 1\ tajpw;F nky; [ ]

20/3/ 2 tajpw;F nky; [ ]

21/ FHe;ijfspd; bghJthd brhpkhd gpur;ridfs; ahit>

21/1/ tapw;W jpUFtyp [ ]

21/2/ kyr;rpf;fy; [ ]

21/3/ tapw;Wg; nghf;F [ ]

21/4/ the;jp [ ]

21/5/ ,iug;ig czt[f;FHy; nky; vGjy;/ [ ]

22/ tapw;W jpUFtyp vd;why; vd;d>

22/1/ jp; Obud Fly; jirfsy; Vw;gLk; ,Gg;g[ typ [ ]

22/2/ tapw;wpd; cl;Rtw;wpy; Vw;gLk; g[z; [ ]

22/3/ tapw;wpd; cl;Rtw;wpy; Vw;gLk; rpijt[/ [ ]

23/ tapw;W jpUFtypapd; fhuz';fs; ahit>

23/1/ KG tsh;r;rpailahj Fly; [ ] 23/2/ khl;L ghy; myh;\$p [ ]

23/3/ mjpfkhd fhw;iw tpG';Fjy; [ ]

23/4/ jtwhd Kiwapy; ghy; bfhLj;jy; (Kf;fpakhf ghy; bfhLf;Fk; epiy kw;Wk; njhy;gl;ilapy; nghl;L jl;of; bfhLf;fhky; ,Uj;jy;)/ [ ]

24/ tapw;W jpUFtypapd; mwpFwpfs; ahit>

24/1/ xU ehspy; 3kzp neu;j;pw;Fk; nky; mGjy;/ [ ]

24/2/ tapw;W typ kw;Wk; fhw;W gphpjy; [ ]

24/3/ njitf;F Fiwthd czt[ cl;bfhs;Sjy;/ [ ]

24/4/ J}f;fkpd;ik/ [ ]

25/ tapw;W jpUFtypapd; rpfpr;ir Kiwfs; ahit>

25/1/ khl;Lg;ghy; bfhLg;gij jtph;j;jy; [ ]

25/2/ Fly; brhpkhd ,af;fj;ijj; J}z;l btJbtJg;ghd jz;zPiu bfhLj;jy;/ [ ] 25/3/ FHe;ijia neuhf epWj;Jjy; kw;Wk;



njhs;gl;ilapy; nghl;L jl;of; bfhLj;jy;/ [ ]  
 25/4/ mof;fo rpwpa mst[ czit bfhLj;jy;/ [ ]  
 26/ nky; vGjy; vd;why; vd;d>  
 26/1/ gpd; neh;fpr; bry;Yjy; [ ]  
 26/2/ thapd; tHpahf ,iug;igapYs;s czit[  
 bghUl;fs; xU typikahd tpira[lid;  
 btsptUjy;/ [ ]  
 26/3/ xU J}z;Ljydpdhy; clnd jhdhf nky; vGjy; [ ]  
 27/ ,iug;ig czit[f;FHy; nky; vGjy; vd;why; vd;d>  
 27/1/ czit[f;FHYf;F ,iug;igapYs;s czit[  
 bghUl;fs; gpd;neh;fp Xl;lk;/ [ ] 27/2/  
 czit[ tpG';fpat[lid; jhdhfnt nky;tHpahf  
 btsptUjy; [ ]  
 27/3/ itu!pdhy; Vw;gLk; xU rpwpa bjhw;Wneha;/ [ ]  
 28/ ,iug;ig czit[f;FHy; nky; vGjy;pd; fhuz';fs; ahit>  
 28/1/ KG tsh;r;rpailahj czit[f;FHypd; fPH;g;;;gFjp  
 RUf;fj; jirfs; [ ]  
 28/2/ rpwpa. FWfpd czit[f;FHy;/ [ ]  
 28/3/ gLj;j epiyapy; ,Uj;jy; [ ]  
 28/4/ rpwpa ,z';fhj ,iug;ig [ ]  
 28/5/ mof;fo. mjpgkhd mst[ czit[ bfhLj;jy;/ [ ]  
 29/ ,iug;ig czit[f;FHy; nky; vGjy;pd; mwpFwpfs; ahit>  
 29/1/ czit[ cl;bfhz;lt[lid; the;jp/ [ ]  
 29/2/ mjpgkhd mGif kw;Wk; czit[ cl;bfhs;s  
 kWj;jy; [ ]  
 29/3/ jput mst[ Fiwtpdhy; Vw;gLk; mwpFwp [ ]  
 29/4/ Rthr FHy; mwpFwpfs;/cjhuzk; ? ,Uky;.

rpukj;njhL K:r;R tpLj;/ [ ]

29/5/ tsh;r;;rp Fd;wpa epiy (m) vil ,Hg;g/[ [ ]

30/ ,iug;ig czt[f;FHypd; rpfpr;ir Kiwfs; ahit>

30/1/ mof;fo rpwpa mst[ czit bfhLj;jy; [ ]

30/2/ mjpf mst[ czt[ bfhLj;jiy jtph;j;jy;[ [ ] 30/3/ czt[  
bfhLf;Fk;nghJ FHe;ijia neuhd

epiyapy; ,Uj;jy; [ ]

30/4/ czt[ bfhLj;jt[ld; FHe;ijia Vg;gk; tpl  
itj;jy;/ [ ]

31/ ,iug;ig. czt[f;FHj; nky; vGjy; cs;s nghJ jtph;f;f ntz;oa czt[ tiffs;  
ahit>

31/1/ fhukhd czt[fs; (kpsF. fpuhk;g[. ,yt';fk;. Vyk;. Rf;F) [ ]

31/2/ bfhGg;g[ rj;jhd czt[fs; [ ]

31/3/ rpl;ul; ghd';fs; [ ]

31/4/ fhg;gp. njePh; [ ]

32/ ,iug;ig czt[f;FHj; nky; vGjyypd; gpd; tpist[fs; ahit>

32/1/ ,uj;jr; nrhif [ ]

32/2/ fgthjk; (epnkhdpah) [ ]

32/3/ ePz;l fhykhd czt[f;FHj; g[z; kw;Wk; [ ]  
czt[f;FHj; RUf;fk;

32/4/ tsh;r;rp Fd;wpa epiy [ ]

32/5/ jp; Obud FHe;ij ,wj;jy;/ [ ]

33/ the;jp vd;why; vd;d>

33/1/ thapd; tHpahf ,iug;igapYs;s cztl [ ]  
bghUl;fs; xUtypikahd tpira[lid;  
btsptUjy;/

33/2/ ,iug;igapd; cztl cztl[f;FHYf;F khw;wk;/

[ ]

33/3/ ,iug;igapd; cztl bjhz;ilf;Fr; bry;Yjy;/

[ ]

34/ the;jpapd; fhuz';fs; ahit>

34/1/ jtwhd cztl bfhLf;Fk; Kiwfs; [ ]

34/2/ fhw;iw tpG';Fjy; [ ]

34/3/ Fly; bjhw;W neha; [ ]

34/4/ FWfpd (m) mil;j ,iug;igf; Fly; [ ]

34/5/ gljpa cztl bfhLj;jy; kw;Wk; cztl myh;\$p

[ ]

35/ the;jpa[lid; tuf;Toa mwpFwpfs; ahit>

35/1/ fha;r;ry; [ ]

35/2/ jiytyp kw;Wk; tapw;W typ [ ]

35/3/ jput mst[ Fiwt[ [ ]

35/4/ ke;jk;/ [ ]

36/ the;jpapd; rpfpr;ir Kiwfs; ahit>

36/1/ tha;tHp jput Mfhuj;ijr; rpwpJ neuk; epWj;jp  
itj;jy; [ ]

36/2/ gr;rps'; FHe;ijfs; kw;Wk; FHe;ijfspd;  
,iug;igia fGt[jy;/ [ ]

36/3/ jput rf;jpia (FSf;nfh!;) brYj;Jjy;/ [ ]

36/4/ the;jpiaf; fl;Lg;gLj;j kUe;J bfhLj;jy;/ [ ]

36/5/ njf cWg;g[fspd; neha; fhuz';fisf;  
fz;Lgpoj;J rpfpr;iria Kd;djhf Muk;gpj;jy;/

[ ]

37/ the;jpiaf; Fzg;gLj;j tPl;oy; nkw;bfhs;Sk; tHpKiwfs; ahit>

37/1/ jha;g;ghiyj; bjhlh;e;J bfhLj;jy; [ ]

37/2/ Rj;jkhd Kiwapy; czit rikj;jy; kw;Wk;

ghpkhWjy; [ ]

37/3/ czt[ bfhLf;Fk;ngHJ FHe;ijia neuhd

epiyapy; epWj;Jjy;/ [ ]

37/4/ cg;g[ rh;f;fiu fiury; K:yk; jput ,Hg;ig

rhp bra;jy;/ [ ]

38/ the;jpapd; ngHJ kUj;Jthpd; rpfpr;iria njor; bry;y

ntz;oa epiyfs; ahit>

38/1/ gr;ir (m) ,uj;jk; fye;j the;jp [ ]

38/2/ 24 kzp neu;jpw;Fk; mjpfkhf bjhlh;e;J the;jp

[ ]

38/3/ rpy kzp neu;jpw;F nky; czt[ (m) jput

Mfhuj;ij epuhfhpj;jy;/ [ ]

38/4/ fLikahd tapw;W typ kw;Wk; fha;r;ry;/ [ ]

38/5/ RWRWg;gpd;ik kw;Wk; kpf mjpfkhd jputrf;jp

,Hg;g[ [ ]

39/ kyr;rpf;fy; vd;why; vd;d>

39/1/ mjpfkhd Fly; ,af;f;fs; [ ]

39/2/ ePh; nghd;w kyk; fHpj;jy; [ ]

39/3/ bfl;oahd kyj;ijf; fLikahd typalld;

fHpj;jy; [ ]

40/ kyr;rpf;fypd; fhuz';fs; ahit>

40/1/ njitf;F Fiwthd czt[ bfhLj;jy; [ ]

40/2/ njitf;F Fiwthd jput Mfhuk; bfhLj;jy;

[ ]

40/3/ braw;ifahd czt[fs; [ ]

40/4/ ghjp jpl epiyapy; cs;s czit fhyjhkjkhf  
 bfhLf;f Muk;gpj;jy;/ [ ]

40/5/ eh; rj; J Fiwthd czt[ kw;Wk; ePz;lfhykhd  
 bjhw;Wneha; [ ]

41/ kyr;rpf;fypd; mwpFwpfs; ahit>  
 41/1/ tapw;W typ kw;Wk; tapW mbrsfhpak; [ ]  
 41/2/ Flypy; tha[ cgj;jpuk; [ ]  
 41/3/ grpapd;ik [ ]  
 41/4/ Fkl;ly; kw;Wk; the;jp [ ]  
 41/5/ J}f;fkpd;ik [ ]

42/ kyr;rpf;fypd;; rpfpr;ir Kiwfs; ahit>  
 42/1/ jz;zPh; kw;Wk; jput Mfhuk; cl;bfhs;Sjiy  
 mjpfhpj;jy; [ ]  
 42/2/ mjpfkhd eh; r; rj; J cs;s czt[ [ ] 42/3/ Mg;gps;  
 rhW(\$P!;) bfhLj;jy; [ ]  
 42/4/ kyj;ij bkd;ikahf;Fk; kUe;J [ ]

43/ kyr;rpf;fypd; nghJ cgnahfg;gLj;Jk; kUe;J tiffs; ahit>  
 43/1/ kpy;f; Mg; bkf;dPrpah [ ]  
 43/2/ kpduy; Mapy; [ ]  
 43/3/ !;Lkpyd;L yhf;n!ot; [ ]  
 43/4/ yhf;Lnyh!; [ ]  
 43/5/ kpuhnyf;!; [ ]

44/ tapw;Wg;nghf;F vd;why; vd;d>  
 44/1/ kpf mof;fo ePh; nghd;w kyk; fHpj;jy; [ ]  
 44/2/ fLikahd kyk; fHpj;jy; [ ]  
 44/3/ mof;fo ,uj;jk; fye;j ePh; nghd;w kyk; [ ]  
 fHpj;jy;

45/ tapw;Wg;nghf;if Vw;gLj;Jk; bjhw;W neha; fpUkpfs; ahit>

45/1/ itu!; [ ]

45/2/ ghf; Ohpah [ ]

45/3/ nguirl;!; [ ]

45/4/ fhshd; [ ]

46/ tapw;Wg;nghf;fpd; fhuz';fs; ahit>

46/1/ Cl;lr;rj;J FiwghL [ ]

46/2/ czt[ xt;thik kw;Wk; tpc&k; [ ]

46/3/ KG tsh;r;rpailahj FHe;ij kw;Wk; cly;

Rfhjhukpd;ik [ ]

46/4/ bjhw;W neha;fs; cjhuzk; ? fgthjk;.

lhd;rpy;fl;o [ ]

46/5/ jtwhd (m) Rj;jkpy;yhj czt[ bfhLf;Fk;

gHf;f';fs;/ [ ]

47/ tapw;Wg;nghf;F ve;bje;j tHpfspdhy; gut[fpwJ>

47/1/ mRj;jkhd jz;zPh; [ ]

47/2/ mRj;jkhd czt[ [ ]

47/3/ mRj;jkhd tpuy;fs; [ ]

47/4/ <f;fs; [ ]

47/5/ mRj;jkhd bghUl;fs; [ ]

48/ tapw;Wg;nghf;fpd; mwpFwpfs; ahit>

48/1/ fha;r;ry; [ ]

48/2/ grpapd;ik kw;Wk; the;jp [ ]

48/3/ kpf mof;fo kyk; fHpj;jy; kw;Wk; tapw;wpd;

mbrsfhpak; [ ]

48/4/ Xa;tpd;ik. mGif

48/5/ clypy; Vw;gLk; khw;w';fs;/ cjhuz';fs; ?

FHtpGe;j fz; , gs;skhd cr;rp. njhy; twl;rp.  
vil Fiwjy;/ [ ]

49/ tapw;Wg;nghf;fpd; rpfpr;ir Kiwfs; ahit>  
49/1/ cg;g[r; rh;f;fiu fiury; kw;Wk; bjhlh;e;J  
jha;g;ghy; bfhLj;jy; [ ]

49/2/ mhprp. cUisf;fpH';F. nfhJik. gUg;g[  
tiffs;. gH';fs; fha;fwpfs; kw;Wk; mhprpf;  
f";rp Mfpait bfhLf;fyhk;/ [ ]

49/3/ mof;fo rpwpa mst[ czt[ bfhLj;jy; [ ]

49/4/ czt[ rik;jy; kw;Wk; ghpkhWjydpd; nghJ  
Rj;jkhd Kiwfisf; ifahSjy;/ [ ]

49/5/ kpf mjpfkhd clypd; jputmst[ ,Hg;gpd; nghJ  
jputrf;jpia (FSf;nfh!;) brYj;Jjy;/ [ ]

50/ tapw;Wg;nghf;fpd; gpd; tpist[fs; ahit>  
50/1/ ePh;r;rj;J ,Hg;g[ [ ]

50/2/ Cl;r;rj;J Fiwthd epiy [ ]

50/3/ Fd;wpa tsh;r;rp [ ]

50/4/ jp Oh;epiy Fiyt[ (!;!hf;) [ ]

50/5/ typg;g[ [ ]

51/ tapw;Wg;nghf;ifj; jLf;Fk; tHpKiwfs; ahit>  
51/1/ Rj;jkhd jz;zPiu cgnahfgLj;Jjy; kw;Wk;  
czt[ bfhLf;Fk; ghj;jpu';fisf; bfhjpf;f  
itf;f ntz;Lk;/ [ ]

51/2/ iffis ed;whf fGt[jy; [ ]

51/3/ bfhRitf; fl;Lg;gLj;Jjy; [ ]

51/4/ gH';fs; kw;Wk; fha;fwpfis fGtp [ ]  
cgnahfg;gLj;Jjy;  
51/5/ fHpt[ePiu Kiwahf mg;g[wg;gLj;Jjy;/ [ ]

## **APPENDIX-F**

### **EVALUATION CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL**

#### **INSTRUCTIONS**

The expert is required to go through the tool and the content and to give opinion in the column given in the criteria table. If the tool is not meeting the criteria, please give your valuable suggestion in the remarks column.



<b>S.NO</b>	<b>CRITERIA</b>	<b>YES</b>	<b>NO</b>	<b>REMARKS</b>
1.	<p><b>Demographic variables</b></p> <p>The items on base line data cover all aspects necessary for the study.</p>			
2.	<p><b>Semi structured interview schedule of knowledge on selected gastro intestinal problems of infants</b></p> <p>a. Relevant to the topic of the study</p> <p>b. Content organization</p> <p>c. Language is simple and easy to understand</p> <p>d. Clarify of items used</p> <p>e. Any other suggestions</p>			

## **APPENDIX-G**

### **CERTIFICATION OF VALIDATION**

This is to certify that

Tool: Semi structured interview schedule

Section A: Socio demographic data of mothers having infants

Section B: Knowledge on selected gastro intestinal problems of infants

Prepared by **Mrs.P.SENTHAMARAI** II Year M.Sc nursing student of Vivekanandha college of nursing to be used in her study title “**A STUDY TO ASSESS THE KNOWLEDGE ON SELECTED GASTRO INTESTINAL PROBLEMS OF INFANTS AMONG MOTHERS IN A SELECTED RURAL AREA, KUMARAMANGALAM,TIRUCHENGODU.**” has been validated by me.

Signature:

Name:

Designation:

Date:

**APPENDIX-H  
HEALTH EDUCATION  
PAMPHLET ON SELECTED  
GASTRO INTESTINAL  
PROBLEMS OF INFANTS  
INTRODUCTION:**

Children to be well-nourished, they need energy from a wide variety of nutrients to lead a healthy and happy life. A child who feels loved and is well –

nourished, has a rather low risk of getting serious infections. But today’s infants are suffering from many type of diseases and these to be prevented.

**SELECTED GASTRO  
INTESTINAL PROBLEMS  
OF INFANTS:**

- Abdominal colic
- Gastro esophageal reflux
- Vomiting

➤ Constipation and Diarrhea



**1.ABDOMINAL COLIC**

Abdominal colic refers to sudden paroxysmal intestinal cramps caused by the production and accumulation of excess gas, which causes abdominal distention and pain.



130

- Excessive air swallowing
- Improper feeding technique (especially in positioning and burping)

**ETIOLOGY:**

- Sensitive to cow's milk



- Too rapid feeding
- Emotional stress



**SIGNS AND SYMPTOMS:**

- Abdominal pain

- Crying (more than 3 hours/day for more than 3 days/week for more than 3 weeks)

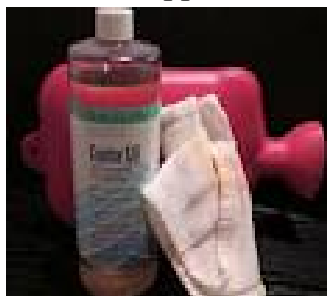


- Inadequate intake or feeding
- Sleeping disturbances



**MANAGEMENT:**

- Eliminate cow's milk from the diet
- Hot water application



- Warm water be given to stimulate peristalsis.
- Administration of sedatives and antispasmodics as per doctors advice.



**PREVENTION:**

- ✓ Give small and frequent feeding
- ✓ Place in upright position and burping of infant



- ✓ Reduce emotional stress.

**2. GASTRO ESOPHAGEAL REFLUX:**

Gastro esophageal reflux is the transfer of gastric contents into the esophagus.



**ETIOLOGY:**

- Delayed maturation of esophageal Neuromuscular control.

- Increased abdominal pressure.
- Obesity



- Frequent, large volume feeding



### SIGNS AND SYMPTOMS

- ❖ Vomiting
- ❖ Excessive crying



- ❖ Failure to thrive or loss of weight



- ❖ Recurrent respiratory infections



- ❖ Iron deficiency anemia

### MANAGEMENT:

- ✓ Upright positioning



- ✓ Provide small and frequent feeding
- ✓ Administration of bethanechol and metaclopramide as per doctor's advice



- ✓ Avoid foods like caffeine, citrus, tomatoes, peppermint, spicy or fried foods and apple juice.



### COMPLICATIONS:

- Esophagitis, Laryngitis
- Recurrent pneumonia



- Asthma



- Anemia
- Sudden infant death syndrome

### 3.VOMITING:

Vomiting is the forceful expulsion of gastric contents through the mouth.

### ETIOLOGY:

- Faulty feeding technique.



- Introduction of new foods or allergy to certain foods.



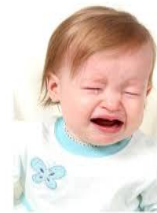
- Toxic ingestions and infections of the intestine.



- Increased intracranial pressure



- Mechanical obstruction of the gastro intestinal tract.
- Emotional factors



### ASSOCIATED SYMPTOMS:

- Fever



- Abdominal pain



- Headache



- Earache



- Weight loss

- Drowsiness



### OTHER FEATURES:

- Excessive salivation
- Sweating



- Dilated pupils.
- Pallor

### MANAGEMENT:

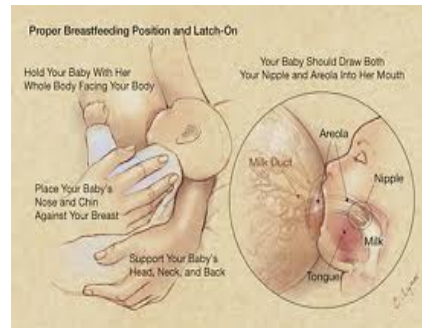
- ✓ Parenteral fluid and electrolyte Therapy



Turning the head to one side



- ✓ Follow correct feeding technique.



- ✓ Provide oral Rehydration solution

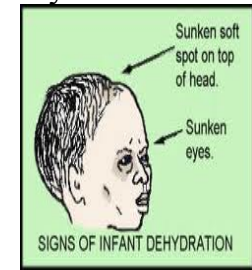


- ✓ Provide small and frequent diet



## COMPLICATIONS:

### ▪ Dehydration



### ▪ Malnutrition



### ▪ Aspiration

## 4) CONSTIPATION:

Prolonged straining and forceful efforts at defaecation resulting in passing hardened stool is called constipation.

### ETIOLOGY:

- Inadequate intake of food or fluids



- Diets that contain too much protein Or fat

- Tight anal sphincter, anal cracks or fissures



- Delayed introduction of solid food.
- Artificial feeding



## SIGNS AND SYMPTOMS:

- ❖ Pain on defaecation
- ❖ Abdominal discomfort and pain



- ❖ Flatulence



- ❖ Loss of appetite





❖ Nausea and vomiting



❖ Disturbed sleep



**MANAGEMENT:**

- Increasing the carbohydrate (sugar or corn syrup)



- Increasing the amount of fluids



Adding cereals, vegetables and Fruits to increase the bulk.



Increase the fibre in diet



**PREVENTION:**

- Provide enough food and fluid intake
- Give sufficient roughage in the diet.
- Treat painful condition at the anus.



**DIARRHEA:**

Diarrhea is the passage of loose, liquid or watery stools more than 3 times per day.

**ETIOLOGY:**

- Faulty composition of infant's formula



➤ Over feeding



➤ Malnutrition



➤ Food allergy and poisoning

➤ prematurity



➤ Lack of personal hygiene



➤ Infections (bacteria, virus, parasites and fungi)



➤ Incorrect or unhygienic infant feeding practices.

**MODE OF TRANSMISSION:**

• Contaminated water



• Contaminated food



• Fingers



• Flies



• Contaminated articles



## SIGNS AND SYMPTOMS:

- ✓ Increased frequency of passing stool



- ✓ Fever



- ✓ Loss of appetite
- ✓ Vomiting
- ✓ behavior changes (irritability, restlessness, weakness and pallor)



- ✓ Signs of derydration( sunken eyes,depressed fontanelles,poor skin turgor,weight loss)



## MANAGEMENT:

- Oral rehydration solution



- Provide food like rice, potatos, wheat, pulses, fruits, vegetables, and rice milk



- Provide small and frequent feeding



- Care of perineal and buttocks skin



## PREVENTION:

- Cleanliness in preparation of food and feeding



- Proper handwashing



- Boiling of feeding vessels



- Use of boiled cooled water for drinking



- Fly control



## COMPLICATIONS:

- Dehydration



- Hypoglycemia



- Convulsions



- Growth retardation



- Hypovolemic shock



**CONCLUSION:**

The health education pamphlet was prepared in the aspects of selected gastro intestinal problems of infants like abdominal colic gastro esophageal reflux, vomiting, constipation, and diarrhea. The knowledge regarding selected gastro intestinal problems of infants will make the mothers to be aware of the problems. It will help the mothers to take care of their infants.

XU taJf;Fs;shd FHe;ijfspd; njh;e;bjLf;fg;gl;I czt[r; brhpkhd gpur;ridfs;  
gw;wpa eyf;fy;tp ifnaL :

mwpKfk;

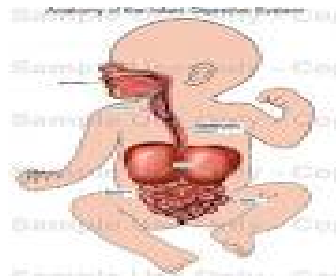
::

**XU taJf;Fs;shd FHe;ijfspd; njh;e;bjLf;fg;gl;l czt[r; brhpkhd  
gpur;ridfs; gw;wpa eyf;fy;tp ifnaL :**

FHe;ijfs; ed;whf tsh;r;rpaila ntz;Lk;. FHe;ijfspd; Mnuhf;fpak;  
kw;Wk; re;njh#khd thH;f;if KiwfSf;F ngh#hf;Fs;s Mfhu|;fs; kpft[k;  
njit. ey;y tsh;r;rpiaa[k; md;iga[k; bgw;w FHe;ijfSf;F Mgj;jhd  
bjhw;W neha;fs; Vw;glf;Toa mghak; Fiwt[. Mdhy; ,d;iwa FHe;ijfs;  
btt;ntW tpjkhd neha;fspdhy; ghjpf;fg;gl;l tUfpd;wdh;/ ,ij ehk; jLf;f  
ntz;Lk;.

**FHe;ijfspd; njh;e;bjLf;fg;gl;l czt[r; brhpkhd gpur;ridfs; :**

- tapw;W jpUFtyp
- ,iug;ig czt[f;FHy; nky; vGjy;
- the;jp
- kyr;rpf;fy; kw;Wk;
- tapw;Wg; nghf;F





### 1. tapw;W jpUFtyp

tapw;W jpUFtyp vd;gJ mjpgkhd mst[ fhw;W cw;gj;jp kw;Wk;  
Ftpjypdhy; jpObud Fly; jirfsy;  
Vw;gLk; ,Gg;g[ typ kw;Wk; tapW tPf;fk;.



### fhuz|;fs; :

- khl;Lg;ghy; xt;thik.



- mjpgkhd fhw;iw tpG|;Fjy;.
- jtwhd Kiwapy; ghy; bfhLj;jy;. (Kf;fpakhf ghy; bfhLf;Fk; epiy kw;Wk; njhy; gl;ilapy; nghl;L jl;of; bfhLf;fhky; ,Uj;jy;).



- mjpgf mst[ czit ntfkhf bfhLj;jy;



- kd mGj;jk;



**mwpFwpfs; :**

- tapw;W typ
- mGjy; (xU ehspy; 3 kzpneuj;jpw;Fk; nky;/ xU thuj;jpy; 3 ehl;fSf;Fk; nky; kw;Wk; 3 thul;fSf;Fk; nky; mGjy;).



- njitf;F Fiwthd czt[ cl;bfhs;Sjy;
- J}f;fkpd;ik



**rpfp;ir Kiwfs; :**

- khl;Lg; ghy; bfhLg;gij jtph;j;jy;
- bte;ePh; xj;jlk;



- Fly; brhpkhd ,af;fj;ij J}z;l btJbtJg;ghd jz;zPiu bfhLj;jy;.
- brnul;ot;!; kw;Wk; typ ePf;Fk;  
(Md;o!;ng!;nkhof;! ;) kUe;Jfis  
kUj;Jthpd; Mnyhridapd; go  
bfhLj;jy;.



**jLf;Fk; Kiwfs; :**

- ✓ mof;fo rpwpa mst[ czit bfhLj;jy;
- ✓ FHe;ijia neuhf epWj;Jjy; kw;Wk; njhy;gl;ilapy; nghl;L  
jl;of; bfhLj;jy;.



- ✓ kdmGj;jj;ij Fiwj;jy;.

**2.,iug;ig czt[ FHy; nky; vGjy; :**

,iug;ig  
czt[f; FHYf;F  
bghUs;fs; ,lk;



czt[f; FHy; nky; vGjy; vd;gJ  
,iug;igapy; cs;s czt[g;  
khw;wk; miljy;.

**fhuz|;fs; :**

- czt[f; FHypd; fPH;gFjp RUf;fj;jirfspd; jhkjkhd tsh;r;rp
- tapw;wpd; mjpfkhd mGj;jk;.

- cly; gUkd;;



- mof;fo mjpfkhd mst[ czitf; bfhLj;jy;



**mwpFwpfs;**

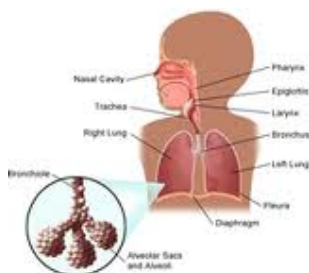
- ❖ the;jp
- ❖ mjpfkhd mGif



- ❖ tsh;r;rp Fd;wpa epiy my;yJ vil ,Hg:g[



❖ mof;foahd Rthr FH; bjhw;W neha;fs;



❖ ,Uk;g[r; rj;J Fiwtpdhy; Vw;gof;Toa ,uj;jr; nrhif.

**rpfpr;ir Kiwfs; :**

✓ neuhd epiyapy; ,Uj;Jjy;



✓ mof;fo rpwpa mst[ czit bfhlj;jy;

✓ bgjdpf;fhy; kw;Wk; bkl;lhFnshg;uikL kUe;Jfis kUj;Jthpd;  
Mnyhridapd; go bfhlj;jy;.



- fhg;gp/ njdPh;/ rpl;u!;/ jf;fhsp/ kpsF/ fhukhd my;yJ vz;bzapy; bghhpj;j czt[fs; kw;Wk; Mg;gps; ghd[;fs; Mfpa czt[ Kiwfis jtph;j;jy;.



**gpd; tpist[fs; :**

- czt[f; FHy; g[z;
- Fuy; tiscg[z;
- mof;foahd fgthjk; (epnkhdpah)



- fhrneha;



- ,uj;jnrhif
- jPObud FHe;ij ,wj;jy;

### 3.the;jp :

the;jp vd;gJ thapd; tHpahf ,iug;igapy; cs;s czt[g; bghUl;fs;  
xU typikahd tpira[lid; btsptUjy;.

### fhuz|;fs; :

- jtwhd czt[ bfhLf;Fk; Kiwfs;



- g[jpa czt[ bfhLj;jy; kw;Wk; czt[  
myh;\$p



- tp#k; rk;ge;jkhd bghUl;fis tpG|;Fjy; kw;Wk; Fly; bjhw;W  
neha;fs;



- fgHyj;jpd; mjpfkhd mGj;jk;



- kdbtGr;rpapd; fhuzpfs;



- czT[r; brhpkhd kz;lyj;jpy; Vw;gLk; jil  
**the;jpa[lD; tuf;Toa mwpFwpfs; :**

- fha;r;ry;



- tapw;W typ





- jiytyp



- fhJ typ



- vil ,Hg;g[
- ke;jk;



**kw;w mwpFwpfs; :**

- ✓ mjpgf mst[ cHpH; ePh;
- ✓ tpah;it



- ✓ tphpthd fz;kzp
- ✓ btsphpa epwk;

rpfp;ir Kiwfs; :

- jput rf;jpia (FSf;nfh!;) brYj;Jy;



- jiyia xUg[wkhf rha;j;J gpoj;jy;



- rhpahd czt[ bfhLf;Fk; Kiwfs filgpoj;jy;



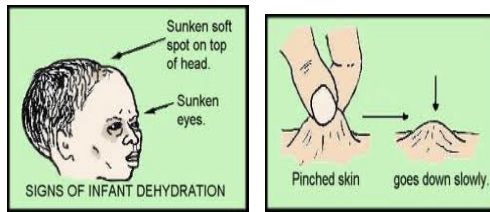
- cg;g[ rh;f;fiu fiuriy bfhLj;jy;



- mof;fo rpwpa mst[ czt[ bfhLj;jy;

**gpd; tpist[fs; :**

- ❖ ePh;rj;J ,Hg;g[



- ❖ Cl;lr;rj;J FiwghL



- ❖ \r;R ,Gj;jy;

**4.kyr;rpf;fy; :**

kyr;rpf;fy; vd;gJ bfl;oahd kyj;ij ePz;l mGj;j tpir kw;Wk;  
typika[lid; f#;lg;gl;L fHpj;jy;.

**fhuzl;fs; :**

- njitf;F Fiwthd czt[(m) jput Mfhuk; bfhLj;jy;



- kpf mjpfkhd g[uj rj;J(m) bfhGg;g[ rj;J epiwe;j cztf[fs;
- ,Wf;fkhd Fjj;jpd; RUf;fj; jirfs; kw;Wk; Fjj;jpd; btog;g[



- ghjp jplepiyapy; cs;s czit fhykhjkhf bfhLf;f Muk;gpj;jy;

- braw;ifahd cztf[fs;



**mwpFwpfs; :**

- ❖ kyk; fHpj;jypd; nghJ typ
- ❖ tapW mbrsfhpak; kw;Wk; tapw;W typ



- ❖ Flypy; tha[ cgj;jpuk;
- ❖ grpapd;ik



- ❖ Fkl;ly; kw;Wk; the;jp



- ❖ J}f;fkpd;ik



**rpfr;ir Kiwfs; :**

- mjpfkhd fhh;nghiQl;nul;;  
(rh;f;fiu my;yJ etjhdpa jputk;)



- jz;zPh; kw;Wk; jput Mfhuk ;cl;bffhs;Sjiy mjpffhpj;jy;



- jhdpa|;fs;/ fha;fwpfs; kw;Wk; gH|;fis bfhLj;jy;



- mjpfkhd ehh;r; rj;J cs;s czt[fs;



**jLf;Fk; Kiwfs; :**

- njitahd mst[ jz;zPh;/ jput Mfhuk; kw;Wk; czit bfhLj;jy;
- nghJKhd mst[ eh;h;r;rj;J cs;s czitf; bfhLj;jy;
- Fjj;jpd; typf;F rpfpr;ir mspj;jy;

**5.tapw;Wg; nghf;F :**

tapw;Wg;nghf;F vd;gJ xUehspy; ePh;g; nghd;w kyj;ij \d;W  
KiwfSf;Fk; nky; fHpj;jy;.

**fhuz|;fs; :**

- FHe;ijfspd; czit[ Tl;Lk; Kiwfspy; jtW



- kpf mjpfkhd mst[ czit[



- Cl;lr; rj;J FiwghL



- KG tsh;r;r;pailahj FHe;ij



- czt[ xt;thik kw;Wk; tp#k;
- cly; Rfhjhukpd;ik



- bjhw;W neha;fs; (ghf;Ohpah/ itu!;/ nguirl;!;/ kw;Wk; fhshd;)



- jtwhd my;yJ Rj;jkpy;yhj czt[ bfhLf;Fk; gHf;f;fs;

**gut[k; tHpfs; :**

- mRj;jkhd jz;zPh;





- mRj;jkhd czt[



- mRj;jkhd tpuy;fs;



- <f;fs;



- mRj;jkhd bghUI;fs;



**mwpFwpfs; :**

- ✓ kpf mof;fo kyk; fHpj;jy;



- ✓ fha;r;ry;



- ✓ grpapd;ik
- ✓ the;jp
- ✓ elj;ij khw;w|;fs; (Xa;tpd;ik/ gyQPdk; kw;Wk; btsphpa epwk;)



- ✓ ePh;r;rj;J ,Hg;gpd; mwpFwpfs; (FHptpGe;j fz;/

gs;skhd cr;rp/ njhy; twl;rp/ vil ,Hg;g[]



**rpfr;ir Kiwfs;**

- cg;g[ rh;f;fiu fiury;



- mhprp/ cUisf;fpH|;F/ nfhJik/ gUg;g[ tiffs;/ gH|;fs;/fha;fwpfs;  
kw;Wk; mhprpf;fZ;rp Mfpa czt[fis bfhLf;fyhk;.



- mof;fo rpwpa mst[ czt[ bfhLj;jy;



- kyk; fHpj;jgpd;/ me;j ,l|;fis ed;whf Rj;jk; bra;jy;



**jLf;Fk; Kiwfs; :**

- Rj;jkhd Kiwfs;py; czt[ rikj;jy; kw;Wk; czt[ bfhlj;jy;



- iffis ed;whf fGt[jy;



- czt[ bfhlj;Fk; ghj;jpu|;fis bfhjpf;f itf;f ntz;Lk;



- bfhjpf;f itj;j jz;zPiu Mwitj;J Foj;jy;



- bfhRitf; fl;Lg;gLj;Jjy;



**gpd; tpist[fs; :**

- ePh;r;r;J ,Hg;g[



- Fd;wpa tsh;r;rp



- ,uj;jj;ppy; rh;f;fiu mstpd; FiwghL



- typg;g[



➤ jpOh; epiy Fiyt[



**Kot[iu :**

FHe;ijfspd; njh;e;bjLf;fg;gl;l czt[r; brhpkhd gpur;rpidsfd  
tapw;W jpUFtyp/ ,iug;ig czt[f; FHy; gpd; vGjy;/ the;jp/ kyr;rpf;fy;  
kw;Wk; tapw;Wg; nghf;if gw;wp eyf;fy;tp ifnaL jahhpf;fg;gl;Ls;sJ.  
,e;j tpjkhd gpur;rpidsfg; gw;wp jha;khh;f;fSf;fpilna xU tpHpg;g[zh;it  
Vw;gLj;Jk; tifapy; ,e;j eyf;fy;tp ifnaL cUthf;fg;gl;Ls;sJ/ ,J jha;khh;fs;  
j|;fs; FHe;ijfisr; rhpahf ftdpf;f xU tHpfhl;oahf ,Uf;Fk;.