"A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING MILK PROTEIN INTOLERANCE AMONG MOTHERS OF TOP FED BABIES 1-3 YEARS IN A SELECTED HOSPITAL, MADHUGIRI"

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Master of Science in Nursing

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ABSTRACT

Background and Objectives

Children represent the future, and ensuring their healthy growth and development ought to be a prime concern of all societies. An infant or baby is the very young of humans. A study was conducted To Assess The Effectiveness Of Structured Teaching Programme On Knowledge

Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri.

The objectives of the study were:

1. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years before structured teaching programme.
2. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years after structured teaching programme.
3. To evaluate the effectiveness of structured teaching programme.
4. To determine the association of between knowledge on milk protein intolerance among mothers of top fed babies 1-3 years and selected variables.

Place: **Hubli** **Mrs. Padmashree S.Murgod.**

Methods

Quasi experimental single group pretest and post test design with evaluative approach was used. Study was carried out in Government hospital, Tumkur, using Simple random sampling. 60 Mothers Of Top Fed Babies 1-3 Years were selected as samples. Data was collected by a Structured questionnaire schedule, which includes demographic data, and 30 items related Mothers Of Top Fed Babies 1-3 Years, General information (4), Milk protein intolerance (2), Causes (3), Signs and symptoms (8), Complications (2), Prevention and management (11). STP was conducted after assessing the pre-test**.** A post test was conducted after 7 days with same tool.

Results

Findings reveal that the most of the subjects 43.3 %(26) were 21-23 yrs old. 17(28.4%) were completed primary school education, 34(56.7%) of them were from

nuclear family, 22(36.7%) were earning Rs.6001-9000/- and 23(38.3%) were getting information from Friends and relatives.

Pre test revealed that Mothers Of Top Fed Babies 1-3 Years are having low level of knowledge with a mean score of 17.56 out of 30. After giving STP post test score increased to 90% (P<O.OOO1), which shows the effectiveness of STP. It has been found that variables like age, Educational status, Type of family, Income of family and source of information shows no significant association with pre test knowledge level.

Interpretation and conclusion

As the mean post test score is significantly higher than that of the pre-test it is evident that the knowledge of Mothers Of Top Fed Babies 1-3 Years was improved after the educational intervention. The tool developed can be used to identify individuals in need of educational intervention as well as to assess the effectiveness of Milk Protein Intolerance. Implications of various aspects of nursing care addressed and recommendations for the future research are discussed.

Key words

Milk Protein Intolerance**,** Structured teaching programme, Mothers Of Top Fed Babies 1-3 Years.

LIST OF ABBREVIATIONS USED

1. WHO World health organization
2. STP Structured Teaching Programme
3. SD Standard deviation
4. df degree of freedom
5. χ^2 Chi-Square

6. ≤ Less than or equal to
7. > Greater than
8. i,e. That is

INTRODUCTION

Breast feeding is a mother gift to herself, are babies and earth.

Pamelak, wiggins

Milk is a white liquid produced by the mammary glands of mammals. It is the primary source of nutrition for young mammals before they are able to digest other types of food. Early-lactation milk contains colostrum, which carries the mother's antibodies to the baby and can reduce the risk of many diseases in the baby.[1]

Milk is an important food for over 6 billion human beings of all ages, majority of them in developing countries. Over 750 million people live within dairy farming households. World's dairy farms produced over 710 million tons of milk in 2010. India is the world's largest producer and consumer of milk, yet neither exports nor imports milk.[1]

In almost all mammals, milk is fed to infants through breastfeeding, either directly or by expressing the milk to be stored and consumed later. Some cultures, historically or currently, continue to use breast milk to feed their children until they are seven years old.[1]

Breast feeding is the gold standard for milk feeding in infant nutrition and is recommended exclusively for the first 4 months of life at least. Human infants sometimes are fed fresh goat milk, cow milk etc. There are known risks in this practice, including those of developing electrolyte imbalances, metabolic acidosis, megaloblastic anemia, and a host of allergic reactions. [1]

The first is true milk allergy, which involves an abnormal antibody to the proteins in milk that triggers urticaria (hives) or respiratory symptoms in the child. This allergy ranges from mild to quite severe. The levels in the bloodstream of abnormal antibody are fairly predictive of the

severity of allergy - the more antibodies, the worse the symptoms. About one in 25 children has some degree of this allergy, but severely allergic children are luckily rare.[2]

Milk protein allergy is a recognized problem in the first year of life; cow's milk protein allergy is the most common such allergy. Diagnosis is suspected on history alone, with laboratory evaluations playing a supporting role. Confirmation requires elimination and reintroduction of the suspected allergen. Management includes diet modification for nursing mothers and hydrolyzed formulas for formula-fed infants.[3]

Milk protein allergy (MPA) is a recognized problem in infancy and might affect up to 15% of infants.[3]

Adverse reactions to cow's milk are frequent in the first year of life. The symptoms may start during the first weeks of life and may be cutaneous (50–60%), gastrointestinal (50–60%) or respiratory (20–30%), often with symptoms in more than one organ system. The reported frequency of cow's milk allergy (CMA) in the first year of life is between 2 and 7%. It is well known that most children outgrow their adverse reactions to cow's milk during the first year of life. According to a 2002 review that was based on 229 PUBMED articles, the frequency of tolerance at 1 year was 45–50% and at 2 years of age was 60–75%. The diagnosis was made on the background of reproducible adverse reactions to cow's milk proteins, confirmed by controlled elimination/challenge tests.[3]

More than 50 million Americans are lactose intolerant. Nearly two-thirds of the world's adult population has some degree of difficulty with digestion of milk sugar because of a lactase deficiency, 97-100% of African Blacks, 90-100% of Asians, 70-75% of North American Blacks, 70-80% of Mexicans, 60-90% of Mediterraneans, 60-80% of Jewish descent, 10-12% of Middle Europeans, 7-15% of North American Caucasians, 1-5% of Northern Europeans.[4]

It is estimated that up to 75% of the world's population is lactose intolerant to some extent. Generally this is not a well-known statistic but well referenced by clinical studies beginning almost forty years ago in the Johns Hopkins University US.[5]

This not really surprising when we remember that Humans are the only mammals on earth to continue to drink milk after weaning at ~2 years of age. People of developed Western nations consume vast quantities of milk in products like yogurt, cheese and ice cream, and in processed foods.[5]

Lactose Intolerance is a person's inability to digest Lactose, the sugar found in milk, which is broken down by an enzyme called lactase. In all mammals including Humans the production of lactase stops after weaning. There are some humans - generally of Northern European descent who continue to produce lactase after weaning. This minority is known as 'lactase persistent'.[5]

Lactose Intolerance increases with age. So for many people alternating bouts of nausea, diarrhea and constipation has become an everyday thing. But it's not normal and can lead to serious health risks. Left untreated, problems with malabsorption (like iron deficiency or chronic dehydration) can arise. Further neglect can lead to anemia and even osteoporosis. It must be investigated.[5]

NEED FOR THE STUDY

There is little doubt that mother's milk is the best food for infants. Human milk offers an ideal balance for nutrients and also contains a rich supply of protective factors which the human infant requires. Cow's milk is dissimilar to human milk in all respects. Although commercially prepared formulas made from cow's milk or soy beans, have progressed over the years toward a more human composition by significant processing of the milk and addition of nutrients theses formulas remain inferior to human milk. Both cow's milk and soy milk have health risk attached. Many argue that only a small percentage of infants become ill on theses formula. [6]

Among the benefits of mother's milk is a generous supply of IgA, the protective antibody which the infant from bacterial infection and probably reduces the entry of antigenic food

fragments, reducing the incidence of food allergy. Breast feeding an infant for 6 months or longer appears to significantly reduce the incidence of infection and food allergy. [6]

One problem with mother's milk is that it may contain allergens which the mother has absorbed intact. Allergens derived from cow's milk may appear in the mother's milk and sensitize her child. The circuit of milk proteins through a mother's body, through the breast into the milk, into the infants GIT, and to the infant's body is a remarkable biological fact. This free passage of food proteins through many body filters and defense systems demonstrates how porous we are to macromolecules. [6]

Since food allergens from the mother's diet may appear in her breast milk the lactating mother may have to modify her diet to protect her infant. Her restrictions may include the avoidance of milk products and other highly allergic foods like eggs, peanuts, citrus fruits, chocolates, nuts and sometimes, cereal grains, certain meats and fish. Breast feeding mothers should avoid ingesting food and beverages with drug like or toxic properties-alcoholic beverages, tea, coffee, chocolate, herbs and spices. Breast feeding and smoking do not go together infant sensitization in utero and with breast feeding is not a simple matter however and even the most conscientious maternal avoidances will not assure complete protection against infant food allergy.[6]

Cow's milk protein allergy (CMPA) appears to be the most common MPA, with controlled challenge trials demonstrating an incidence of 2% to 5% among formulafed infants (level I evidence). The incidence in breastfed infants is 0.4% to 0.5% according to 2 trials (level I evidence), but might be as high as 2.1% (level II evidence). Determining the incidence of allergy to milk proteins from other sources is complicated by the widespread use of bovine milk. A population-based cohort study found the incidence of soy allergy to be 0.25% (level II evidence).[5] Among high-risk infants, CMPA appears to outweigh soy milk protein allergy (SMPA) by a factor of 6 to 1 (level I evidence). A study by Klemola et al found the incidence of SMPA to be 10% among children with CMPA. Interestingly, qualitative observation alone

suggested cross-reactivity as high as 30%, but only a 10% rate was observed using rigorous quantitative measures.[7]

Recent evidence indicates that up to 75% of the world's population is Lactose Intolerant to some extent. That is, three quarters (¾) of all people have difficulty digesting lactose. A very few people (less than 3%) are allergic to Casein (the protein found in milk). This is usually detected in babies but can be undiagnosed till later.[2]

Significant changes in our knowledge and approach toward lactose intolerance have occurred over the past quarter century, since the first statement on lactose intolerance was published by the American Academy of Pediatrics Committee on Nutrition.[1] Lactose ingestion in certain susceptible individuals can causeabdominal symptoms that are variable and can be treated with dietary restriction or enzyme replacement, depending on the amount of lactose consumed and the degree of lactase deficiency. Pediatricians and other pediatric care providers should maintain awareness of the benefits and controversies related to the consumption of dietary milk products and milk-based infant formula. The lactose content of milk often influences, correctly or not, the ultimate decision about the use or continuation of milk in the diet. Milk and dairy-product avoidance has a negative effect on calcium and vitamin D intake in infants, children, and adolescents. Other nutrients such as protein make dairy products an important source of nutrition for growing children.[8]

The final category of milk intolerance is factitious[1]. The human mind seems to grasp for easy answers to every problem. In the newborn period, normal post-delivery spitting and vomiting which have nothing at all to do with the type of formula used are sometimes erroneously labelled as "formula intolerance" or "milk allergy." Soy formula is substituted for cow milk formula, and presto! the baby does better. The fact is that babies' digestive tracts are often a bit squeamish after the stressful experience of delivery, and a little vomiting will occur regardless of the formula offered. This type of spitting is transient and temporary; there is no need to change formula as the first response. But the formula is switched, the baby seems to

improve, and the parents and doctor are convinced it was the formula change that caused improvement.[2]

Individualization is required to determine when supplementation with formula or solid foods is appropriate. One approach is to compare human milk production with recommended dietary allowances. Recommended daily allowances estimate nutrition requirements based on metabolic balance studies to which a generous safety margin has been added. They may overestimate actual needs. These recommendations do not take into account individual variability and the infant's ability to adjust physiologic efficiency to food availability.[9]

OBJECTIVES

This chapter consists of statement of the problem, objectives, operational definitions and theoretical framework selected for the study.

Statement of the problem

"A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"

Objectives of the Study

1. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years before structured teaching programme.

2. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years after structured teaching programme.

3. To evaluate the effectiveness of structured teaching programme.

4. To determine the association of between knowledge on milk protein intolerance among mothers of top fed babies 1-3 years and selected variables.

Operational Definitions

1. Structured teaching programme on milk protein intolerance: It refers to the organized method of providing information related to various aspects of milk protein intolerance, introduction, meaning, risk factors, causes, signs and symptoms, and its prevention by lecture cum discussion method with the help of flash cards and charts.

2. Effectiveness: It means the extent to which the structured teaching programme on milk protein intolerance has achieved the desire results as expressed in terms of scores of knowledge as assessed by the questionnaire.

3. Milk protein intolerance: It refers to the pathologic condition in which baby having inability to digest milk protein.

4. Mothers of top fed babies 1-3 years: It refers to the women having 1-3 year old babies meeting the nutritional need with the help of milk.

Hypothesis

H1: There will be a significant difference between pretest and post test knowledge scores.

H2: There will be significant association between pretest knowledge scores and selected demographic variables.

Variables

1. Dependent variable- knowledge on Milk protein intolerance among mothers of top fed babies 1-3 years.

2. Independent variable- Structured Teaching Programme.

Conceptual Framework

The present study aims at developing and evaluating structured teaching programme regarding Milk Protein Intolerance.

The conceptual model for the study was based on the general system theory by Ludwig Von Bertanlanffy (1968). In this theory the main focus is on the discrete parts and their interrelationship, which consist of input, throughput and output.

'System' has a complex interaction, which means that systems consist of two or more converted elements, which form an organized whole and which interact with each other.

According to theory 'input' are the energy and raw material transformed by system. Eg., Information, time, individual efforts.

In this study input includes:

- Structured questionnaire.
- Demographic data of mothers of top fed babies 1-3 years.
- Pre-test knowledge regarding Milk Protein Intolerance.

According Ludwig Von Bertanlanffy, 'throughput' refers to the process by which the system posses input and release an output. In this study the throughput considered for processing the input are;

- Blue print.
- Draft.
- To develop and administration of a structured teaching programme regarding Milk Protein Intolerance.
- Administration of post-test by using the same structured questionnaire used for the pre-test, to assess the effectiveness of structured teaching programme on Milk Protein Intolerance.

According to systems theory 'output' refers to energy, matter and information that leave a system. In the present study "output" is considered to be the gain in knowledge obtained through the processing of the post-test. It will be received in the form of difference between pre test and post test knowledge scores.

Effectiveness of structured teaching programme (Gain in the knowledge based on comparison between pre test and post test scores)

According to systems theory "feed back" refers to output that is returned to the system that allows it to monitor itself overtime in an attempt to move closer to a steady state known as equilibrium or homeostasis. Feedback may be positive, negative or neutral.

For the present study 'feed back' is related to the effectiveness of structured teaching programme and will be obtained by testing of hypotheses.

- Impact between pre-test and post-test knowledge scores.
- Association between the pre-test and post-test knowledge scores and the selected demographic variables

According to Ludwig Von Bertanlanffy the system acts as a whole. Dysfunction of a part causes system disturbances, rather than loss of a single function. Whole system can be resolved into an aggregation of feedback circuits such as input, throughput and output. The feedback circuits help in the maintenance and improvement of an intact system.

In this study, effectiveness of structured teaching programme is assessed by inter related elements such as input, throughput and output. From the feed back mechanism of the model the effectiveness of structured teaching programme on Milk Protein Intolerance will be assessed. (Figure 1).

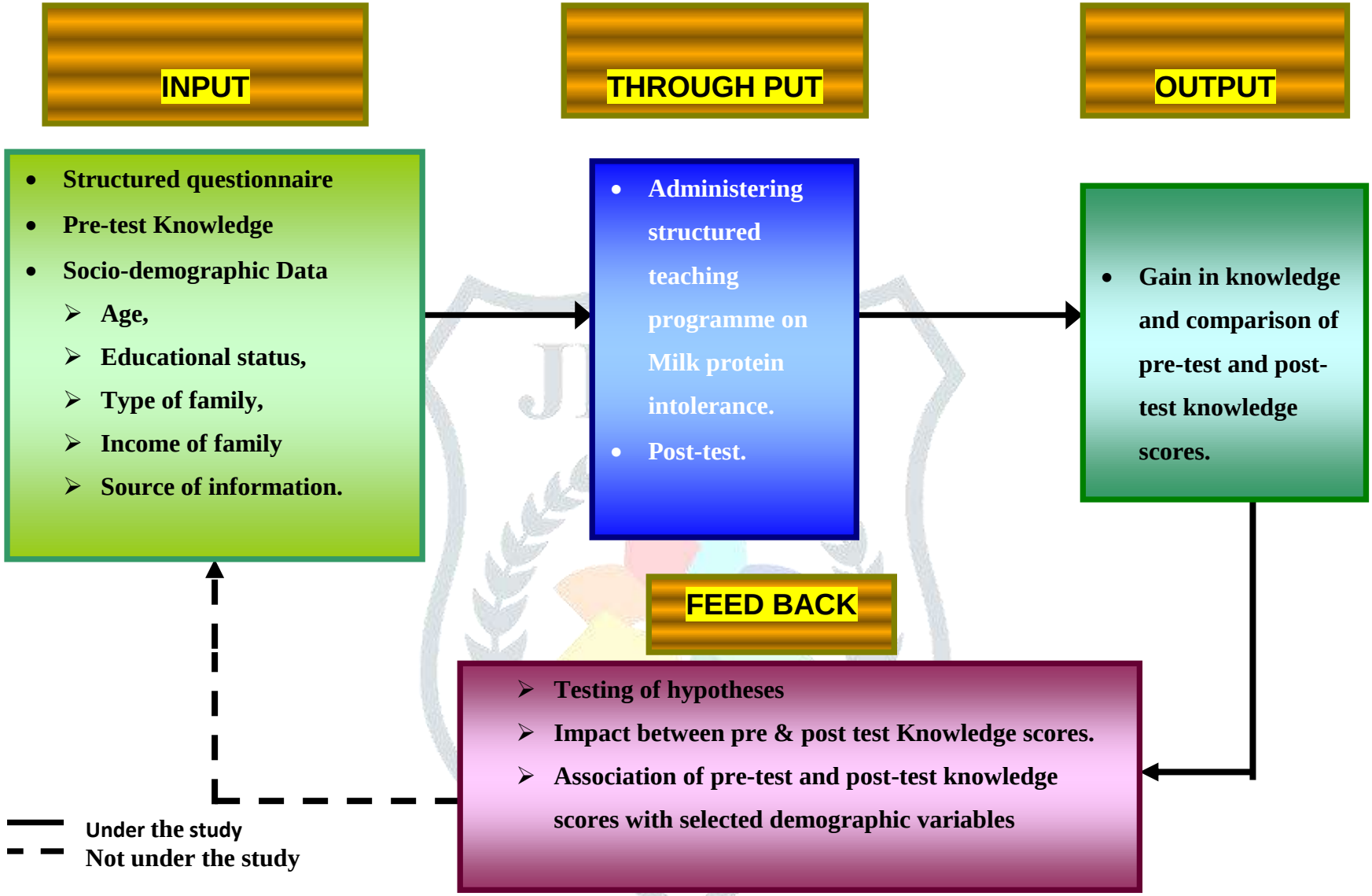


Figure 1: Conceptual Frame Work Based on General System Model by Ludwig Von Bertanlanffy (1968)

REVIEW OF LITERATURE

According to polit and beck[10], review of literature is a written summary of the state of existing knowledge on a research problem.

Reviewing relevant literature is to gain a broad background or understanding of the information that is available related to a problem. Review investigated at the beginning of the research process will continue throughout the development of the research proposal, collection and analysis of data and interpretation of findings.

According to Treece and Treece[11] nursing research may be considered as a continuous process in which knowledge gains from earlier studies are an integral part.

Reviewing and evaluating the literature is central to the research process.

The review of literature related to present study has been organized in two sections,

1. Literature related milk protein allergy intolerance.
2. Literature related prevalence of milk protein allergy intolerance.
3. Literature related to prevention and management of milk protein allergy intolerance.

1. **Literature related milk protein allergy intolerance:**

A study was conducted with an objective to determine lactose intolerance (LI) prevalence, bone health after dairy-exclusion diets, tolerable dose of lactose in subjects with diagnosed LI, and management. They extracted patient and study characteristics using author's definitions of LI and lactose malabsorption. They compared outcomes in relation to diagnostic tests, including lactose challenge, intestinal biopsies of lactase enzyme levels, genetic tests, and symptoms. Fractures, bone mineral content (BMC) and bone mineral density (BMD) were compared in categories of lactose intake. Results was prevalence was reported in 54 primarily nonpopulation based studies (15 from the United States). Studies did not directly assess LI and subjects were highly selected. LI magnitude was very low in children and remained low into adulthood among individuals of Northern European descent. Low level evidence from 55 observational studies of 223,336 subjects indicated that low milk consumers may have increased fracture risk. Strength and significance

varied depended on exposure definitions. They found insufficient evidence that use of lactose reduced solution/milk, with lactose content of 0-2 grams, compared to a lactose dose of greater than 12 grams, reduced symptoms of lactose intolerance. Conclusion was there are race and age differences in LI prevalence. Evidence is insufficient to accurately assess U.S. population prevalence of LI. Children with low lactose intake may have beneficial bone outcomes from dairy interventions. There was evidence that most individuals with presumed LI or LM can tolerate 12-15 grams of lactose (approximately 1 cup of milk). There was insufficient evidence regarding effectiveness for all evaluated agents. Additional research is needed to determine LI treatment effectiveness.[12]

A study was done with a aim to study the age when symptoms of adverse reactions to milk occur, in premature and term children, the debut of various symptoms, immunoglobulin E (IgE)- and non-IgE-mediated reactions and the frequency of tolerance at 1 year. Six hundred and eight children, 193 premature and 416 term infants, were followed. Result was twenty-seven out of 555 (4.9%) were diagnosed with adverse reactions to cow's milk. All had symptoms before 6 months of age. The main symptoms were: pain behaviour (13), gastrointestinal symptoms (7), respiratory symptoms, (6) and atopic dermatitis (1). One child had proven IgE to cow's milk. Premature and term infants displayed the same symptoms and age of debut. Thirteen children were tolerant to cow's milk at 1 year. Finally conclusion was Adverse reactions to milk start early in life, with pain behaviour, gastrointestinal, and respiratory symptoms being the most common, and rarely atopic dermatitis. Non-IgE-mediated reactions were the most frequent. Symptoms and age of debut were the same in premature and term infants. Half of the children tolerated cow's milk at age.[13]

A study was conducted to evaluate clinical response after challenge testing in infants with allergy to cow's milk proteins at diagnosis and again when these infants were aged 1 year old and had been fed an exclusion diet. They performed a prospective study of 49 infants aged less than 6 months with a clinical history suggestive of cow's milk protein allergy, positive skin prick test and specific IgE for alpha-lactalbumin, beta-lactoglobulin and casein. In results at diagnosis, challenge tests produced immediate hypersensitivity reactions in 94% of infants. Late reactivity (i.e., more than 2 hours after challenge) was found in only 6% of infants, all of whom presented dyspepsia. When the infants were aged 1 year, and after results of immunological study were negative, a

further challenge test was performed in 24 (49%) of lactating infants included in the study. Of these 24 infants, positive challenge was found in 5 (21%). None of the infants presented immediate symptomatology (clinical features appeared 7 days after the reintroduction of cow's milk proteins). At last conclusion was ninety-four percent of challenge tests performed at diagnosis provoked immediate reactions. The results of challenge tests after a negative skin prick test in children with normal concentrations of specific IgE were positive in 21% infants, who presented late reactivity (a mean of 7 days after milk ingestion).[14]

A study was done with a primary objective to discuss the clinical features, diagnosis, natural history, and prognosis of cow's milk allergy in early childhood and its relationship to development of inhalant allergies. A review of 229 PubMed (National Library of Medicine) articles on cow's milk allergy (CMPA) for the years 1967 through 2001 was performed. The result was The incidence of CMPA in infancy seems to be approximately 2 to 3% in developed countries. Symptoms suggestive of CMPA may be encountered in approximately 5 to 15% of infants emphasizing the importance of controlled elimination/milk challenge procedures. Reproducible clinical reactions to CMP in human milk have been reported in approximately 0.5% of breastfed infants. Most infants with CMPA develop symptoms before 1 month of age, often within 1 week after introduction of CMP-based formula. The majority has two or more symptoms from two or more organ systems. Approximately 50 to 60% have cutaneous symptoms, 50 to 60% have gastrointestinal symptoms, and approximately 20 to 30% respiratory symptoms. Symptoms may occur within 1 hour after milk intake (immediate reactions) or after 1 hour (late reactions). The prognosis of CMPA is good with a remission rate of approximately 45 to 50% at 1 year, 60 to 75% at 2 years, and 85 to 90% at 3 years. Associated adverse reactions to other foods develop in up to 50% and allergy against inhalants in 50 to 80% before puberty. Finally conclusion was CMPA is the most common food allergy in early childhood with an incidence of 2 to 3% in the first year of life. The overall prognosis of CMPA in infancy is good with a remission rate of approximately 85 to 90%. In particular, gastrointestinal symptoms show a good prognosis. An early increased immunoglobulin E-response to CMP is associated with an increased risk of

persistent allergy to CMP, development of adverse reactions to other foods, and development of asthma and rhinoconjunctivitis later in childhood.[15]

A study was examined whether maternal background and perinatal factors were associated with the risk of cow's milk allergy (CMA) in infants up to 2 years of age in a nested case-control study. All children born in 1996–2004 in Finland and diagnosed with CMA by 2006 were identified (*n* = 16,237). For each case, one matched control was selected. Information on maternal and perinatal factors was derived from the Medical Birth Register. The associations were analyzed by conditional logistic regression. Cesarean section 1.18, 95% confidence interval and high maternal age were associated with increased risk, whereas low maternal socioeconomic status smoking , high number of previous deliveries, and multiple pregnancy were associated with decreased risk of CMA. In conclusion, maternal background and perinatal factors may play a role in the development of CMA, but further research is needed to clarify these associations and the underpinning biologic mechanisms.[16]

A study was done with an objective to assess the role of the fat content of milk on symptoms of lactose intolerance. The subjects were thirty adult volunteers, patients of two Estonian out-patient clinics with diagnosed lactose intolerance. The study milks were drunk at home or at work. All thirty subjects completed the study protocol. Each subject drank, in random order, fat-free milk (4.9% lactose), high-fat milk (8% fat, 4.9% lactose), and a lactose-free and fat-free control milk. They drank 200 ml of the milk twice a day for two days, one milk type per session, with five days between sessions. The subjects noted their gastrointestinal symptoms during the test periods and during a 5 d milk-free period at the beginning of the study. The occurrence and severity of symptoms were compared. Result was the sum of symptoms was higher during all milk periods than during the milk-free period ($P < 0.01$). There were no statistically significant differences in the occurrence or severity of symptoms during the fat-free milk period compared with the high-fat milk period. Finally conclusion was even a marked difference in the fat content of milk did not affect the symptoms of lactose intolerance. Consequently, there seems to be no case for recommending full-fat milk products in the treatment of lactose intolerance.[17]

A study was conducted on Lactose intolerance among severely malnourished children with diarrhoea admitted to the nutrition unit, Mulago hospital, Uganda. A descriptive cross sectional study involving 196 severely malnourished children with diarrhoea aged 3-60 months was done in Mwanamugimu Nutrition Unit (MNU), Mulago hospital between October 2006 and February 2007. During the study period, 196 severely malnourished children with diarrhoea were recruited, 50 (25.5%) of whom had evidence of lactose intolerance and stool pH < 5.5) and it occurred more commonly in children with kwashiorkor 27/75 (36.0%) than marasmic-kwashiorkor 6/25 (24.0%) and marasmus 17/96 (17.7%). Oedematous malnutrition (p = 0.032), perianal skin erosion , high mean stool frequency and having >or=2 diarrhoea episodes in the previous 3 months were the independent predictors of lactose intolerance. Other factors that were significantly associated with lactose intolerance on bi-variate analysis included: young age of 3-12 months; lack of up to-date immunization; persistent diarrhoea; vomiting; dehydration, and abdominal distension. Exclusive breastfeeding for less than 4 months and worsening of diarrhoea on initiation of therapeutic milk were the other factors. The conclsion The prevalence of lactose intolerance in this study setting of 25.5% is relatively high. Routine screening by stool pH and reducing substances should be performed especially in the severely malnourished children with diarrhoea presenting with oedematous malnutrition, perianal skin erosion, higher mean stool frequency and having had >or=2 diarrhoea episodes in the previous 3 months. Use of lactose-free diets such as yoghurt should be considered for children found to have evidence of lactose intolerance and whose response on standard therapeutic milk formula is poor.[18]

A study was conducted on A prospective study of cow's milk protein intolerance in Swedish infants. 1 079 of 1 548 newborn infants were followed during their first year. 328 were prospectively contacted once a month. 751 were followed up at child welfare clinics. Altogether 20 were diagnosed as being cow's milk protein intolerant (1.9%). Symptoms from the gastrointestinal tract and the skin predominated. Only 2 had respiratory symptoms. Ten had their symptoms within one week after the introduction of cow's milk, 3 of them at their first cow's milk-containing meal. A further 4 already had symptoms when fed only human milk. The others (6 infants) showed symptoms after more than one week on a cow's milk containing diet. Before 2 years of age, 13 had recovered. Twelve of the cow's milk protein intolerant infants also showed

adverse reactions to other foods, soy-protein intolerance being the most common (7 infants). A family history of allergy was found in 35% (116) of the 328 infants and in 70% (14) of those with cow's milk protein intolerance.[19]

A study was conducted with an goal Milk-based formulas can induce cow's milk protein allergy (CMPA) in infants. Case one: A 7 day old boy developed diarrhea with no improvement despite several courses of antibiotic and switching to formula without lactose. At 2 months of age he had a hemoglobin 8.6 mg/dL, IgE = 17.8 IU/ml (normal <1.5 UI/ml) and a CD4/CD8 ratio = 0.16 (normal 1.5 – 2.5). Upper endoscopy biopsies showed duodenal atrophy. He received a casein hydrolysate formula with decreased fecal flow but continued diarrhea. At 3 months of life he was changed to an amino acid formula with cessation of diarrhea in < 48 hours, resumption of normal growth and normalization of duodenal histology. Case N°2: A 10 month old boy had a 6-day history of vomiting, diarrhea and edema. His albumin was 2.35 mg/dL. An upper endoscopy biopsy showed severe duodenal atrophy. He received a casein hydrolysate with good tolerance and resolution of the edema. At 26 months of age, and endoscopic duodenal biopsy showed regeneration of the mucosa. Final Conclusion Was The CMPA is a frequent diagnosis in young infants that can be confused with infection.[20]

2. **Literature related to prevalence of milk protein allergy intolerance:**

A study was conducted to evaluate: a) the prevalence of lactose maldigestion and lactose intolerance in a sample of the general population taken from a rural center; b) the frequency of self-reported milk-intolerance and its correlation with lactose-maldigestion; c) the influence of lactose maldigestion, lactose intolerance and self-reported milk intolerance on dietary habits and consumption of total calories, protein, and calcium. They studied a randomized sample of the general population in a small center in Sicily. 323 subjects (150 males, 173 females), age range 5 to 85 years (median 44) were included and underwent H2-breath test after 25 g lactose load. Result was 104/323 subjects (32.2%) were lactose maldigesters but tolerants, while 13/323 (4%) were lactose maldigesters and intolerants. 49/323 subjects were self-reported milk-intolerants; of these, 26 (53%) were lactose maldigesters but tolerants, 18 (37%)

were lactose digesters and tolerants and only 5 (10%) were lactose maldigesters and intolerants. In the whole group of self-reported milk-intolerants, dietary milk consumption was significantly reduced and calcium intake was lower than in all the other subjects studied (320 mg/day vs. 585 mg/day, $p<0.05$).At the end study concludes in studies of the general population, the frequency of lactose intolerance is much lower than that of lactose maldigestion. Gastrointestinal symptoms after lactose load in self-reported milk-intolerants are found inonly a very low number of these subjects. Furthermore, in these subjects we observed an unnecessary reduction in milk consumption and an insufficient dietary calcium intake. [21]

A study was conducted on the incidence of cow's milk protein allergy and intolerance (CMPA/CMPI) in infancy in western industrialized countries has been estimated to be about 2-3% based on strict diagnostic criteria. The findings of specific IgE to individual cow's milk proteins in cord blood of the majority of infants who later develop CMPA/CMPI suggests a prenatal sensitization may play a role in the pathogenesis of CMPA/CMPI. Perhaps a weak intrauterine education of low IgE-response may need to 'boosted' neonatally in order to cause clinical disease. The prognosis of CMPA/CMPI is good with a recovery of about 45-56% at one year, 60-77% at two years and 71-87% at three years. Associated adverse reactions to other foods, especially egg, soy, peanut and citrus develop in about 41-54%. Allergy to potential environmental inhalant allergens has been reported in up to 28% by three years and up to 80% before the age of puberty. Especially, infants with an early increased IgE response to cow's milk protein have an increased risk of persisting CMPA, development of persistent adverse reactions to other foods and development of allergy against environmental inhalant allergens. The conclusion was Cow's milk protein/intolerance (CMPA/CMPI), meaning reproducible adverse reactions to cow's milk protein(s) may be due to the interaction between one or more milk proteins and one or more immune mechanisms, possible any of the four basic types of hypersensitivity reactions. Immunologically mediated reactions are defined as CMPA. Mostly, CMPA is caused by IgE-mediated (type I) reactions, but evidence for type III (immune complex) reactions and type IV (cell mediated reactions) have been demonstrated as reviewed by Høst (1994) and Ortolani & Vighi (1995). Non immunologically reactions against cow's milk protein(s) are defined as CMPI.

However, it should be stressed that many studies on 'cow's milk allergy' have not investigated the immunological basis of the clinical reactions.[22]

A study was done with an objective to promote the appropriate differential use of the terms CMA and CMI. Highlighting the differences in clinical and laboratory findings between CMA and CMI. Information was derived from reviewing the literature on these two topics, supplemented by the clinical experience of the author. Result was CMA is an immunologically mediated reaction to cow's milk proteins that may involve the gastro-intestinal tract, skin, respiratory tract, or multiple systems, ie, systemic anaphylaxis. Its prevalence in the general population is probably 1 to 3%, being highest in infants and lowest in adults. Even though it can cause severe morbidity and even fatality, dietary elimination is associated with good prognosis. However, CMI should refer to nonimmunologic reactions to cow's milk (CM), such as disorders of digestion, absorption, or metabolism of certain CM components. The most common cause of CMI is lactase deficiency, which is mostly acquired during late childhood or adulthood. It has high racial predilection, being highest in dark-skinned populations and lowest in northern Europeans. Lactose intolerance is generally a benign condition, with symptoms limited to the gastro-intestinal tract, yet the primary acquired type lasts for a lifetime. Symptoms can be well ameliorated by reducing the intake of CM or using lactose-hydrolyzing agents. Study concludes that adverse reactions to CM should be differentiated into immunologic (CMA) and nonimmunologic (CMI). The latter is still a general term that comprises several conditions and requires further differentiation.[23]

A study was conducted with an aim to provide an overview of lactose intolerance, including definition, aetiology and epidemiology, the clinical symptoms and diagnostic testing and management. A literature review was carried out to meet the aims of this paper. This resulted in the analysis of a database of patients tested for lactose intolerance to provide examples of the consequences of problems of terminology identified. Conclusion was the terminology relating to lactose intolerance is confusing for clinicians and researchers. Clinicians need to ensure that these problematic terms do not cause diagnostic mistakes and inappropriate treatment. Researchers should be aware of inconsistent terminology in studies and resultant problems with the interpretation of results.[24]

A study was done to determine Natural course of cow's milk allergy in childhood atopic eczema/dermatitis syndrome. A PubMed literature search was conducted with use of the following phrases: atopic dermatitis and food allergy, atopic dermatitis and cow's milk, and cow's milk and eczema.The result was Food allergy has a role in at least 20% of the cases of AEDS in children younger than 4 years. Cow's milk is usually the first food given to an infant, and cow's milk hypersensitivity is often the first symptom of an atopic condition. Adverse reactions to cow's milk proteins are usually categorized as immunoglobulin (Ig)E-mediated or non-IgE-mediated cow's milk allergy and nonallergic hypersensitivity (intolerance); the symptoms do not allow differentiation of these entities. In patients with cow's milk allergy and AEDS, resolution occurs in 90% by the age of 4 years. Non-IgE-mediated cow's milk allergy often disappears before the age of 1 year. Associated reactions to other foods develop in approximately 45% of patients. Allergy to potential environmental inhalant allergens has been reported in up to 28% of patients by 3 years of age and up to 80% before puberty. After consumption of large amounts of cow's milk, 45% of 10-year-old children who had become tolerant of cow's milk, but also 15% of control subjects, still had gastrointestinal complaints. The presence of cow's milk allergy during infancy increases the risks for development of other food allergies, respiratory atopy, and persistence of AEDS. Finally study concludes adverse reactions to bovine proteins have an important role in AEDS.[25]

A study was conducted on Frequency of cow's milk allergy in childhood. A review of 229 PubMed (National Library of Medicine) articles on cow's milk allergy (CMPA) for the years 1967 through 2001 was performed. In addition, references from other review articles have been included. The results was The diagnosis of reproducible adverse reactions to cow's milk protein (CMP), ie, CMPA, has to be confirmed by controlled elimination and challenge procedures. The incidence of CMPA in infancy seems to be approximately 2 to 3% in developed countries. Symptoms suggestive of CMPA may be encountered in approximately 5 to 15% of infants emphasizing the importance of controlled elimination/milk challenge procedures. Reproducible clinical reactions to CMP in human milk have been reported in approximately 0.5% of breastfed infants. Most infants with CMPA develop symptoms before 1 month of age, often within 1 week after introduction of CMP-based formula. The majority has two or more symptoms from two or

more organ systems. Approximately 50 to 60% have cutaneous symptoms, 50 to 60% have gastrointestinal symptoms, and approximately 20 to 30% respiratory symptoms. Symptoms may occur within 1 hour after milk intake (immediate reactions) or after 1 hour (late reactions). The prognosis of CMPA is good with a remission rate of approximately 45 to 50% at 1 year, 60 to 75% at 2 years, and 85 to 90% at 3 years. Associated adverse reactions to other foods develop in up to 50% and allergy against inhalants in 50 to 80% before puberty. In conclusion CMPA is the most common food allergy in early childhood with an incidence of 2 to 3% in the first year of life. The overall prognosis of CMPA in infancy is good with a remission rate of approximately 85 to 90%. In particular, gastrointestinal symptoms show a good prognosis. An early increased immunoglobulin E-response to CMP is associated with an increased risk of persistent allergy to CMP, development of adverse reactions to other foods, and development of asthma and rhino conjunctivitis later in childhood.[26]

A study was done on Cow's milk protein allergy. A multi-centre study: clinical and epidemiological aspects. Infants suspected of CMPA who attended allergy clinics at the hospitals taking part during the study period were studied and a detailed clinical history was collected on all of them. The challenge test with cow's milk was carried out unless contraindicated by the diagnostic protocol. Two different challenge regimens were used: one of them carried out in 3 days and the other in one day. 409 infants with suspected CMPA were included and the diagnostic challenge test was performed on 286 patients (70 %) and not carried out on 123, as it was not indicated according to the protocol. IgE-mediated allergy was confirmed in 234 infants (58 %) and in 15 (4 %) non-IgE-mediated hypersensitivity was diagnosed. The two challenge regimens were equally secure. The average age when the reaction to cow's milk formula took place was 3.5 months (10 days-10 months). The symptoms appeared in the first week of introduction in 95 % of cases and appeared in 60 % with the first feeding with the formula. The most frequent clinical signs were cutaneous in 94 % of cases and the majority of cases appeared within 30 minutes of the feed. 99 % had been breast fed and 44 % had received some cow's milk supplement during the lactation period. Sensitization to egg not given in the feed was noted in 30 % and to beef in 29 %, being well tolerated in all of these. In conclusion Carrying out an appropriate diagnostic protocol

in infants attending for suspected CMPA allows allergy to be ruled out in a high percentage of cases.[27]

3. **Literature related to prevention and management of milk protein allergy intolerance:**

A study was conducted to identify methods in reducing the prevalence of lactose intolerance in children. A hydrogen respiration test (HRT) method was used in screening lactose intolerance (LI) subjects after taking 25 g of lactose among 106 children aged from 10 to 11 years old in a primary school located in the suburban area of Beijing. A cross-design was used to detect the effects of low lactose milk, yogurt and cereal-effect among 68 selected LI children. Result was the incidence of LI was 80.2% after the children took 25 g of lactose, and after taking a 250 ml of full milk, lactase-fermented milk, co infected milk, yogurt, or milk with meal, the LI incidences were 21.1% (12/57), 0% (0/25), 6.1% (2/33), 8.6% (3/35) and 13.6% (3/22) respectively. At the end study concludes low lactose milks and yogurt could reduce the LI incidence among LI children significantly.[28]

A study was conducted with an objective to evaluate: a) the prevalence of lactose maldigestion and lactose intolerance in a sample of the general population taken from a rural center; b) the frequency of self-reported milk-intolerance and its correlation with lactose-maldigestion; c) the influence of lactose maldigestion, lactose intolerance and self-reported milk intolerance on dietary habits and consumption of total calories, protein, and calcium. They studied a randomized sample of the general population in a small center in Sicily. 323 subjects (150 males, 173 females), age range 5 to 85 years (median 44) were included and underwent H2-breath test after 25 g lactose load. The findings was 104/323 subjects (32.2%) were lactose maldigesters but tolerants, while 13/323 (4%) were lactose maldigesters and intolerants. In each age-class group (pediatric, adult, and elderly subjects) only the lactose maldigester and intolerant subjects showed differences in nutrient intake with a significantly lower daily consumption of milk and a lower calcium intake. 49/323 subjects were self-reported milk-intolerants; of these, 26 (53%) were lactose maldigesters but tolerants, 18 (37%) were lactose digesters and tolerants and only 5 (10%) were lactose maldigesters and intolerants. In the whole group of self-reported milk-intolerants, dietary milk consumption was significantly reduced and calcium intake was lower than in all the

other subjects studied. At last conclusion was in studies of the general population, the frequency of lactose intolerance is much lower than that of lactose maldigestion. Gastrointestinal symptoms after lactose load in self-reported milk-intolerants are found in only a very low number of these subjects. Furthermore, in these subjects we observed an unnecessary reduction in milk consumption and an insufficient dietary calcium intake.[29]

A study was conducted with an objective evaluation of standardized multidisciplinary diagnostic procedures for cow's milk allergy (CMA) in children. From August 1991 until May 1993, 114 children suspected of CMA for the first time were investigated according to the protocol for diagnosis of CMA, together with 23 children, previously diagnosed as CMA, in whom CMA was re-evaluated. Of 114 children with first suspicion of CMA, 66 improved on a cow's milk-free diet. Results tells that in 26/66 (39%) children, the diagnosis of CMA was confirmed by cow's milk challenge. The eosinophilic granulocytes were higher ($p = 0.04$), both IgE RAST and Skin Prick Test (SPT) for cow's milk were more often positive (both $p = 0.01$) in CMA than in non-CMA. The sensitivity and specificity were 50%-82% for IgE RAST and 60%-84% for the SPT, respectively. Four of the 23 children still had CMA at re-evaluation. In three of them, a SPT was performed, which was positive in all. In 12 of the 19 children, without CMA at re-evaluation, a SPT was performed, which was negative in all. At 1, 2, 3 and 4 years of age 13%, 48%, 74% and 78%, respectively, of the re-evaluation CMA patients had developed tolerance for cow's milk. The use of the protocol was found important by the representatives involved, although some practical difficulties remain. At the end conclusion was a multidisciplinary approach of CMA is possible. Improvement on a cow's milk-free diet by itself is not sufficient to diagnose CMA. Cow's milk challenge is obligatory. Laboratory investigations are of limited value. Re-evaluation of CMA after one year of age is necessary in view of the temporary character of CMA. When the SPT for cow's milk is positive, postponement of re-evaluation may be considered.[30]

A study was done with a background of about 50 million Americans malabsorb lactose; the colonic metabolism of this disaccharide may prevent the symptomatic state known as lactose intolerance. Elucidation of the clinical importance of lactose malabsorption requires comparison of symptoms after ingestion of lactose with those following an identical appearing lactose-free

control. This paper reviews the extensive literature concerning lactose-induced symptoms and the value of lactose digestive aids. Poorly controlled studies have suggested that a cup of milk results in appreciable symptoms in the majority of lactase-deficient subjects. In contrast, controlled trials in unselected lactose malabsorbers of subjects claiming severe lactose intolerance indicate that symptoms from a cup of milk are no greater than that with a lactose-hydrolyzed control. An increasing fraction of subjects experience symptoms as the lactose load is increased, with the majority having symptoms when the equivalent of 1 L of milk is ingested as a single dose. Further studies are required to determine the tolerance to several cups of milk taken throughout the day. Available digestive aids include pre-hydrolyzed milk and lactase preparations that can be added to milk (which is then incubated) or ingested with milk. While these products are effective in reducing symptoms, it should be emphasized that there appears to be no need for these preparations when the dosage of milk is limited to one cup per day.[31]

A study was conducted on Five-year follow-up of high-risk infants with family history of allergy who were exclusively breast-fed or fed partial whey hydrolysate, soy, and conventional cow's milk formulas. In this study 216 high-risk infants whose mothers had elected not to breast-feed were randomized to receive exclusively a partial whey hydrolysate formula or a conventional cow's milk formula or a soy formula until 6 months of age. Seventy-two high risk infants breast-fed for 4 months were also studied. The result was Follow-up until 5 years of age showed a significant lowering in the cumulative incidence of atopic disease in the breast-fed (odds ratio 0.422 and the whey hydrolysate groups, compared with the conventional cow's milk group. Soy formula was not effective (odds ratio 0.759. The occurrence of both eczema and asthma was lowest in the breast-fed and whey hydrolysate groups and was comparable in the cow's milk and soy groups. Similar significant differences were noted in the 18-60 month period prevalence of eczema and asthma. Eczema was less severe in the whey hydrolysate group compared with the other groups. Double-blind placebo-controlled food challenges showed a lower prevalence of food allergy in the whey hydrolysate group compared with the other formula groups. At the end conclusion Exclusive breast-feeding or feeding with a partial whey hydrolysate formula is

associated with lower incidence of atopic disease and food allergy. This is a cost-effective approach to the prevention of allergic disease in children.[32]

A study was done on Effects of a dietary and environmental prevention programme on the incidence of allergic symptoms in high atopic risk infants: three years' follow-up. A prospective case-control study is presented to assess an allergy prevention programme in children up to 36 months of age. Infants born at three maternity hospitals were followed from birth: 279 infants with high atopic risk (intervention group) were compared with 80 infants with similar atopic risk but no intervention (non-intervention group). The intervention programme included dietary measures and environmental measures. The incidence of allergic manifestations was much lower in the intervention group than in the non-intervention group at 1 year (11.5 versus 54.4%, respectively) and at 2 years (14.9 versus 65.6%) and 3 years (20.6 versus 74.1%). Atopic dermatitis and recurrent wheezing were found in both the intervention group and the non-intervention group from birth up to the second year of life, while urticaria and gastrointestinal disorders were only present in the non-intervention group in the first year of life. Babies in the non-intervention group fed with adapted formula were more likely to develop allergies than breastfed babies in the same group. Infants in the intervention group fed the adapted formula had significantly more allergies than the breastfed and hydrolysed milk fed infants, although less than their counterparts in the non-intervention group. Of the various factors tested in the non-intervention group, the following were the most important in the pathogenesis of allergic symptoms: (i) formula implementation begun in the first week of life; (ii) early weaning (< 4 months); (iii) feeding beef (< 6 months); (iv) early introduction of cow's milk (< 6 months); and (v) parental smoking in the presence of the babies and early day care admission (< 2 years of life). All the preventive measures used in this study were effective at the third year of follow-up, greatly reducing allergic manifestations in high atopic risk babies in comparison with those not receiving these interventions.[33]

A study was done with an objective to determine whether feeding them an adapted soy formula compared to human milk, cow's milk formula or a hydrolysed protein formula prevents allergy or food intolerance. Randomised and quasi-randomised trials that compare the use of an adapted soy formula to human milk, an adapted cow's milk or a hydrolysed protein formula for

infant feeding in the first 6 months. The result was Five eligible studies were found, all enrolling infants at high risk of allergy on the basis of a family history of allergy in a first degree relative. All studies compared use of soy to a cow's milk formula. Two studies also included a group fed a formula containing hydrolysed protein. No eligible study enrolled infants fed human milk. No study examined the effect of early, short term soy formula feeding. Three studies were of good methodology and did not have unbalanced allergy-preventing co-interventions in the treatment groups. Comparing soy to cow's milk formula, one study with unclear allocation concealment and 19.5% losses to follow up reported a reduction in cumulative incidence of childhood allergy, asthma and allergic rhinitis. No other study reported a significant benefit for any allergy or food intolerance. Analysis found no significant difference in allergy cumulative incidence in infancy and no significant difference in cumulative incidence or period prevalence of any specific allergy or food intolerance in infancy or childhood. Analysis of studies comparing soy to a hydrolysed formula found a significant increase in infant and childhood allergy cumulative incidence,infant eczema cumulative incidence and childhood food allergy period prevalence. Reviewers concluded Feeding with a soy formula should not be recommended for the prevention of allergy or food intolerance in infants at high risk of allergy or food intolerance.[34]

A study was done with an objective to estimate the effect of dietary avoidance of cow's milk protein on the development of asthma or wheeze in children. They included randomised controlled trials involving children with a family history of atopy in at least one first degree relative, if feeding with cow's milk based standard formula was compared to dietary avoidance of cow's milk protein, using soya or other hypoallergenic formula during the initial four months of life or longer. The main result was Six trials used hydrolysed formula for at least four months, in addition to dietary restrictions and in some cases dust-mite reduction measures. The risk of infants experiencing asthma or wheeze during the first year of life was reduced compared to standard cow's milk based formula (Relative Risk 0.40, 95% Confidence Intervals 0.19 to 0.85). Feeding soya-based formula as opposed to standard cow's milk formula did not reduce the risk of having asthma or wheeze at any age. Finally authors concluded that Breast-milk should remain the feed of choice for all babies. In infants with at least one first degree relative with atopy, hydrolysed

formula for a minimum of four months combined with dietary restrictions and environment measures may reduce the risk of developing asthma or wheeze in the first year of life. There is insufficient evidence to suggest that soya-based milk formula has any benefit.[35]

A study was done with an objective to study the effects of breast and formula feeding and other environmental and genetic factors on the subsequent type of cow's milk allergy classified by the presence or absence of immunoglobulin (Ig) E antibodies to cow's milk. A cohort of 6209 infants was followed prospectively from birth for symptoms of cow's milk allergy. The infant-feeding regimen was recorded at the maternity hospital and at home. At a mean age of 6.7 months, a total of 118 infants (1.9%) reacted adversely to a challenge with cow's milk. Before the challenge, the response to a skin-prick test with cow's milk and serum IgE cow's milk antibodies was measured. The result was at challenge, 75 (64%) infants showed IgE-positive reactions to cow's milk, their most common symptom being acute-onset urticaria. Significant risk factors for the presence of IgE cow's milk antibodies in allergic infants were long breast-feeding 3.9, 95% confidence interval, exposure to cow's milk at the maternity hospital and breast-feeding during the first 2 months at home either exclusively or combined with infrequent exposure to small amounts of cow's milk. Fifty infants had their first adverse symptoms during exclusive breast-feeding, and 32 infants were sensitized during exclusive breast-feeding. Most of the infants in both cases were IgE-positive: 37 and 23, respectively. Finally conclusion was In infants who are prone to developing cow's milk allergy, prolonged breast-feeding exclusively or combined with infrequent exposure to small amounts of cow's milk during the first 2 months of life induces development of IgE-mediated response to cow's milk.[36]

A study was conducted to determine whether feeding hydrolyzed infant formulas from birth has a role in allergy prevention. Nine published trials evaluated the use of extensively hydrolyzed formulas, 12 evaluated the use of partially hydrolyzed formulas in high-risk infants, and 1 evaluated the use of partially hydrolyzed formulas in an unselected infant population. The reports compared hydrolyzed formulas with breastfeeding, cow's milk formulas, soy formulas, and combinations thereof. The cohort of studies consistently showed reductions in the cumulative incidence of atopic disease from 12 to 60 months of age among high-risk infants fed extensively

hydrolyzed casein formulas or partially hydrolyzed whey formulas vs cow's milk formulas. No studies showed an increase in allergy risk with any hydrolyzed formulas. Conclusion was extensively hydrolyzed casein formulas and partially hydrolyzed whey formulas are appropriate alternatives to breast milk for allergy prevention in infants at risk. Because atopic disease in children cannot be predicted, the use of these formulas in the general population should be considered, and one must weigh cost, compliance, and long-term benefits.[37]

A study was done on effect of breast feeding on incidence of infection and allergy. 3 separate prospective controlled studies in India and Canada were conducted to determine the immunologic benefits of breastfeeding. In the Indian rural study, 35 newborn infants breastfed exclusively for at least the first 2 months of life were studied, along with 35 bottlefed controls matched as to socioeconomic status, parental education, occupation and family size. In the Canadian urban study, 30 breastfed neonates and 30 matched bottlefed controls were similarly studied. The third study consisted of 37 infants exclusively breastfed for the first 6 weeks of life or longer; these infants had older siblings diagnosed as having an atopic disease. The controls consisted of 37 bottlefed infants who also had an older sibling with an allergic disease. In both the Indian and Canadian studies, all breastfed infants had significantly lower incidence of respiratory and diarrheal diseases and of complications such as pneumonia and dehydration (p0.001 in the Indian study; in the Canadian study, p.001 for respiratory infection and otitis media, p0.01 for diarrhea and p0.1 for dehydration) compared with bottlefed infants. In the study of infants with family history of atopy, breastfed infants had a marked reduction in the incidence of clinical atopic eczema and of recurrent allergic wheezing. High levels of serum IgE were seen in a large number of bottlefed infants, as were eosinophilia; IgE antibodies to cow's milk protein (40% of bottlefed babies); hemagglutinating antibodies (84%), and; complement activation in vivo after milk challenge. These findings support the claim that breastmilk provides immunologic benefits to the infant. They also show that 6 weeks of exclusive breastfeeding is effective in reducing the possibility of hypersensitivity and the incidence of manifest allergic disease in susceptible infants.[38]

A study was done on with an objective to to assess the preventive effect of differently hydrolyzed formulas compared with cow's milk formula (CMF) in high-risk infants. Between 1995 and 1998, 2252 infants with a hereditary risk for atopy were enrolled in the German Infant Nutritional Intervention Study and randomly assigned at birth to one of 4 blinded formulas: CMF, partially hydrolyzed whey formula, extensively hydrolyzed whey formula, and extensively hydrolyzed casein formula (eHF-C). Results were At 12 months per protocol, analysis was performed on 945 infants exposed to study formula: 304 (13.5%) infants had left the study, 138 (6.1%) infants were excluded because of noncompliance, and 865 infants were exclusively breast-fed the first 4 months of life. The incidence of allergic manifestation was significantly reduced by using eHF-C compared with CMF, and the incidence of AD was significantly reduced by using eHF-C and partially hydrolyzed whey formula. Family history of AD was a significant risk factor and modified the preventive effect of the hydrolysates. In conclusion was Prevention of allergic diseases in the first year of life is feasible by means of dietary intervention but influenced by family history of AD. The preventive effect of each hydrolyzed formula needs to be clinically evaluated.[39]

A study was done on Children who are allergic to cow's milk. Nutritional treatment. An allergy or intolerance to cow's milk protein (APLV-IPLV) is the most frequent food allergy among early childhood in our environment, related to genetic and environmental factors. This allergy tends to appear during the first few months of life, after the introduction of cow's milk protein in a child's diet and it manifests itself with symptoms which depend on foreign matter being introduced (immunological or otherwise). A diagnosis is made by means of the patient's case history and is completed by laboratory tests. Treatment consists of excluding cow's milk protein from the child's diet. Formulas derived from cow's milk are substituted by a hydrolyzed formula or one based on soybean. The prognosis is good: patients respond to this diet which does not include cow's milk protein and the majority of patients succeed in forming tolerance for cow's milk protein. A nurse's role is fundamental in educating parents and later on the child in order to achieve following a diet which completely eliminates cow's milk protein (PLV).[40]

A study was done on Breast-feeding and the development of cows' milk protein allergy. In a cohort of 6209 infants, 824 were exclusively breast-fed and 87% required supplementary milk while in the maternity hospital: 1789 received Cow's milk formula, 1859 pasteurized human milk, and 1737 whey hydrolysate formula. The content of transforming growth factor-beta1 (TGF-beta1) in colostrum from mothers of infants with IgE-mediated cows' milk allergy was lower than from mothers of infants with non-IgE-mediated cows' milk allergy. In infants with cows' milk allergy, TGF-beta1 in colostrum negatively correlated with the result of skin prick test and the stimulation of peripheral blood mononuclear cells to Cow's milk, but positively with infants' IgA and IgG antibodies to Cow's milk proteins. Feeding of Cow's milk formula at maternity hospital increases the risk of cows' milk allergy, but exclusive breast-feeding does not eliminate the risk. Prolonged breast-feeding exclusively or combined with infrequent exposure to small amounts of Cow's milk during the first 8 weeks induces the development of IgE-mediated cows' milk allergy. Colostral TGF-beta1 may inhibit IgE- and cell mediated reactions and promote IgG-IgA antibody production to Cow's milk in infants prone to developing cows' milk allergy.[41]

A study was conducted on Hypersensitivity to hydrolyzed cow's milk protein formula in infants and young children with atopic eczema/dermatitis syndrome with cow's milk protein allergy. The study included 67 hospitalized children with AEDS (m/f--43/24), aged 1-28 months and CMA confirmed by oral food challenge. All patients were treated with extensively hydrolyzed formulas: 48/67 children with casein hydrolysates and 19/67 children with whey hydrolysates. The result was In most of studied children they recognized severe AEDS with elevated total IgE. In 22/67 children (32.8%) we established diagnosis of hypersensitivities to hydrolyzed formula (HHF): in 17/22 to casein hydrolysates, in 4/22 to whey hydrolysates and in 1/22 to amino-acid based formula. Children with HHF did not differ in the severity of AEDS evaluated by SCORAD the serum level of total IgE and the time of breast-feeding. They differ in the number of plasma eosinophils and positive correlation between number of eosinophils and serum level of total IgE. Final conclusion was Children with moderate or severe atopic eczema/dermatitis syndrome can demonstrate hypersensitivity to hydrolyzed formula recommended for therapeutic indications.[42]

METHODOLOGY

For any research work the methodology of investigation is of vital importance. Research methodology aims at helping the researcher to answer the research questions effectively, accurately, and economically, studying how research is done scientifically.[43]

The chapter includes research approach, setting of the study, sample, sampling technique, development and description of tool, pilot study, data collection and plan for data analysis, presentation of findings and preparation and presentation of structured teaching programme.

Research Approach

The Research approach adapted for this study is Evaluative approach.

Evaluative approach is "an applied form of research that involves finding out how well a programme, practice, procedure or policy is working; the main goal is to assess or evaluate the success of a programme (Polit and Hungler).[44]

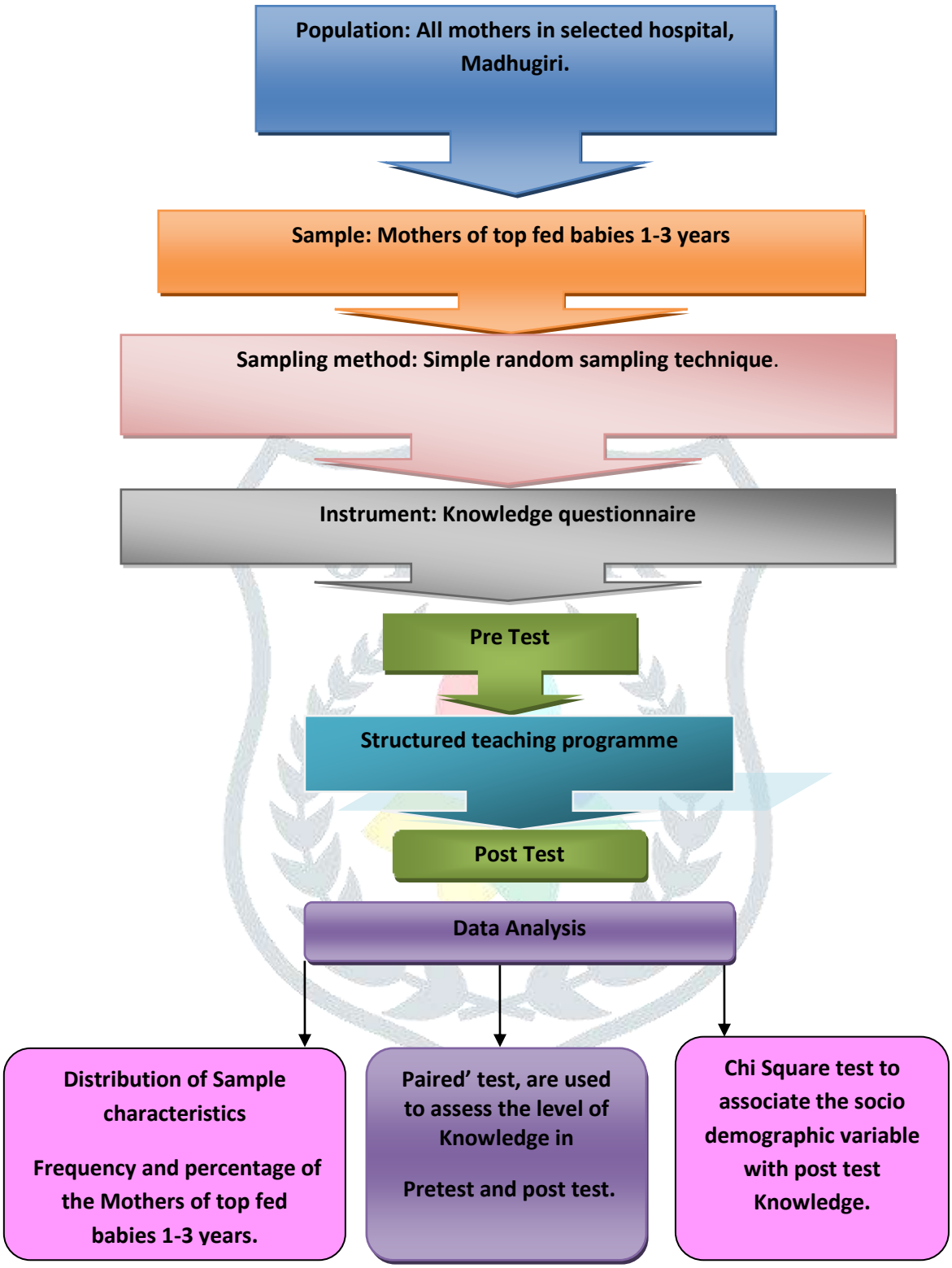
Research design

The research design is the plan, structure and strategy of investigations of answering research questions. It is the overall plan or blueprint the researcher selects to carry out the study.

The research design refers to the researchers overall plan for obtaining answer to the research question and it spells out strategies that the researcher adopted to develop information i.e. accurate, objective and interpretable.

Quasi experimental single group pretest and post test design judges the treatment by the difference between pre test post test scores without comparing with a control group.

FIG.2. SCHEMATIC REPRESENTATION OF RESEARCH DESIGN



Setting of the study

Setting is the physical location and condition in which data collection takes place in the study (Polit and Hungler).[44]

The setting of this study is Government District hospital, Tumkur.

Population

The population is any group of any individuals who have one or more characteristics in common that are of interest to the researcher (Best and Khan).[45]

The target population of the study includes All the Mothers in selected hospital, Tumkur.

Sample

Sample consists of the subject of the population selected to participate in the research study. Sampling refers to the process of selecting the portion of population to represent the entire population.

The sample for the study comprises of 60 Mothers of top fed babies 1-3 years in selected hospital, Tumkur.

Sampling technique

Sampling refers to the process of selecting the portion of population to represent the entire population. In the present study the simple random sampling technique was used to select the samples.[46]

Development of the tool

The instrument is a vehicle that could obtain data pertinent to the study and at the same time adds to the body of general knowledge in the discipline.

The investigator developed a structured questionnaire schedule to assess the knowledge of Mothers of top fed babies 1-3 years regarding Milk Protein Intolerance. It is considered to be an appropriate instrument.

The following steps were carried out for preparing the tool

- Review of related literature
- Preparation of blue print
- Expert's opinion
- Investigator's personal experience

Description of the tool

Section A: Demographic data

The first part of the tool consists of 5 items for obtaining information about the selected background factors such as age, Educational status, Type of family, Income of family and Source of information. The researcher conducted individual structured questionnaire to collect the data and put a tick mark against the column provided.

Section B: Knowledge questionnaire

Questionnaire to assess the knowledge of Mothers Of Top Fed Babies 1-3 Years regarding Milk Protein Intolerance consists of 30 items. Total score is 30.It has again 5 parts,

Part I: contains 4 items related to General information.

Part II: contains 2 items related to Milk protein intolerance.

Part III: contains 3 items related to Causes.

Part IV: contains 8 items related to Signs and symptoms.

Part V: contains 2 items related to Complications.

Part VI: contains 11 items related to Prevention and management.

The knowledge level has been arbitrarily divided into three categories based on the Mothers Of Top Fed Babies 1-3 Years scores in the structured questionnaire.

- Adequate knowledge –21-30 (>75%)
- Moderately adequate knowledge –11-20 (51%-75%)
- Inadequate knowledge –0-10 (<50%)

Validity of the tool

Validity refers to the degree to which an instrument measures what it is supposed to measure. Content validity refers to the degree to which the items in an instrument adequately represent the universe of content (Heber).[47]

The prepared instruments along with the objectives, operational definitions, blue print, scoring key and criteria checklist for validation were submitted to 7 experts, which include 1 Doctor, 5 Nurse Educators, 1 Statistician to establish content validity.

The demographic data consisted of 5 items, according to the expert's opinion the final tool consisted of 5 items.

The final draft of knowledge questionnaire consisted of 30 items. There were 100% agreement on 30 items of the knowledge questionnaire were retained as per expert's opinion.

Reliability of tool

Reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to measure. It refers to the extent to which the same results are obtained on repeated administration of the instrument.

In order to establish the reliability of the tool, split-half method was used. The tool was administered to 10 subjects and the test was first divided into two equivalent halves and correlation of the half test was found by using Karl Pearson correlation co-efficient formula and the significance of the correlation was tested by using probable error. The reliability co-efficient of the whole test was then estimated by Spearman's brown prophency formula.

The reliability of the pre test was 0.82. So the tool was found to be highly reliable for data collection.

Structured teaching programme

Teaching plan is a guide for the teacher because it covers the topics comprehensively with proper sequence of points and without missing anything.

Steps in preparing the teaching plan

1. Setting preliminary information with regard to background information of the group.
2. Framing outline of the teaching plan.
3. Preparing outline of the content.
4. Deciding method of instruction and audio visual aids.

5. Evaluation of the teaching plan.

1. Setting preliminary information with regard to background information of the group:

The questionnaire was used to assess the knowledge of Mothers Of Top Fed Babies 1-3 Years regarding Milk Protein Intolerance and this formed the basis for preparing content of the teaching plan.

2. Framing outline of the teaching plan:

The outline of the teaching plan was framed which includes setting of general and specific objectives, specifying the dates, time, place, size of the group and duration of the session.

3. Preparing outline of the content:

The content of the teaching plan included topics on general awareness about Milk Protein Intolerance. These topics were explained under various headings like General information, Milk protein intolerance, Causes, Signs and symptoms, Complications, and Prevention and management.

4. Deciding method of instruction and audio visual aids:

The method of teaching adopted was lecture cum discussion. The information on Milk Protein Intolerance was shown with the help of flash cards charts.

5. Evaluation of the teaching plan:

Evaluation of teaching plan was ascertained by consulting experts in the field of medicine and nursing. The major recommendations and suggestions were accepted to modify the teaching plan.

Pilot study

The pilot study is the trial run study conducted before actual study in different population with similar characteristics. The data for pilot study was collected from 10 Mothers Of Top Fed

Babies 1-3 Years J.S. Hospital, Madhugiri from 5-11-2012 to 15-11-2012**.** The permission to conduct the pilot study was obtained from the Medical superintendent, J.S. Hospital, Madhugiri. 10 subjects were selected by simple random sampling. The purpose of the study was explained and confidentiality was assured. The tool was administered through questionnaire method to the subjects and data was collected. The analysis was done by using descriptive and inferential statistics.

After the pilot study the tool was found feasible, practicable and acceptable. So no change was found to be necessary in the main study design and the pilot study confirmed that the final study would be feasible.

Data collection process

The data collection was scheduled from 1-12-2012 to 31-12-2012**;** before the data collection the investigator obtained the formal permission from the Medical superintendent Government District hospital, Tumkur, conduct the study. The investigator visited the Government District hospital on the given dates. After the pre-test, STP was administered. After 7 days post test was conducted using the same questionnaire to evaluate the effectiveness of STP.

Plan for Data Analysis

The data to be analyzed is planned on the basis of objectives and hypothesis of the study. The data obtained will be analyzed by using descriptive and inferential statistical tests.

The plan of data analysis is as follows:

Section A: Demographic data

Demographic data would be analyzed by using frequency and percentage.

Section B: Knowledge questionnaire

The knowledge of the nursing students would be analyzed in terms of frequency, percentage, mean, mean percentage and standard deviation.

Section C: Chi-square test used to analyze between knowledge and demographic variables:

The level of significance would be set at 0.05 levels to test the significance of difference. This level is often used as a standard for testing the difference.

Summary:

This chapter dealt with research approach and design, variables, setting and sampling. It includes the preparation and pre testing of the tool and structured teaching programme. This chapter also dealt with pilot study, data collection procedure and plan for data analysis.

RESULTS

INTERPRETATION:

Data analysis is a dynamic process that involves interaction between the researcher and his or her experience of the data whether the data is communicated orally or in written. During this process, the researcher explores personal feelings and experiences that may influence the study and integrates this understanding in to the study.

Analysis is the categorizing, ordering, manipulating and summarizing of data to obtain answers to the researcher's questions.

An Evaluatory approach was adopted to assess the knowledge regarding Milk Protein Intolerance. Data collected from 60 samples were tabulated, analyzed and interpreted by using descriptive and inferential statistics based on the objectives of the study.

STUDY OBJECTIVES:

1. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years before structured teaching programme.

2. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years after structured teaching programme.

3. To evaluate the effectiveness of structured teaching programme.

4. To determine the association of between knowledge on milk protein intolerance among mothers of top fed babies 1-3 years and selected variables.

ORGANIZATION OF DATA:

The findings were presented under the following sections.

Section I: Frequency and percentage distribution of selected socio-demographic variables.

Section II: Assessment of level of knowledge in Pre test.

Section III: Assessment of level of knowledge in Post test.

Section IV: Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme.

Section V: CHI square value showing the association between the pretest knowledge score and demographic variables.

HYPOTHESIS:

H1: There will be significant difference between pretest and posttest knowledge scores of mothers of top fed babies 1-3 years regarding the milk protein intolerance.

H2: There will be significant association between selected socio-demographic variables with knowledge scores.

Section I

Frequency and percentage distribution of selected socio-demographic variables

Table 1: Frequency and percentage distribution according to Age in years

SL. NO.	AGE IN YEARS	FREQUENCY	PERCENTAGE (%)
1.	18-20Yrs	14	23.3
2.	21-23yrs	26	43.3
3.	24yrs and above	20	33.4
	TOTAL	60	100

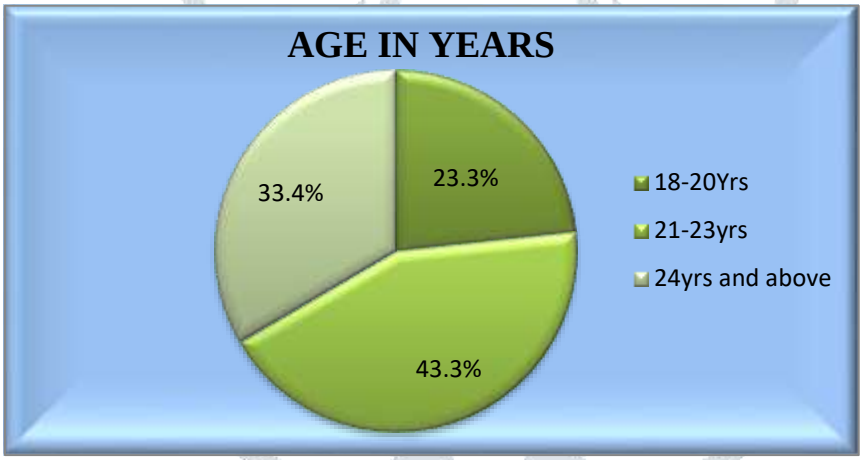


Fig (3) Pie diagram showing the Frequency and percentage distribution according to Age in years

The data represented in the fig shows that 23.3 %(14) of them were 18-20 yrs old, 33.4 %(20) of them were 24 yrs and above old and 43.3 %(26) were 21-23 yrs old.

Table 2: Frequency and percentage distribution according to Educational status

SL. NO.	Educational status	FREQUENCY	PERCENTAGE (%)
1.	Illiterate.	12	20
2.	Primary school.	17	28.4

3.	**High school**	**14**	**23.3**
4.	**Graduate.**	**11**	**18.3**
5.	**Post Graduate and above.**	**6**	**10**
	TOTAL	**60**	**100**

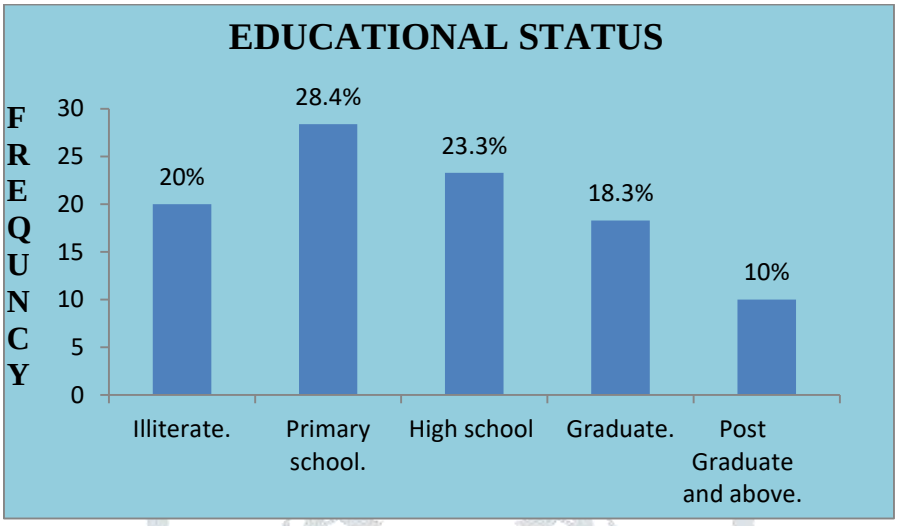


Fig (4) Bar diagram showing the Frequency and percentage distribution according to Educational status

The data represented in bar chart shows that 12(20%) of the samples were illiterate, 17(28.4%) were completed primary school, 14(23.3%) of samples were completed high school, 11(18.3%) were graduates, and 6(10%) were completed post graduates and above.

Table 3: Frequency and percentage distribution according to Type of Family

SL. NO.	Type of Family	FREQUENCY	PERCENTAGE (%)
1.	**Nuclear family.**	**34**	**56.7**
2.	**Joint family.**	**26**	**43.3**
	TOTAL	**60**	**100**

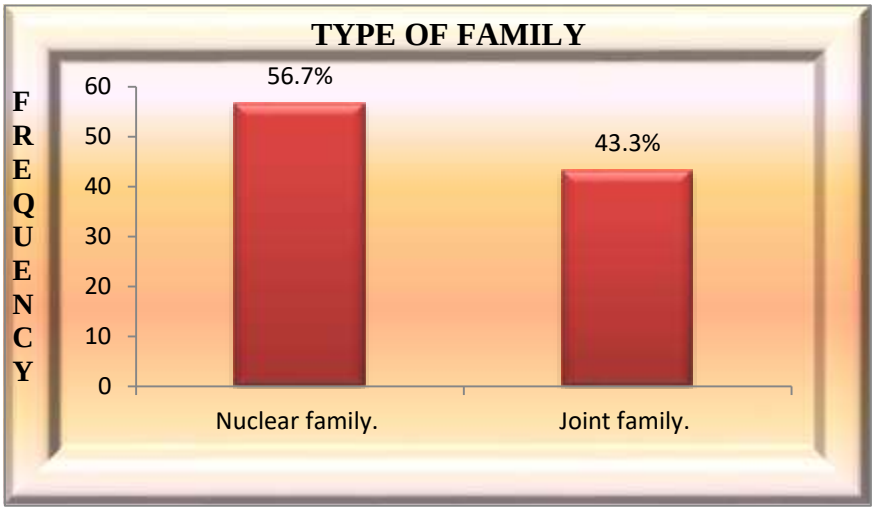


Fig (5) Bar diagram showing the Frequency and percentage distribution according to Type of Family

The data represented in bar chart shows that 34(56.7%) of them were from nuclear family, and 26(43.3%) of the samples from joint family.

Table 4: Frequency and percentage distribution according to Income of Family

SL. NO.	Income of family	FREQUENCY	PERCENTAGE (%)
1.	Rs.1000-3000/-	10	16.7
2.	Rs.3001-6000/-	21	35
3.	Rs.6001-9000/-	22	36.7
4.	Rs. 9001 and above.	7	11.6
	TOTAL	60	100

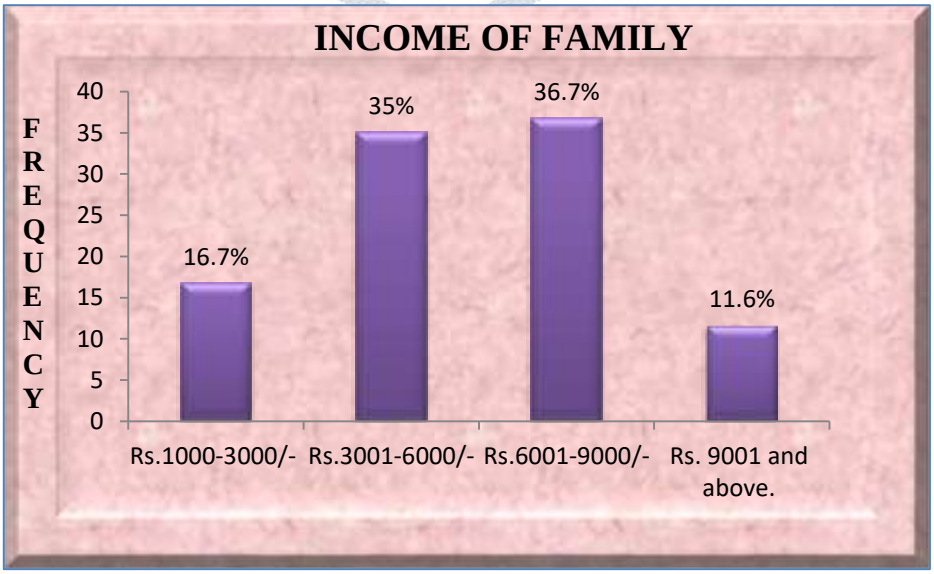


Fig (6) Bar diagram showing the Frequency and percentage distribution according to Income of Family

The data represented in bar chart shows that 10(16.7%) of them were earning Rs.1000-3000/-, 21(35%) of them were earning Rs.3001-6000/-, 22(36.7%) were earning Rs.6001-9000/- , 7(11.6%) of the samples were getting Rs. 9001 and above.

Table 5: Frequency and percentage distribution according to Source of information

SL. NO.	Source of information	FREQUENCY	PERCENTAGE (%)
1.	Reading books & journals	9	15
2.	Mass media	18	30
3.	Friends and relatives	23	38.3
4.	Neighbors	10	16.7
	TOTAL	60	100

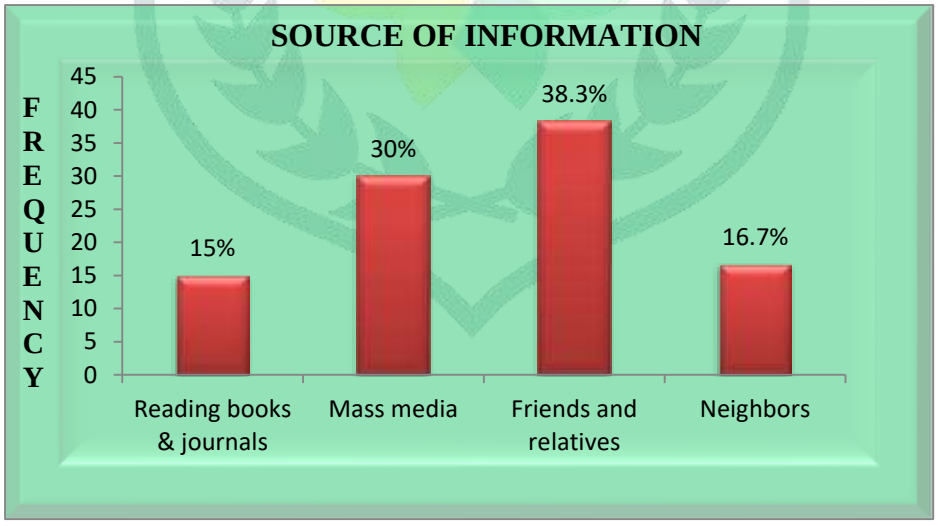


Fig (7) Bar diagram showing the Frequency and percentage distribution according to Source of information

The data represented in bar chart shows that 9(15%) of the samples were getting information from Reading books & journals, 18(30%) were getting from Mass media,

23(38.3%) were getting from Friends and relatives, and 10(16.7%) of samples getting from Neighbors.

Section II

Assessment of level of knowledge in Pre test

TABLE 6: KNOWLEDGE SCORE REGARDING MILK PROTEIN INTOLERANCE

N=60

Sl. No.	Aspect wise analysis	No. of items	Mean	Median	SD	Mean%	range
1.	General information	4	2.28	2	0.97	13.33	3
2.	Milk protein intolerance	2	1.54	2	0.50	6.66	1
3.	Causes	3	1.44	1.43	1.04	10	3
4.	Signs and symptoms	8	4.4	4.4	1.80	26.67	5
5.	Complications	2	1.46	1.46	0.50	6.67	1
6.	Prevention and management	11	6.45	6.45	2.79	36.67	8
7.	Overall knowledge score	30	17.56	20	20	100	16

The data presented in the above table shows that in pre test from General information mean was 2.28, Standard deviation was 0.97 and means percentage score was 13.33%, as like in Milk protein intolerance mean was 1.54, standard deviation was 0.50 and mean percentage was 6.66%. If we come to Causes mean was 1.44, standard deviation was 1.04 and mean percentage was 10%, but in Signs and symptoms mean was 4.4, standard deviation was 1.80 and mean percentage was 26.67%, then in Complications mean was1.46, standard deviation was 0.40 and mean percentage was 6.67%, again in Prevention and management mean was6.45, standard deviation was 2.79and mean percentage was 36.67%,Finally over all knowledge score was mean was 17.56, standard deviation was 20 and mean percentage was 100%.

TABLE 7: DISTRIBUTION OF SUBJECTS ACCORDING TO LEVEL OF KNOWLEDGE IN PRE TEST

N=60

Level of Knowledge	Frequency	Percentage
Adequate	21	35
Moderately adequate	24	40
Inadequate	15	25
Total	60	100

The above table shows that in pre test 21(35%) of them were having adequate knowledge, 24(40%) of them were having moderately adequate knowledge and 15(25%) of them were having inadequate knowledge.

Section III

Assessment of level of knowledge in Post test

TABLE 8: KNOWLEDGE SCORE REGARDING MILK PROTEIN INTOLERANCE

N=60

Sl. No.	Aspect wise analysis	No. of items	Mean	Median	SD	Mean%	range
1.	General information	4	3.16	3	0.52	13.33	2
2.	Milk protein intolerance	2	1.90	2	0.30	6.66	1
3.	Causes	3	2.95	3	0.21	10	1
4.	Signs and symptoms	8	6.83	7	0.66	26.67	3
5.	Complications	2	2.0	2	0.45	6.67	0
6.	Prevention and management	11	10.45	11	0.85	36.67	3
7.	Overall knowledge score	30	29.56	20	5.72	100	16

The data presented in the above table shows that in pre test from General information mean was 3.16, Standard deviation was 0.52 and means percentage score was 13.33%, as like in Milk protein intolerance mean was 1.90, standard deviation was 0.30 and mean percentage was 6.66%. If we come to Causes mean was 2.95, standard deviation was 0.91 and mean percentage was 10%, but in Signs and symptoms mean was 6.83, standard deviation was 0.66 and mean percentage was 26.67%, then in Complications mean was2.0, standard deviation was 0.45 and mean percentage was 6.67%, again in Prevention and management mean was10.45, standard deviation was 0.85 and mean percentage was 36.67%,Finally over all knowledge score was mean was 29.56, standard deviation was 5.72 and mean percentage was 100%.

TABLE 9: DISTRIBUTION OF SUBJECTS ACCORDING TO LEVEL OF KNOWLEDGE IN POST TEST.

N=60

Level of Knowledge	Frequency	Percentage
Adequate	60	100
Moderately adequate	0	0
Inadequate	0	0
Total	60	100

The data presented from the above table in post test it shows that none of them were having moderately adequate and inadequate knowledge.

Section IV

TABLE 10: Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme

Sl. No.	Aspect wise analysis		Mean	SD	't' value
1.	General information	Pre	2.28	0.97	
		Post	3.16	0.52	5.68
2.	Milk protein intolerance	Pre	1.54	0.50	
		Post	1.90	0.30	4.88
3.	Causes	Pre	1.44	1.04	
		Post	2.95	0.21	10.86
4.	Signs and symptoms	Pre	4.4	1.80	
		Post	6.83	0.66	10.02
5.	Complications	Pre	1.46	0.50	
		Post	2.0	0.45	8.211
6.	Prevention and management	Pre	6.45	2.79	
		Post	10.45	0.85	10.77
7.	Overall knowledge score	Pre	17.56	20	
		Post	29.56	20	9.00

The data represented in the table shows that there was a significant increase in knowledge level after STP in all the assessment variables. Regarding General information, the mean score prior intervention was only 2.28, it was increased to 3.16, in Milk protein intolerance it was increased from 1.54 to 1.90, in causes it was increased from 1.44 to 2.95, in Signs and symptoms it was increased from 4.4 to 6.83, in Complications from 1.46 to 2.0 it was increased, in Prevention and management it was increased from 6.45 to 10.45 and at last overall knowledge score increased from 17.56 o 29.56.

Section V

TABLE 11: CHI square value showing the association between the pretest knowledge score and demographic variables

Sl. No.	Demographic variables	Pre-test median knowledge score(14)		χ^2 calculated value	df	Inference
1.	**Age in yrs**	**≤median**	**≥median**			
	18-20Yrs	10	4	0.476	2	NS
	21-23yrs	17	9			
	24yrs and above	12	8			
2.	**Educational status**					
	Illiterate.	10	2	4.04	4	NS
	Primary school.	11	6			
	High school	7	7			
	Graduate.	8	3			
	Post Graduate and above.	3	3			

Note: NS: Nothing significant, S*: Significant, df: Degree of freedom, p<0.05 At df=1: critical value is 3.84, At df=2: critical value is 5.59, At df=3: critical value is 7.82, Yaete's correction done for the observed value less than 5.

1. **Age in years:** It was observed that in 18-20 yrs aged students 10 of them are scored below median and 4 of them were scored more than median, same like that in 21-23 yrs aged students 17 of them were scored less than median and 9 of them were scored more than median and in the age group between 24yrs and above 12 of them were scored less than median and 8 of them are scored more than median. The χ^2 value 0.476 shows that there is no association between ages with pre test knowledge scores.
2. **Educational status:** It was observed that 12 samples were illiterates in that 10 of them were scored less than median and 2 of them were scored more than median. 17 were primary educated samples in that 11 of them were scored less than median and 6 of them were scored more than median, 14 of them were high school education in that 7 of them were scored less than median and 7 of them were scored more than median, 11 of them were graduates from them 8 of them were scored less than median and 3 of them were scored more than median, 6 of them were post graduates and above 3 of them were scored less than median and 3 of them were scored more than median. The χ^2 value 4.04 shows that there is no association between Educational status and pre test knowledge scores.

Section V

TABLE 11: CHI square value showing the association between the pretest knowledge score and demographic variables

Sl. No.	Demographic variables	Pre-test median knowledge score(14)		χ^2 calculated value	df	Inference
1.	**Type of family**	**≤median**	**≥median**			
	Nuclear family	22	12	0.33	1	NS
	Joint family	17	9			
2.	**Income of family.**					
	Rs.1000-3000/-	4	6	4.73	3	NS
	Rs.3001-6000/-	13	8			
	Rs.6001-9000/-	16	6			
	Rs. 9001 and above.	6	1			
3.	**Source of information**					
	Reading books & journals	7	2	3.80	3	NS
	Mass media	13	5			
	Friends and relatives	15	8			
	Neighbors	4	6			

Note: NS: Nothing significant, S*: Significant, df: Degree of freedom, p<0.05 At df=1: critical value is 3.84, At df=2: critical value is 5.59, At df=3: critical value is 7.82, Yaete's correction done for the observed value less than 5.

1. Type of family: It shows that 34 subjects were from nuclear family in that 22 of them were scored less than median and remaining 12 of them were scored more than median, 25 subjects were from joint family in that 19 of them were scored less than median and remaining 7 of them were scored more than median, This concludes that in χ^2 value **0.33** shows that there is no association between type of family and pre test knowledge scores

2. Income of family: It shows that 10 subjects were getting Rs.1000-3000/- in that 4 of them were scored less than median and remaining 6 of them were scored more than median, 21 subjects were getting Rs.3001-6000/-, out of them 13 of them were scored less than median and remaining 8 of them were scored more than median, 22 subjects were getting Rs.6001-9000/- in that 16 of them were scored less than median and remaining 6 of them were scored more than median, same like that 7 subjects were getting Rs. 9001 and above out of these 6 of them were scored less than median and 1 of them were scored above median. This concludes that in χ^2 value 4.73 shows that there is no association between Income of family and pre test knowledge scores.

3. Source of information: It shows that 9 subjects receiving information from Reading books & journals in that 7 of them were scored less than median and remaining 2 of them were scored more than median, 18 subjects getting information from Mass media out of them 13 of them were scored less than median and remaining 5 of them were scored more than median, 23 subjects were receiving information from friends and relatives in that 15 of them were scored less than median and remaining 8 of them were scored more than median, same like that 10 subjects receiving information from, neighbors out of these 4 of them were scored less than median and 6 of them were scored above median. This concludes that in χ^2 value 3.80 shows that there is no association between Source of information and pre test knowledge scores.

DISCUSSION

This section attempts to discuss the findings of the study. The study was focused on assessing the effectiveness of structured teaching programme on Milk protein intolerance among mothers of top fed babies 1-3 years. Here the findings of the present study are compared and contrasted with other similar studies conducted in western and Indian settings.

However the conclusions drawn from this study should be seen under certain limitations. It is crucial to remember that the sample size was small and subjects were not fully matched due to constraints of time and other resources. The findings are discussed under the following headings.

- Findings related to demographic characteristics of sample.
- Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme
- Findings related to association of pre-test knowledge scores and selected demographic variables.

Findings related to demographic characteristics of sample:

Among 60 respondents majority 43.3 %(26) were 21-23 yrs old. 17(28.4%) were completed primary school education, 34(56.7%) of them were from nuclear family, 22(36.7%) were earning Rs.6001-9000/- and 23(38.3%) were getting information from Friends and relatives.

Comparison of pre test and post test knowledge scores to determine the effectiveness of structured teaching programme

In the present study, subjects knowledge scores increased after STP. The knowledge gain is as follows.

- Regarding General information, knowledge score increased from 2.28 to 3.16.
- Regarding Milk protein intolerance knowledge score from 1.54 to 1.90.
- Regarding Causes knowledge score from 1.44 to 2.95.
- Regarding Signs and symptoms knowledge score from 4.4 to 6.83.
- Regarding Complications knowledge score from 1.46 to 2.0.
- Regarding Prevention and management knowledge score from 6.45 to 10.45.
- Regarding Over all knowledge score from 17.56 to 29.56.

Findings related to association of pre-test knowledge scores and selected demographic variables.

Findings related that there is no significant association between pre-test knowledge scores and selected demographic variables like age, Educational status, Type of family, Income of family and source of information.

CONCLUSION

On the basis of the findings of the study "A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri", the below said conclusions were drawn. It brings out the limitations of the study picture; the implication are given on various aspects like Nursing practice, Nursing education, Nursing administration and Nursing research and also gives an insight to further studies.

The study shows that

1) The knowledge of mothers of top fed babies 1-3 years regarding milk protein intolerance was inadequate when assessed in pre-test.
2) The STP tested in this study was found to be effective in improving the knowledge of subjects.
3) STP is an effective teaching method in improving the knowledge of mothers of top fed babies 1-3 years.
4) The study proved that there is no significant association between pre-test scores and demographic variables like age, Educational status, Type of family, Income of family and source of information.

Nursing implications

The findings of the study have implications in the field of nursing practice, nursing education, nursing administration, and nursing research.

1. Nursing practice:

In hospital or community set up nurses play an important role in giving health education. In hospital settings child health nurse have ample of opportunities to educate the mothers of top fed babies 1-3 years regarding milk protein intolerance, encourage them to assess their risk and help them to develop prevention strategies, particularly giving more emphasis in home. For these activities nurses need to update their knowledge through regular in service education.

2. Nursing education:

Nursing education helps the students with adequate knowledge, skills, and attitude to fulfill their duties and responsibilities in the nursing field. Findings of the study can be used by the nurse educators to educate mothers of top fed babies 1-3 years, which help them to manage milk protein intolerance.

3. Nursing administration:

Nursing administrators should make public awareness on milk protein intolerance. In service education and continuing nursing education programmes to be initiated for nurses to update the knowledge on milk protein intolerance.

4. Nursing research:

The investigator found scarcity in research works conducted by Indian nurses on milk protein intolerance, therefore the findings in this study can be utilized by nursing researchers for future studies.

LIMITATIONS

The present study has the following limitations

1. The study was limited to only 60 samples.

2. The study does not have a control group.

3. The study was limited to mothers of top fed babies 1-3 years present in selected Hospital.
4. Sampling technique used was simple random sampling hence representativeness is increased.

RECOMMENDATIONS

1. The present study was conducted on a small sample, a more extensive study on large sample is recommended to arrive at generalization.
2. It would be of immense value to conduct a study in different settings like, community areas, schools and colleges etc.
3. A follow up study need to be conducted to find the effectiveness in terms of retention of knowledge and to reinforce health promotion behavior.
4. It is vital to conduct a comparative knowledge assessment among mothers and fathers, as fathers also will take care of children's.
5. Teaching and demonstration materials regarding milk protein intolerance can be demonstrated in hospitals, community health and primary health centers.
6. A special training centre for mothers has to be established in each hospital.
7. Health education regarding milk protein intolerance can be given to the public by,
   a) Talks
      i) voluntary organizations
      ii) Public talks
      iii) Radio talks
   b) Classes
      i) At schools and colleges

c) Articles in

i) Magazines

ii) News papers

d) Pamphlets to

i) Patients

ii) Public

e) Television programmes

8. Health authorities can conduct campaign to improve public awareness.

Health education is regarding milk protein intolerance campaign is very necessary for the parents. Fathers also need to understand the milk protein intolerance, so targeting of parents is important in milk protein intolerance campaign.

SUMMARY

The present study was undertaken "a study to assess the effectiveness of structured teaching programme on knowledge regarding milk protein intolerance among mothers of top fed babies 1-3 years in a selected hospital, madhugiri". The study aimed at accomplishing the following objectives.

1. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years before structured teaching programme.

2. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years after structured teaching programme.

3. To evaluate the effectiveness of structured teaching programme.

4. To determine the association of between knowledge on milk protein intolerance among mothers of top fed babies 1-3 years and selected variables.

The researcher formulated the following research hypothesis.

The mean post-test knowledge score of mothers of top fed babies 1-3 years after structured teaching programme will be significantly higher than their pre-test knowledge scores at ≤0.01 level of significance.

The conceptual framework used in the study was based on General System Model by Ludwig Von Bertanlanffy.

Review of literature was directed towards prevalence, prevention and management of mothers of top fed babies 1-3 years related to milk protein intolerance.

Quasi experimental single group pretest and post test design with evaluative approach was adopted for the study. A sample of 60 mothers of top fed babies 1-3 years present in selected Hospital, Madhugiri, was selected by using simple random sampling.

A structured questionnaire schedule was prepared and used for data collection, which consists of 2 parts. Part-I with 6 socio demographic data and Part-II with 30 items on various aspects of General information , Milk protein intolerance , Causes, Signs and symptoms , Complications , Prevention and management.

. Content validity of the tool was obtained on the basis of expert on the appropriateness of items in the tool. Reliability of the tool was established by Split half method by using Spearman Brown Prophecy formula and was found to be(r=0.82). A pilot study was conducted prior to the actual study in the J.S. Hospital, Madhugiri, setting for finding out the feasibility of administration of tool and study.

Final data was collected from 60 mothers of top fed babies 1-3 years present in a selected Government District hospital, Tumkur, 1st the pretest conducted by using questionnaire method then after few days STP conducted then after 7 days post test was conducted. The data were analyzed using Descriptive and inferential statistics.

Major findings of the study

- **Findings related to sample characteristics**
  - ✓ Majority of the subjects 43.3%(26) were 21-23 yrs old.
  - ✓ 17(28.4%) were completed primary school education.
  - ✓ 34(56.7%) of them were from nuclear family.
  - ✓ 22(36.7%) were earning Rs.6001-9000/-.
  - ✓ 23(38.3%) were getting information from Friends and relatives.

Findings related to assessment of knowledge regarding different areas of Milk protein intolerance

Participants gained increased mean scores in all areas of Milk protein intolerance after STP.

Introduction regarding General information- from 2.28 to 3.16.

Regarding Milk protein intolerance- from 1.54 to 1.90

- ✓ Regarding Causes – from 1.44 to 2.95
- ✓ Regarding Signs and symptoms - from 4.4 to 6.83
- ✓ Regarding Complications - from 1.46 to 2.0
- ✓ Regarding Prevention and management - from 6.45 to 10.45
- ✓ Overall knowledge score –from 17.56 to 29.56.

- **Findings related to effectiveness of STP.**
  - ✓ The mean pre-test score of 17.56 was increased to 29.56 after STP. This significant increase in post-test confirms that STP was effective.

- **Findings related to association of pre-test knowledge scores and selected variables.**

Findings reveal that there is no significant association between pre-test knowledge score and demographic variables age, Educational status, Type of family, Income of family and source of information.

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LIST OF ANNEXURES

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F	Certificate of content validity	
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K	Structured teaching programme (English)	
L	Tool used for the study(Kannada)	
M	Structured teaching programme (Kannada)	
N	List Of Content Validity Experts	

ANNEXURE

ANNEXURE-A

LETTER SEEKING PERMISSION FOR CONDUCTING PILOT STUDY

From

Ms. Padmashree A.R.
2nd year M.Sc nursing
Sri Raghavendra College of Nursing,
Madhugiri.

To

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.....
.....

Through

The Principal
Sri Raghavendra College of Nursing,
Madhugiri.

Subject: Seeking permission to conduct pilot study

Respected Sir/madam,

I am **Ms. Padmashree A.R**.a bonafide PG student of Sri Raghavendra College of Nursing affiliated to Rajiv Gandhi University of Health Sciences, Bangalore with a specialization

in Child Health Nursing. I have to conduct a pilot study as a part of my main research for the purpose of partial fulfilment of my course. My problem statement is **"A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"**

I request you to kindly give permission to conduct pilot study from 5-11-2012 to 15-11-2012. Thanking you,

Yours' faithfully

Place:

Date:

ANNEXURE-B

LETTER GRANTING PERMISSION TO CONDUCT PILOT STUDY

To,

Ms. Padmashree A.R.
2nd year M.Sc nursing
Sri Raghavendra College of Nursing,
Madhugiri.

From,

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.....
.....

Dear student,

As per your request forwarded through the principal Sri Raghavendra College of Nursing you are permitted to conduct the pilot study in J.S. Hospital, Madhugiri**,** as mentioned in your letter.

ANNEXURE-C

LETTER SEEKING PERMISSION FOR CONDUCTING MAIN STUDY

From

Ms. Padmashree A.R.
2nd year M.Sc nursing
Sri Raghavendra College of Nursing,
Madhugiri.

To

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.....
.....
.....
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Through

The Principal
Sri Raghavendra College of Nursing,
Madhugiri.

Subject: Seeking permission to conduct main study

Respected Sir/madam,

I am Ms. Padmashree A.R., a bonafide PG student of Sri Raghavendra College of Nursing affiliated to Rajiv Gandhi University of Health Sciences, Bangalore with a specialization in Child Health Nursing. I have to conduct a main study as a part of my main research for the purpose of partial fulfilment of my course. My problem statement is "A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"

I request you to kindly give permission to conduct main study from 1-12-2012 to 31-12-2012. Thanking you,

Yours' faithfully

Place:

Date:

ANNEXURE-D

LETTER GRANTING PERMISSION TO CONDUCT MAIN STUDY

To,

Ms. Padmashree A.R.

2nd year M.Sc nursing

Sri Raghavendra College of Nursing,

Madhugiri.

From,

.....

.....

.....

.....

Dear student,

As per your request forwarded through the principal, Sri Raghavendra College of Nursing you are permitted to conduct the main study in as mentioned in your letter.

ANNEXURE-E

LETTER SEEKING EXPERTS OPINION AND SUGGESTIONS FOR THE CONTENT VALIDITY OF THE TOOL

From,

Ms. Padmashree A.R.

2nd year M.Sc nursing

Sri Raghavendra College of Nursing,

Madhugiri.

To

Through

The Principal,

Sri Raghavendra College of Nursing,

Madhugiri.

Respected Sir/Madam,

Sub: Seeking expert opinion and suggestions on content validity of the tool

I am, **Ms. Padmashree A.R.**.II Year M.Sc. Nursing Student of Sri Raghavendra College of Nursing, humbly request you to go through the tool which is to be used for data collection of my dissertation to be submitted to Rajiv Gandhi University of Health Science, Bangalore, Karnataka, in partial fulfillment of my University requirements for the award of the degree of Masters of Science in Child Health Nursing.

The problem statement is **"A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"**

OBJECTIVES OF THE STUDY

1. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years before structured teaching programme.

2. To assess the knowledge on milk protein intolerance among mothers of top fed babies 1-3 years after structured teaching programme.

3. To evaluate the effectiveness of structured teaching programme.

4. To determine the association of between knowledge on milk protein intolerance among mothers of top fed babies 1-3 years and selected variables.

Here with I am enclosing a copy of:

a) Criteria check list for evaluation
b) Structured questionnaire and STP
c) Correct responses and scoring key
d) Content validity certificate
e) Blue Print

With regard to this I request you to give your valuable suggestions regarding the appropriateness of the tool, which I have enclosed. Kindly give your expert comments on the tool by using the evaluation criteria, check list enclosed for modification of the tool.

I also request you to kindly sign the certificate stating that the tool has been validated. Your kind co-operation and your expert judgment will be highly appreciated.

Thanking you,

Date: Yours faithfully,

Place: **Madhugiri.** **Ms. Padmashree A.R.**

ANNEXURE-F

CERTIFICATE OF CONTENT VALIDITY

This is to certify that the tool developed by **Ms. Padmashree A.R.** II year M.Sc. Nursing student of Sri Raghavendra College of Nursing, undertaking a research on **"A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"** has been validated by me.

Signature:

Name:

Designation:

Date:

Seal

ANNEXURE-G

CERTIFICATE OF EDITING

This is to certify that dissertation done by **Ms. Padmashree A.R** Second Year M.Sc. nursing of Sri Raghavendra College of Nursing in her study titled **"A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Milk Protein Intolerance Among Mothers Of Top Fed Babies 1-3 Years In A Selected Hospital, Madhugiri"** has been edited by me.

Signature of the Editor

Date:

Place: **Madhugiri.**

ANNEXURE-H

Table 12: BLUE PRINT OF STRUCTERED INTERVIEW SCHEDULE ON MILK PROTEIN INTOLERANCE

S.No	Content	Knowledge	Comprehension	Application	No of items	Percentage
1	**General information**	1,2,4,5,6,10	3	7,8,9	10	**33.33 %**
2	**Milk Protein Intolerance**	14	13,12	11,15	5	**16.66 %**
3	**Causes**	6	17	18,19	4	**13.34%**
4	**Signs and symptoms**	20	-	21,22,23	4	**13.34%**
5	**Complications**	26	24,25	27,28,29, 30	7	**23.33%**
6	**Total**	**10**	**6**	**14**	**30**	**100**

ANNEXURE-I

STRUCTURED INTERVIEW SCHEDULE IN ENGLISH

A tool has been constructed for data collection and it consists of 2 parts.

Section A: Deals with demographic data.

Section B: Deals with knowledge regarding Milk protein intolerance.

Section A: Deals with demographic data

1. Age (years)
   a. 18-20yrs.
   b. 21-23yrs.
   c. 24yrs and above

2. Educational status
   a. Illiterate.
   b. Primary school.

c. High school
d. Graduate.
e. Post Graduate and above.

4. Type of family.
a. Nuclear family.
b. Joint family.

5. Income of family.
a. Rs.1000-3000/-
b. Rs.3001-6000/-
c. Rs.6001-9000/-
d. Rs. 9001 and above.

6. Source of information
a. Reading books & journals
b. Mass media
c. Friends and relatives
d. Neighbors.

Section B: Deals with knowledge regarding Milk protein intolerance

General information

1. **What is a Milk?**
   - **a. It is a white liquid produced by mammary glands of mammals.** **[ ]**
   - b. It is a yellow colored fluid. **[ ]**
   - c. It is a colourless watery liquid. **[ ]**
   - d. It is a odourless pale white colour liquid. **[ ]**

2. **What is lactose?**
   - a. It is a monosaccharide. **[ ]**
   - b. **It is a disaccharide.** **[ ]**
   - **c.** It is a polysaccharide. **[ ]**
   - d. It is a heterosaccharide. **[ ]**

3. **What is Breast feeding?**
   - a. It is a feeding of infant with solid food. **[ ]**
   - **b.** It is a feeding of infant with cow milk. **[ ]**
   - c. **It is a feeding of infant or young child with breast milk.** **[ ]**
   - d. It is a feeding of infant with skimmed milk. **[ ]**

4. **What is colostrum?**
   - **a. It is first milk secreted by the mammary glands.** **[ ]**
   - **b.** It is a white liquid secreted by mammary glands. **[ ]**
   - **c.** It is milk produced during pregnancy. **[ ]**
   - **d.** It is a thin white coloured liquid. **[ ]**

Milk protein intolerance

5. **What is milk protein intolerance?**
   - **a.** It is a disease condition of brain. **[ ]**
   - b. It is a disease condition of skin. **[ ]**
   - c. It is disease condition of respiratory tract **[ ]**
   - d. **It is a disease condition in which there sensitive to milk proteins** **[ ]**

6. **Which of the following system affected in milk protein intolerance?**
   - a. **Gastro intestinal system.** **[ ]**
   - **b.** Urinary system. **[ ]**
   - c. Cardiac system. **[ ]**
   - d. Skin system. **[ ]**

Causes

7. **What is the main cause of milk protein intolerance?**
   - **a.** Unhealthy prepared milk. **[ ]**
   - b. **Family history.** **[ ]**
   - c. Diseases of respiratory tract. **[ ]**
   - d. Asthama. **[ ]**

8. **Which of the following is main risk factor for milk protein intolerance?**
   - a. Late feeding. **[ ]**
   - b. Bottle feeding. **[ ]**
   - **c. Breast feeding.** **[ ]**
   - d. Low socioeconomic status. **[ ]**

9. **Which Environmental factor is risk factor for Milk protein intolerance?**
   - a. **Parental smoking.** **[ ]**
   - b. Polluted water. **[ ]**
   - c. Polluted food. **[ ]**
   - **d.** Noise pollution. **[ ]**

Signs and Symptoms

10. **Which is the immediate symptom of Milk protein intolerance?**
    - a. Skin Rashes. **[ ]**
    - **b.** Sweating. **[ ]**
    - c. Cough. **[ ]**
    - d. **Vomiting.** **[ ]**

11. **Which are common symptoms in Gastrointestinal System?**
    - **a.** Throat pain and running nose. **[ ]**
    - b. Redness and swelling of eyes. **[ ]**
    - c. **Diarrhea and blood in stool.** **[ ]**

d. Urine block and burning micturation . [ ]

12. Which skin problem will persist in milk protein intolerance?

a. Redness of skin. [ ]
b. **Swelling of eye lids.** [ ]
c. Skin Rashes. [ ]
d. Swelling of legs. [ ]

13. What respiratory problem will come in milk protein energy intolerance?

a. Chronic cough. [ ]
b. Common cold. [ ]
c. Abdominal pain. [ ]
d. Diarrhea. [ ]

14. Which is the emergency symptom of milk protein energy intolerance?

a. Dizziness. [ ]
b. Has difficulty breathing. [ ]
c. Shivering. [ ]
d. Increased body temperature. [ ]

15. What is the identification symptom of milk protein intolerance in neck region?

a. Swelling. [ ]
b. Redness. [ ]
c. Pain. [ ]
d. Additional growth. [ ]

16. What type of stool we can see in milk protein intolerance for immediate care?

a. Watery stools. [ ]
b. Hard stools. [ ]
c. Blood in stools. [ ]
d. Worms in stools. [ ]

17. What is the colour of skin in milk protein intolerance which require emergency care?

a. Blue colour. [ ]
b. Extremly Pale colour. [ ]
c. Red colour. [ ]
d. Normal skin colour. [ ]

Complications

18. Which are the other food materials cause additional allergy for those with milk Protein intolerance?

a. Eggs, chocolates, biscuits [ ]
b. Eggs, chocolates, milk, fruits. [ ]
c. Milk, pollens, biscuits. [ ]
d. Eggs, soy and peanuts. [ ]

19. What complication will arise milk protein intolerance?

a. **Hey fever.** [ ]
b. Vomiting. [ ]
c. Skin rashes. [ ]
d. Ear problems. [ ]

Prevention & Management

20. What is the common preventive measure of milk protein intolerance?

a. **Avoidance of milk and milk products that cause allergy.** [ ]
b. Avoidance of food. [ ]
c. Breast feeding. [ ]
d. Tube feeding. [ ]

21. Which is the best method to prevent Milk protein intolerance?

a. Feeding an infant with breast milk. [ ]
b. Feeding an infant with 100% whey protein. [ ]
c. Feeding an infant with Eggs. [ ]
d. Feeding an infant with soy and pea nuts. [ ]

22. What is the alternative measure other than breast milk to prevent milk protein intolerance?

a. Breast milk. [ ]
b. Cow's milk. [ ]
c. Hydrolysed casein. [ ]
d. Dairy products. [ ]

23. What mother can take preventive measure for milk protein intolerance?

a. Taking less protein diet. [ ]
b. Avoidance of breast milk. [ ]
c. **Avoid intake of excess dairy products.** [ ]
d. Taking less sugar containing diet. [ ]

24. What type of diet is best for high-risk woman during pregnancy?

a. Antigen avoidance diet. [ ]
b. Taking milk containing diet. [ ]
c. Taking fat containing diet. [ ]
d. Taking protein containing diet. [ ]

25. Which type of food can support baby along with breast feeding to manage milk protein intolerance?

a. **Partially hydrolyzed protein.** [ ]
b. Moderately hydrolyzed protein. [ ]
c. Un hydrolyzed protein. [ ]
d. Protein. [ ]

26. What mother has to avoid in cow milk protein intolerance?

a. Breast milk. [ ]
b. Milk. [ ]
c. Cow milk. [ ]
d. Skimmed milk. [ ]

27. Which formula will manage milk protein intolerance instead of hydrolyzed protein formula?

a. Fatty acid formula. [ ]
b. Essential fatty acid formula. [ ]
c. Non amino acid formula. [ ]
d. **Amino acid formula.** [ ]

28. Which is alternative formula for milk protein intolerance?

a. Soy protein based formula. [ ]
b. Milk based formula. [ ]
c. Protein based formula. [ ]
d. Only Soy based formula. [ ]

29. How soya formula helps to prevent milk protein intolerance?

a. More antigenic [ ]
b. Less antigenic. [ ]
c. More immunity. [ ]
d. Less immunity. [ ]

30. What type of supplementation can effective in management of milk protein intolerance?

a. Vitamin supplementation. [ ]
b. **Probiotic supplementation.** [ ]
c. Multi vitamin supplemenation. [ ]
d. Iron supplementation. [ ]

ANNEXURE-J

SCORING KEY

SL NO	CORRECT RESPONSE	SCORE
1	a	1
2	b	1
3	c	1
4	a	1
5	d	1
6	a	1
7	b	1
8	c	1
9	a	1
10	d	1
11	c	1
12	b	1
13	a	1
14	b	1
15	a	1
16	c	1
17	b	1
18	d	1
19	a	1
20	a	1
21	b	1
22	c	1
23	c	1
24	a	1
25	a	1
26	c	1
27	d	1
28	a	1
29	a	1
30	b	1

ANNEXURE-K

STRUCTURED TEACHING PROGRAMME

Student teacher	:	Ms. PADMASHREE A.R.
Topic	:	Milk Protein Intolerance
Group	:	Mothers of top fed babies 1-3 years
Duration	:	40 minutes
Teaching aids	:	Flash cards, charts
Medium of teaching	:	English
Method of teaching	:	Lecture cum discussion

General objectives:

Mothers possess basic knowledge on Milk Protein Intolerance and have an idea about the milk and its consequences.

Specific objectives:

- introduces the topic.
- enumerates the Milk Protein Intolerance
- discusses the causes of Milk Protein Intolerance
- enumerates the signs and symptoms of Milk Protein Intolerance.
- explians the complications
- explains the prevention
- explains the management.

Sl. No.	Time	Specific objectives	Content	Teacher Activity	Learners activity	AV aids	Evaluation
1.	3mts	Introduce the topic	**Introduction :** Milk is a white liquid produced by the mammary glands of mammals. Early-lactation milk contains colostrum, which carries the mother's antibodies to the baby and can reduce the risk of many diseases in the baby. Milk is an important drink with many nutrients. Lactose, the disaccharide sugar component of all milk, must be cleaved in the small intestine by the enzyme lactase in order for its constituents, galactose and glucose, to be absorbed. The production of the enzyme lactase declines significantly after weaning in all mammals. Consequently, many humans become unable to digest lactose properly as they mature.	Teacher introduces.			

2. 3.	3 mts 15 mts	Enumerate the Milk protein intolerance. discusses the causes of Milk protein intolerance.	**Definition:** "Milk protein intolerance is a condition where the gut of younger children, specifically infants, is sensitive to milk proteins," "The result is often an injury to the gut that causes symptoms ranging from diarrhea to more frequent stools to blood in the stools." **Causes:** 1. **Family history of atopy:** A positive family history of atopy — usually defined as the occurrence of asthma, atopic dermatitis or allergic rhinitis in one or more first-degree relatives. 2. **Early formula feeding:** Early exposure to Cow's milk has been incriminated as an important factor in the development of cow's milk allergy. 3. **Breast feeding**: Breast-feeding may reduce the incidence of food allergy as well as risk of other atopic diseases. 4. **Immune factors in breast milk:** Human milk	Explain the Milk protein intolerance. discusses the causes of Milk Protein Intolerance	Listening Group listens and asks doubts	Flash card on Milk protein intolerance. Flash cards	What is Milk protein intolerance.? What are the causes of Milk protein intolerance.?

4.	5mts	Enumerates the Signs and Symptoms	contains numerous specific and non-specific defence factors and digestive enzymes which compensate for the immaturity of the gastrointestinal tract and the immune system of newborn infants. 5. **Other environmental factors:** Exposure to parental smoking increased the risk of food intolerance. **Signs and Symptoms:** Milk allergy symptoms, which differ from person to person, occur a few minutes to a few hours after drinking milk or eating milk products. Immediately after consuming milk, signs and symptoms of a milk allergy might include: Hives Wheezing Vomiting **GI tract:** ➢ Frequent regurgitation, ➢ vomiting, ➢ diarrhea, ➢ constipation,	Enumerates the Signs and Symptoms of Milk protein intolerance.	Group listens and asks doubts.	Flash card on Signs and Symptoms of Milk protein intolerance. .	What are the Signs and Symptoms of Milk protein intolerance.?

			➢ blood in stool, ➢ iron deficiency anemia **Skin:** ➢ Atopic dermatitis, ➢ urticaria not linked to infections or medication, ➢ swelling of lips or eyelids. **Respiratory tract (not related to RTI):** ➢ Runny nose, ➢ otitis media, ➢ chronic cough, ➢ wheezing **General:** ➢ Persistent distress, ➢ irritability or colic, at least 3 days/week for >3 weeks **Emergency symptoms required immediate treatment:** ➢ Has difficulty breathing ➢ Turns blue ➢ Is extremely pale or weak ➢ Has generalized hives ➢ Develops swelling in the head and neck region				

5.	3 mts	Explains the complications of Milk protein intolerance.	➢ Has bloody diarrhea **Complications:** Children who are allergic to milk are much more likely to develop certain other health problems, including: **Allergies to other foods** — such as eggs, soy, peanuts or even beef **Hay fever** — a reaction to pet dander, dust mites, grass pollen and other substances.	Explains the complications of Milk protein intolerance.	Listening	Flash card on complications of Milk protein intolerance.	What are the complications of Milk protein intolerance.?
6.	4mts	Explains the Prevention of Milk protein intolerance.	**Prevention:** There's no sure way to prevent a food allergy, but you can prevent signs and symptoms by avoiding the food that causes them. If you know you or your child is allergic to milk, the only sure way to avoid an allergic reaction is to avoid milk products. Know what you or your child is eating and drinking. Be sure to read food labels carefully. Look for casein, a milk derivative, which can be found in some unexpected places, such as in some canned tuna or other meats. Ask questions about ingredients when ordering in	Explains the Prevention of Milk protein intolerance	Listening	Flash card on Prevention of Milk protein intolerance	What are the Prevention of Milk protein intolerance?

			restaurants. **Breast-feeding** is the best source of nutrition for your child. Breast-feeding for at least the first four to six months of life if possible is recommended, especially if your infant is at high risk of developing a milk allergy. Avoidance is the mainstay of treatment and breastfeeding is the optimal choice. Since antigenically intact cow's milk protein can pass into the breast milk, the mother should avoid excessive intake of milk products herself while breast feeding. Alternatives to breast milk such as soy formulas or hydrolysed casein or whey formulas may be used. Prescription of an antigen avoidance diet to a high-risk woman during pregnancy is unlikely to reduce substantially her child's risk of Milk protein intolerance. **Protein composition:** A 2003 meta-analysis conducted by the Cochrane Collaboration indicated that reducing the risk of common allergic manifestations in infancy is possible by feeding either 100% whey protein, partially				

7.	6 min	Explain the management of Milk protein intolerance.	hydrolyzed formula or extensively hydrolyzed casein formula instead of intact cow's milk protein formula.8 As noted earlier in this article, the GINI study found that feeding a hydrolyzed formula – partially hydrolyzed whey or extensively hydrolyzed casein – vs. intact cow's milk formula or extensively hydrolyzed whey formula during the first 4 months of life reduced the risk of allergic manifestations during the first year of life. **Management:** **Infants at high risk of atopy:** For infants at high risk of developing atopy, evidence has shown that exclusive breastfeeding for at least 4 months or supplementing breastfeeding with an infant formula containing partially hydrolyzed or extensively hydrolyzed protein decreases the risk of atopic dermatitis compared with breastfeeding supplemented with standard cow's milk protein infant formula. **Infants with confirmed CMPA:** For exclusively breastfed infants with confirmed CMPA, it has traditionally been recommended that the mother avoid cow's milk for the duration of breastfeeding; Amino acid-based formulas contain protein in its simplest form, and may be recommended if the infant's	Explains the management of Milk protein intolerance	Listening	Flash card on management of Milk protein intolerance	What are the management of Milk protein intolerance?

			condition doesn't improve with a hydrolyzed formula. Soy protein-based formulas are frequently recommended as an alternative formula. However, soybean protein ranks second as an antigen in the first months of life, particularly in infants with primary cow's milk intolerance who are placed on a soy formula. **Probiotic supplementation:** Evidence shows that the intestinal flora in formula-fed infants is influenced by the protein composition of the formula used. A higher proportion of bifidobacteria and lactobacilli has been found in infants fed with whey formula vs. casein formula. Since it is known that oral probiotic supplementation can reduce the prevalence of atopic disease by stabilizing intestinal integrity, increasing numbers of specific intestinal flora and reducing intestinal inflammation, a formula that increases the number of these bacteria could offer benefits in reducing the risk of allergy in infants.				

ANNEXURE-L

TOOL IN KANNADA

ಪದ್ಮಶೀ.ಎ.ಆರ್. ಆದ ನಾನು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಬಗ್ಗೆ ನಿಮ್ಮಿಂದ ಕೆಲವು ವಿಷಯಗಳನ್ನು ಸಂಗ್ರಹಿಸುತ್ತೇನೆ. ಆದ್ದರಿಂದ ನೀವುಗಳು ಓದಿ ಕೆಳಗೆ–ಕೊಟ್ಟಿರುವ ಪ್ರಶ್ನೆಗಳನ್ನು ಖಾಲಿ ಜಾಗದಲ್ಲಿ ಭರ್ತಿ ಮಾಡಿರಿ. ನಿಮ್ಮ ವಿಷಯವನ್ನು ಗೌಪ್ಯವಾಗಿ ಇಡಲಾಗುವುದು.

ಸಾಮಾಜಿಕ ಹಾಗೂ ಭೌಗೋಳಿಕ ಪ್ರಶ್ನವಳಿ

1. ತಾಯಂದಿರ ವಯಸ್ಸು (ವರ್ಷಗಳಲ್ಲಿ)
   a) 18–20 ವರ್ಷಗಳು
   b) 21–23 ವರ್ಷಗಳು
   c) 24 ವರ್ಷಗಲು ಮತ್ತು ಮೇಲ್ಪಟ್ಟು
2. ವಿದ್ಯಾರ್ಹತೆ
   a) ಜಾಪಚಾರಿಕ ಶಿಕ್ಷನವಿಲ್ಲ
   b) ಪ್ರಾಥಮಿಕ ಶಾಲೆ
   c) ಪ್ರೌಢಶಾಲ ಶಿಕ್ಷಣ
   d) ಪದವಿ
   e) ಪದವಿಕ್ಕಿಂತ ಮೇಲ್ಪಟ್ಟು
3. ಕುಟುಂಬ ವಿಧ:–
   a) ಚಿಕ್ಕ ಕುಟುಂಬ
   b) ದೊಡ್ಡ ಕುಟುಂಬ
4. ಪ್ರತಿ ತಿಂಗಳ ಆದಾಯ ರೂಪಾಯಿಗಳಲ್ಲಿ
   a) 1000–3000 ರೂಪಾಯಿಗಳು
   b) 3001–6000 ರೂಪಾಯಿಗಳು
   c) 6001–9000 ರೂಪಾಯಿಗಳು
   d) 9001 1 ರೂಪಾಯಿ ಮತ್ತು ಮೇಲ್ಪಟ್ಟು

5. ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಬಗ್ಗೆ ಮಾಹಿತಿಗಳಿಸುವ ಮಾರ್ಗ

a) ಪುಸ್ತಕಗಳು

b) ಮಾಧ್ಯಮ

c) ಸ್ನೇಹಿತರು ಮತ್ತು ಕುಟುಂಬವರು

d) ಪಕ್ಕದ ಮನೆಯವರು

ವ್ಯಾಖ್ಯಾನಕ 2 :– ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಸಂಬಂದಿಸಿದ ಪ್ರಶ್ನಾವಳಿ ಸಾಮ್ಯಾನ್ಯ ಪ್ರಶ್ನೆಗಳು

1) ಹಾಲು ಎಂದರೇನು?

a) ಜೀವ ಸಂಕುಲದಿಂದ ಬರುವ ಬಿಳಿದಾದ ದ್ರವ

b) ಇದು ಒಂದು ಹಳದಿ ಬಣ್ಣದ ದ್ರವ

c) ಇದು ಒಂದು ಬಣ್ಣ ಇಲ್ಲದ ದ್ರವ

d) ಇದು ವಾಸನೆ ಇಲ್ಲದ ಬಿಳಿ ದ್ರವ.

2) ಲ್ಯಾಕ್ಟೋಸ್ ಎಂದರೇನು ?

a) ಮೋನೋ ಸ್ಯಾಕರೈಡ್

b) ಡೈ ಸ್ಯಾಕರೈಡ್

c) ಪಾಲಿ ಸ್ಯಾಕರೈಡ್

d) ಹೆಬಿರೋಸ್ಯಾಕರೈಡ್

3) ಎದೆ ಹಾಲು ಉಣಿಸುವಿಕೆ ಎಂದರೇನು ?

a) ಶಿಶುವಿಗೆ ಗಟ್ಟಿಪದಾರ್ಥ ಉಣಿಸುವುದು

b) ಶಿಶುವಿಗೆ ಹಸುವಿನ ಹಾಲು ಉಣಿಸುವುದು

c) ಶಿಶುವಿಗೆ ತಾಯಿಯ ಎದೆ ಹಾಲು ಉಣಿಸುವುದು

d) ಶಿಶುವಿಗೆ ಹೆಚ್ಚು ಕೆನೆಬರಿತ ಹಾಲು ಉಣಿಸುವುದು

4) ಕೊಲಸ್ಟ್ರಮ್ ಎಂದರೇನು ?

a) ತಾಯಿಯ ಎದೆಯಿಂದ ಬರುವ ಮೊದಲ ಹಾಲು

b) ಮೊಲೆಯಿಂದ ಬರುವಂತಹ ಒಂದು ಸಾಮಾನ್ಯ ಹಾಲು

c) ತಾಯಿ ಗರ್ಭವತಿ ಆದಾಗ ಬರುವಂತಹ ಹಾಲು

d) ಬಣ್ಣವಿಲ್ಲದ ಹಾಲು.

ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ

5) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಎಂದರೇನು ?

a) ಇದು ಒಂದು ಮೆದುಳಿಗೆ ಸಂಬಂದಪಟ್ಟ ರೋಗ

b) ಇದು ಚರ್ಮಕ್ಕೆ ಸಂಬಂದಪಟ್ಟ ರೋಗ

c) ಇದು ಉಸಿರಾಟದ ತೊಂದರೆ

d) ಇದು ಹಾಲಿನ ಪ್ರೋಟೀನ್‌ಗೆ ದೇಹ ಸೂಕ್ತವಾಗುವಿಕೆ

6) ದೇಹದ ಯಾವ ಭಾಗ ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಬಳಗಾಗುತ್ತದೆ?

a) ಅನ್ನನಾಳ

b) ಮೂತ್ರಕೋಶ

c) ಹೃದಯ

d) ಚರ್ಮ

ಕಾರಣಗಳು

7) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಮುಖ್ಯ ಕಾರಣ ಯಾವುದು?

a) ಸರಿಯಾಗಿ ತಯಾರಿಸದ ಹಾಲು

b) ವಂಶ ಪಾರಂಪರ್ಯ

c) ಉಸಿರಾಟದ ತೊಂದರೆ

d) ಅಸ್ತಮಾ

8) ಯಾವ ಅಂಶ ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಒಳಪಡುವ ಸಾಧ್ಯವಿದೆ?

a) ತಡವಾಗಿ ಹಾಲುಣಿಸುವಿಕೆ

b) ಶೀಶದಲ್ಲಿ ಹಾಲುಣಿಸುವಿಕೆ

c) ಎದೆ ಹಾಲುಣಿಸುವಿಕೆ

d) ಕಡಿಮೆ ದುಡ್ಡುಳ್ಳವರಿಗೆ

9) ಪರಿಸರದ ಯಾವ ಅಂಶ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಆಸ್ಪದ ಕೊಡುತ್ತದೆ?

a) ಪೋಷಕರು ಸೀಗರೇಟ್ ಸೇವನೆ

b) ಕೊಳೆಯಾದ ನೀರು

c) ಕೊಳೆಯಾದ ಆಹಾರ

ಲಕ್ಷಣಗಳು

10) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ತಕ್ಷಣ ಲಕ್ಷಣ ಯಾವುದು?

a) ಚರ್ಮದಲ್ಲಿ ಗುಳ್ಳೆ

b) ಬೆವರುವಿಕೆ

c) ಕೆಮ್ಮು

d) ವಾಂತಿ

11) ಹಾಲು ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ಅನ್ನನಾಳಿನಲ್ಲಿ ಕಂಡುಬರುವ ಲಕ್ಷಣ ಯಾವುದು?

a) ಗಂಟಲು ನೋವು ಮತ್ತು ಮೂಗು ಸೋರುವಿಕೆ

b) ಕಣ್ಣು ಕೆಂಪಾಗುವುದು ಮತ್ತು ಊದುವುದು

c) ಭೇದಿ ಮತ್ತು ಮಲದಲ್ಲಿ ರಕ್ತ

d) ಮೂತ್ರ ಬದ್ದತೆ ಮತ್ತು ಉರಿ ಮೂತ್ರ

12) ಹಾಲು ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ಚರ್ಮದ ಕಾಣಿಸಿಕೊಳ್ಳುವ ಲಕ್ಷಣ ಯಾವುದು?

a) ಚರ್ಮದ ಬಣ್ಣ ಕೆಂಪಾಗುವುದು

b) ಕಣ್ಣು ಊದಿಕೊಳ್ಳುವುದು

c) ಚರ್ಮದಲ್ಲಿ ಗುಳ್ಳೆ ಆಗುವುದು

d) ಕಾಲು ಊದಿಕೊಳ್ಳುವುದು

13) ಹಾಲು ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ಉಸಿರಾಟದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳುವ ಲಕ್ಷಣ ಯಾವುದು?

a) ತೀವ್ರ ಕೆಮ್ಮು

b) ನೆಗಡಿ

c) ಹೊಟ್ಟೆ ನೋವು

d) ಭೇವಿ

14) ಹಾಲು ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ತೀವ್ರತರಹದ ಲಕ್ಷಣ ಯಾವುದು?

a) ತಲೆಸುತ್ತು

b) ಉಸಿರಾಡಲು ಕಷ್ಟವಾಗುವುದು

c) ಚಳಿಯಾಗುವುದು

d) ದೇಹದ ಉಷ್ಣತೆ ಹೆಚ್ಚಾಗುವುದು

15) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ಕತ್ತಿನಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳುವ ಲಕ್ಷಣ ಯಾವುದು ?

ಚಿ) ಊದಿಕೊಳ್ಳವುದು

ಛ) ಕೆಂಪಾಗುವುದು

ಛಿ) ನೋವು

ಜ) ಅಧಿಕ ಬೆಳವಣಿಗೆ

16) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಆದಲ್ಲಿ ಮಲ ಯಾವ ತರಹದ್ದಾಗಿರುತ್ತದೆ ?

a) ನೀರಿನಂತಹ ಮಲ

b) ಗಟ್ಟಿ ಮಲ

c) ಮಲದಲ್ಲಿ ರಕ್ತ

d) ಮಲದಲ್ಲಿ ಜಂತು

17) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಆದಲ್ಲಿ ಚರ್ಮದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳುವ ತೀವ್ರ ಲಕ್ಷಣ ಯಾವುದು?

a) ನೀಲಿ ಬಣ್ಣಕ್ಕೆ ತಿರುಗುವುದು.

b) ತಿಳಿ ಬಣ್ಣಕ್ಕೆ ತಿರುಗುವುದು.

c) ಕೆಂಪು ಬಣ್ಣಕ್ಕೆ ತಿರುಗುವುದು

d) ಸಾಮಾನ್ಯ ಬಣ್ಣದಲ್ಲಿರುವುದು.

18) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಬೇರೆ ಯಾವ ತರಹದ ಆಹಾರ ಪದಾರ್ಥಗಳು ಕೂಡ ಅಲರ್ಜಿ ಆಗುವ ಸಾಧ್ಯತೆ ಇದೆ ?

a) ಮೊಟ್ಟೆ, ಚಾಕಲೇಟ್ಸ್, ಬಿಸ್ಕೆಟ್ಸ್

b) ಮೊಟ್ಟೆ , ಚಾಕಲೇಟ್ಸ್, ಹಾಲು, ಹಣ್ಣು

c) ಹಾಲು, ಪೋಲನ್, ಬಿಸ್ಕೆಟ್ಸ್

d) ಮೊಟ್ಟೆ, ಸೋಯ, ಪೀ–ಹಣ್ಣು

19) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯಿಂದ ಯಾವ ತೊಡಕು ಉಂಟಾಗುವುದು ?

a) ಜ್ವರ

b) ವಾಂತಿ

c) ಚರ್ಮದ ತೊಂದರೆ

d) ಕಿವಿ ತೊಂದರೆ.

ತಡೆಗಟ್ಟುವಿಕೆ ಮತ್ತು ಕಾರ್ಯ ನಿರ್ವಹಣೆ

20) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಸಾಮಾನ್ಯ ತಡೆಗಟ್ಟು ವಿಕೆ ಯಾವುದು?

a) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಆಗುವಂತಹ ಹಾಲಿನ ಪದಾರ್ಥಗಳನ್ನು ಸೇವಿಸವಿರುವುದು

b) ಊಟ ಮಾಡುವುದು ಬಿಡುವುದು

c) ಎದೆ ಹಾಲು ಉಣಿಸುವಿಕೆ

d) ಬಾಟಲಿನ ಹಾಲು ಉಣಿಸುವಿಕೆ

21) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಗಟ್ಟಲು ಉತ್ತವ ವಿಧಾನ ಯಾವುದು?

a) ಮಗುವಿಗೆ ಎದೆ ಹಾಲು ಉಣಿಸುವುದು

b) ವೇ–ಪ್ರೋಟೀನ್‌ನ್ನು ಮಗುವಿಗೆ ಕೊಡುವುದು

c) ಮೊಟ್ಟೆಯನ್ನು ಮಗುವಿಗೆ ಕೊಡುವುದು

d) ಮಗುವಿಗೆ ಸೋಯೊ ಮತ್ತು ಪೀ–ಹಣ್ಣು ಕೊಡುವುದು

22) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯಲು ಎದೆ ಹಾಲು ಬಿಟ್ಟು ಉತ್ತಮ ಮಾರ್ಗ ಯಾವುದು?

a) ಎದೆ ಹಾಲು ಉಣಿಸುವುದು

b) ಆಕಲು ಹಾಲು ಉಣಿಸುವುದು

c) ಹೈಡ್ರೋಲೈಸ್‌ಡ್ ಕೆಸಿನ್ ಹಾಲು ಉಣಿಸುವುದು

d) ಡೈರಿ ಆಹಾರ ಪದಾರ್ಥಗಳು

23) ತಾಯಿಯು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯಲು ಯಾವ ಕ್ರಮಕೈಗೊಳ್ಳಬೇಕು?

a) ಕಡಿಮೆ ಪ್ರೋಟೀನ್ ಆಹಾರ ಕೊಡಬೇಕು

b) ಎದೆ ಹಾಲು ಉಣಿಸುವುದನ್ನು ತಪ್ಪಿಸುವುದು

c) ಡೈರಿ ಆಹಾರ ಪದಾರ್ಥಗಳನ್ನು ಉಣಿಸದಿರುವುದು

d) ಕಡಿಮೆ ಸಕ್ಕರೆ ಅಂಶ ಆಹರ ಸೇವಿಸುವುದು

24) ಗರ್ಭಾವಸ್ಥೆಯಲ್ಲೇ ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯುವುದು ಹೇಗೆ?

a) ಆ್ಯಂಟಿಜನ್ ಇಲ್ಲದ ಆಹಾರ ಸೇವಿಸುವುದು

b) ಹಾಲಿನ ಆಹಾರ ಸೇವಿಸುವುದು

c) ಕೊಬ್ಬಿನಾಂಶ ಇರುವ ಆಹಾರ ಸೇವಿಸುವುದು

d) ಪ್ರೋಟಿನ್ ಇರುವ ಆಹಾರ ಸೇವಿಸುವುದು

25) ಎದೆ ಹಾಲಿನ ಜೊತೆಗೆ ಬೇರೆ ಯಾವ ಆಹಾರ ಪದಾರ್ಥ ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಗಟ್ಟುಬಹುದು?

a) ಕಡಿಮೆ ಹೈಡ್ರೋಲೈಸ್ ಮಾಡಿದ ಪ್ರೋಟೀನ್

b) ಸಾಧಾರಣ ಹೈಡ್ರೋಲೈಸ್ ಮಾಡಿದ ಪ್ರೋಟೀನ್

c) ಹೈಡ್ರೋಲೈಸ್ ಮಾಡದ ಪ್ರೋಟೀನ್

d) ಪ್ರೋಟೀನ್

26) ಹಸುವಿನ ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ತಡೆಯಲು ತಾಯಿ ಏನು ಮಾಡಬಹುದು?

a) ಎದೆ ಹಾಲು ಕೊಡುವುದು

b) ಹಾಲ ಕೊಡುವುದು

c) ಹಸುವಿನ ಹಾಲು ಕೊಡುವುದು

d) ಹೆಚ್ಚು ಕೊಬ್ಬಿನಾಂಶ ಹಾಲು ಕೊಡುವುದು

27) ಹೈಡ್ರೋಲೈಸ್ ಪ್ರೋಟೀನ್ ಅಲ್ಲದೆ ಬೇರೆ ಯಾವುದು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಗಟ್ಟುವುದು?

a) ಕೊಬ್ಬಿನಾಂಶದ ಆಹಾರ

b) ಉತ್ತಮ ಕೊಬ್ಬಿನಾಂಶದ ಆಹಾರ

c) ಅತ್ಯ ಅವಶ್ಯ ಇಲ್ಲದ ಕೊಬ್ಬಿನಾಂಶದ ಆಹಾರ

d) ಪ್ರೋಟೀನ್ ಆಹಾರ

28) ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯಲು ಬೇರೆ ವಿಧಾನ?

a) ಸೋಯಾ ಪ್ರೋಟೀನ್ ಆಹಾರ

b) ಹಾಲಿನ ಆಹಾರ

c) ಪ್ರೋಟೀನ್ ಆಹಾರ

d) ಬರಿ ಸೋಯ ಆಹಾರ

29) ಯಾಕೆ ಸೋಯಾ ಪ್ರೋಟೀನ್ ಪದಾರ್ಥ ಹಾಲಿನ ಪ್ರೋಟೀನ ಅಲರ್ಜಿ ತಡೆಯಲು ಸಹಾಯ ಮಾಡುತ್ತದೆ?

a) ಬಹಳ ಆ್ಯಂಟಿಜನ್ ಅಂಶ ಇರುತ್ತದೆ

b) ಕಡಿಮೆ ಆ್ಯಂಟಿಜನ್ ಅಂಶ ಇರುತ್ತದೆ

c) ಬಹಳ ರೋಗನಿರೋಧಕ ಶಕ್ತಿ ಇರುತ್ತದೆ

d) ಕಡಿಮೆ ರೋಗನಿರೋಧಕ ಶಕ್ತಿ ಇರುತ್ತದೆ

30) ಯಾವ ಆಹಾರ ಸೇವನೆ ಹೆಚ್ಚು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯುತ್ತದೆ?

a) ವಿಟಲಮಿನ್ ಯುಕ್ತ ಆಹಾರ

b) ಪ್ರೋಬಯೋಟಿಕ್ ಆಹಾರ

c) ಹೆಚ್ಚು ವಿಟಮಿನ್‌ಯುಕ್ತ ಆಹಾರ

d) ಕಬ್ಬಿಣ ಅಂಶ ಇರುವ ಆಹಾರ

ಂಓಓಇಫಿಗಖಇ–ಒ

ಖಖಿಖಗಅಖಿಗಖಇಆ ಖಿಇಂಅಊಖಓಒಉ ಕಖಔಉಖಂಒಒಇ ಖಓ ಏಂಓಓಂಆಂ

ಆಯೋಜಿತ ಉಪದೇಶ ಕಾರ್ಯಕ್ರಮ

ವಿದ್ಯರ್ಥಿ	:	ಪದ್ಮಶ್ರೀ.ಎ.ಆರ್
ವಿಷಯ	:	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ
ಗುಂಪು	:	1–3 ವರ್ಷದ ಮಕ್ಕಳಿರುವ ತಾಯಂದಿರು
ಸಮಯ	:	40 ನಿಮಿಷಗಳು
ಭೋದಕ ವಿಧಾನಗಳು	:	ನಕ್ಷೆಗಳು
ಬೋದಕ ಮಾಧ್ಯಮ	:	ಕನ್ನಡ
ಭೋದ ರೀತಿ	:	ಪ್ರಾಧ್ಯಾಪಕ ವಿವರಣೆ ಮತ್ತು ಸಂವಾದ

ಮುಖ್ಯ ಉದ್ದೇಶ:–

ಭೋದನೆಯ ನಂತರ ತಾಯಂದಿರು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಮತ್ತು ಅದರಿಂದ ಆಗುವ ತೊಂದರೆಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳುತ್ತಾರೆ.

ಸಾಮಾನ್ಯ ಉದ್ದೇಶ:–

ಗುಂಪು ಈ ಕೆಳಗಿನ ವಿಷಯಗಳ ಬಗ್ಗೆ ತಿಳಿದುಕೊಳ್ಳುತ್ತಾರೆ.

- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಬಗ್ಗೆ ಪೀಠಿಕೆ
- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ
- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಕಾರಣಗಳು
- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಲಕ್ಷಣಗಳು
- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಪರಿಣಾಮಗಳು
- ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ತಡೆಯುವ ಬಗೆ
- ಹಾಲಿನ ಪೋಟೀನ್ ಅಲರ್ಜಿನಿರ್ವಹಣೆ

ಕ್ರ ಸಂ	ಸಮಯ	ಸಾಮಾನ್ಯ ಉದ್ದೇಶಗಳು	ಪಠ್ಯ ವಿಷಯ	ಭೋದನೆ ಕರಮ	ಕಲಿಕೆಕ್ರಮ	ಕಲಿಕೆ ಸಮಾಗ್ರಿಗಳು	ಮೌಲ್ಯಮಾಪನ
1.	ವಿಷಯವನ್ನು ಪರಿಚಯಿಸುವುದು	3 ನಿಮಿಷ	**ಪೀಠಿಕೆ:–** ಹಾಲು ಎನ್ನುವುದು ಹಾಲಿನ ಗ್ರಂಥಿಗಳಿಂದ ಹೊರ ಬರುವ ಒಂದು ದ್ರವ ಪದಾರ್ಥ ಎದೆಯಿಂದ ಬರುವ ಮೊದಲ ಹಾಲಿಗೆ ಕೊಲಸ್ಟ್ರಮ್ ಎಂದು ಕರೆಯುತ್ತಾರೆ ಇದರಲ್ಲಿ ಜೀವನಿರೋಧಕ ಅಂಶಗಳಿರುತ್ತವೆ.	ಶಿಕ್ಷಕರು ವಿಷಯವನ್ನು ಪರಿಚಯಿಸುತ್ತಾರೆ			
2.	ಹಾಲಿನ ಪರೋಟೀನ್ ಅಲರ್ಜಿ ಬಗ್ಗೆ ವಿವರಣೆ	3 ನಿಮಿಷ	ಇದು ಹೆಚ್ಚು ಮಕ್ಕಳಲ್ಲಿ ಕಾಣಿಕೊಳ್ಳುತ್ತದೆ ಅದರಲ್ಲು 1 ವರ್ಷದ ಕೆಳಗಿನ ಮಕ್ಕಳಲ್ಲಿ ಹೆಚ್ಚು. ಇದರಿಂದ ಮೊದಲಿಗೆ ಅನ್ನನಾಳೆನಲ್ಲಿ ತೊಂದರೆ ಉಂಟಾಗಿ ರಕ್ತದ ಮಲ ಬರುವ ಸಾಧ್ಯತೆ ಇದೆ.	ಶಿಕ್ಷಕರು ಹಾಳಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ, ಬಗ್ಗೆ ವಿವರಿಸುತ್ತಾರೆ	ಗುಂಪು ವಿಷಯವನ್ನು ಆಲಿಸುತ್ತದೆ.	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿ ಎಂದರೇನು?
3.	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಕಾರಣಗಳು	15 ನಿಮಿಷ	**ಕಾರಣಗಳು:–** 1. **ವಂಶ ವಿರಂವರ್ಯ:–** ಕುಟುಂಬದಲ್ಲಿ ವಂಶ ಪಾರಂಪರ್ಯವಾಗಿ ಅಸ್ತಮಾದಿಂದ, ಚರ್ಮದ ತೊಂದರೆಗಳಿದ್ದವರ ಮಕ್ಕಳಲ್ಲಿ ಈ	ಶಿಕ್ಷಕರು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಕಾರಣಗಳ ಬಗ್ಗೆ ತಿಳಿಸುತ್ತಾರೆ	ಗುಂಪು ಆಲಿಸುತ್ತದೆ ಮತ್ತು ಪ್ರಶ್ನೆಗಳನ್ನು ಕೇಳುತ್ತಾರೆ	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಗೆ ಕಾರಣಗಳು ಯಾವುವು?

			ರೋಗ ಕಾಣಿಸಿಕೊಳ್ಳುವ ಪಾಧ್ಯತೆ ಇದೆ. 2. **ಬೇಗನೆ ಎದೆಹಾಲು ಉಣಿಸುವದನ್ನು ನಿಲ್ಲಿಸುವುದು:**– ಯಾರು ಬೇಗನೆ ಎದೆಹಾಲು ಉಣಿಸುವುದನ್ನು ನಿಲ್ಲಿಸಿ ಬೇರೆ ಹಾಲಿಗೆ ಮೊರೆ ಹೋಗುತ್ತಾರೊ ಅವರಲ್ಲೆ ಈ ರೋಗ ಹೆಚ್ಚು. 3. **ಎದೆ ಹಾಲು ಉಣಿಸುವಿಕೆ:**– ಯಾರು ಹೆಚ್ಚು ಎದೆ ಹಾಲು ಉಣಿಸುವರೊ ಅವರ ಮಕ್ಕಳಲ್ಲಿ ಈ ತೊಂದರೆ ಬಹಳ ಕಡಿಮೆ. 4. **ರೋಗ ನಿರೋಧಕ ವಸ್ತು:**– ಎದೆ ಹಾಲಿನಲ್ಲಿ ರೋಗನಿರೋಧಕ ವಸ್ತುಗಳು ಜಾಸ್ತಿ ಇದ್ದು ಇವುಗಳು ಈ ರೋಗ ಬರದಂತೆ ತೆಯುತ್ತದೆ. 5. **ಇತರೆ ಪರಿಸರ ಅಂಶಗಳು:**– ಯಾವ ಪೋಷಕರು ಸಿಗರೇಟ್ ಸೇವನೆ ಮಾಡುತ್ತಾರೊ ಅವರ ಮಕ್ಕಳಲ್ಲಿ ಈ ತೊಂದರೆ ಹೆಚ್ಚು.				

4.	5 ನಿಮಿಷ	ಲಕ್ಷಣಗಳ ವಿವರಣೆ	**ಲಕ್ಷಣಗಳು:–** ಈ ರೋಗದ ಲಕ್ಷಣಗಳು ಒಬ್ಬ ಮನುಷ್ಯನಿಂದ ಇನ್ನೊಬ್ಬರಿಗೆ ವಿವಿಧ ರೀತಿಯಾಗಿರುತ್ತದೆ. **ಬೇಗನೆ ಕಾಣಿಸಿಕೊಳ್ಳುವ ಲಕ್ಷಣಗಳು:–** ಚರ್ಮರೋಗ, ಉಬ್ಬಸ ಪಡು, ವಾಂತಿ, **ಅನ್ನನಾಳಿನಲ್ಲ ಇಬರುವ ಲಕ್ಷಣಗಳು:–** – ವಾಂತಿ – ಭೇದಿ – ಮಲಬದ್ಧತೆ – ಮಲದಲ್ಲಿ ರಕ್ತ – ರಕ್ತದಲ್ಲಿ ಕಟಿಮೆ ಕಬ್ಬಿಣ ಅಂಶ **ಚರ್ಮದಲ್ಲಿ ಬರುವ ಲಕ್ಷಣಗಳು:–** – ಚರ್ಮ ರೋಗ – ತುಟಿ ಮತ್ತು ಕಣ್ಣುಗಳು ಊದಿಕೊಳ್ಳುವುದು.	ಶಿಕ್ಷಕರು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಲಕ್ಷಣಗಳ ವಿವರಿಸುತ್ತಾರೆ.	ಗುಂಪು ಕೇಳುತ್ತದೆ ಮತ್ತು ಪ್ರಶ್ನೆ ಕೇಳುತ್ತದೆ	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಲಕ್ಷಣಗಳು ಯಾವುವು?

			ಉಸಿರಾಟದಲ್ಲಿ ಬರುವ ಲಕ್ಷಣಗಳು:– – ಮೂಗಿನಲ್ಲಿ ನೀರು ಸೋರುವುದು – ಕಿವಿಯ ತೊಂದರೆ – ತೀವ್ರ ಕೆಮ್ಮು – ಉಬ್ಬಸಪಡು **ಸಾಮಾನ್ಯ ಲಕ್ಷಣಗಳು:–** – ಅತಿ ತೊಂದರೆ – ಹೊಟ್ಟೆ ನೋವು **ತೀವ್ರ ಲಕ್ಷಣಗಳು:–** – ಉಸಿರಾಡಲು ಕಷ್ಟವಾಗುವುದು – ನೀಲಿ ಬಣ್ಣಕ್ಕೆ ತಿರುಗುವುದು – ಸುಸ್ತಾಗುವುದು – ಚರ್ಮರೋಗ – ತಲೆಯ ಮತ್ತು ಕತ್ತಿನ ಭಾಗದಲ್ಲಿ ಊದುವಿಕೆ – ಮಲ್ಲದಲ್ಲಿ ರಕ್ತ				
5.	3 ನಿಮಿಷ	ಹಾಲಿನ ಪ್ರೋಟೀನ್	**ತೊಡಕುಗಳು:–** ಯಾವ ಮಕ್ಕಳು ಹಾಲಿನ ಪ್ರೋಟಿನ್‌ಗೆ	ಶಿಕ್ಷಕರು ಹಾಲಿನ ಪ್ರೋಟೀನ್	ಗುಂಪು ಆಲಿಸುತ್ತದೆ	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟಿನ್

		ಅಲರ್ಜಿಯ ತೊಡಕುಗಳ ಬಗ್ಗೆ ವಿವರಣೆ	ಅಲರ್ಜಿ ಆಗುವರೊ ಅವರಿಗೆ ಕೆಲವು ತೊಂದರೆಗಳು ಕಾಣಿಸಿಕೊಳ್ಳುತ್ತವೆ. ಬೇರೆ ಪದಾರ್ಥಗಳು ಅಲರ್ಜಿ:– ಮೊಟ್ಟೆ, ಸೋಯ, ದನದ ಮಾಂಸಕ್ಕೆ ಅಲರ್ಜಿ ಯಂಟಾಗುತ್ತದೆ. ಜ್ವರ:– ಸಾಕು ಪ್ರಾಣಿಗಳಿಂದ ಅಲರ್ಜಿ, ಧೂಳಿನಿಂದ, ಪೋಲಿನ್ ವಸ್ತುಗಳಿಂದ, ಮತ್ತು ಬೇರೆ ವಸ್ತುಗಳಿಂದ ಅಲರ್ಜಿ ಬರುತ್ತದೆ.	ಅಲರ್ಜಿಯ ತೊಡಕುಗಳ ಬಗ್ಗೆ ವಿವರಿಸುತ್ತಾರೆ			ಅಲರ್ಜಿಯ ತೊಡಕುಗಳು ಯಾವುವು?
6.	4 ನಿಮಿಷ	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯನ್ನು ತಡೆಯುವ ಬಗ್ಗೆ ವಿವರಿಸುತ್ತಾರೆ.	**ತಡೆಯುವಿಕೆ:–** ಇದನ್ನು ತೊಡೆಯಲು ಒಂದು ನಿರ್ದಿಷ್ಟ ರೀತಿ ಇಲ್ಲ, ಆದರೆ ಇದರ ಲಕ್ಷಣಗಳನ್ನು ಕೆಲವೊಂದು ಪದಾರ್ಥಗಳು ಊಟ ಮಾಡುವುದರಿಂದ ತಪ್ಪಿಸಬಹುದು. ನಿಮ್ಮ ಮಗು ಹಾಲಿಗೆ ಅಲರ್ಜಿ ಆಗಿದ್ದರೆ ಆ ಹಾಲನ್ನು ಉಣಿಸಬಾರದು ನಿಮ್ಮ ಮಕ್ಕಳಿಗೆ ಉಣಿಸುವ ಪದರ್ಥಗಳ ಬಗ್ಗೆ ಗಮನಹರಿಸಿ. ಹೋಟೆಲ್‌ನಲ್ಲಿ ಹಾಲಿನ	ಶಿಕ್ಷಕರು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ತಡೆಯುವಿಕೆ ಬಗ್ಗೆ ವಿವರಿಸುತ್ತಾರೆ.	ಗುಂಪು ಆಲಿಸುತ್ತದೆ	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟಿನ್ ಅಲರ್ಜಿಯನ್ನು ತಡೆಯುವಿಕೆ ಬಗೆ ಹೇಗೆ?

			ಪದಾರ್ಥಗಳನ್ನು ಖರೀದಿಸುವ ಸಮಯದಲ್ಲಿ ಜಾಗ್ರತೆ ವಹಿಸಬೇಕು.				
7.	6 ನಿಮಿಷ	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಕಾರ್ಯ ನಿರ್ವಹಣೆ ಬಗ್ಗೆ ವಿವರಿಸುವುದು	**ಕಾರ್ಯ ನಿರ್ವಹಣೆ:–** 1. **ಮಕ್ಕಳಲ್ಲಿ ಚರ್ಮದ ತೊಂದರೆ:–** ಚರ್ಮದ ತೊಂದರೆ ಕಂಡುಬಂದಲ್ಲಿ ಕಡಿಮೆ ಎಂದರೂ 4 ತಿಂಗಳು ಮಗುವಿಗೆ ಎದೆ ಹಾಲು ಉಣಿಸಬೇಕು, ಎದೆಹಾಲಿನ ಜೊತೆ ಕಡಿಮೆ ಪ್ರೋಟೀನ್ ಅಂಶದ ಹಾಲು ಉಣಿಸಬೇಕು. 2. **ಹಸುವಿನ ಹಾಲಿನ ಅಲರ್ಜಿ:–** ಈ ತೊಂದರೆ ಕಂಡು ಬಂದಲ್ಲಿ ಹಸುವಿನ ಹಾಲು ಕುಡಿಸಬಾರದು. ಕಡಿಮೆ ಪ್ರೋಟೀನ್ ಅಥವ ಪ್ರೋಟೀನ್ ಇಲ್ಲದ ಹಾಲನ್ನು ಮಗುವಿಗೆ ಕುಡಿಸಬೇಕು. ಸೋಯಾ ಪ್ರೋಟೀನ್ ಹಾಲನ್ನು ಕುಡಿಸಬೇಕು. 3. **ಪ್ರೋಬಯೋದಿಕ್ ಹಂಚಿಕೆ:–**	ಶಿಕ್ಷಕರು ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಕಾರ್ಯನಿರ್ವಹಣೆಯ ಬಗ್ಗೆ ವಿವರಿಸುತ್ತಾರೆ.	ಗುಂಪು ಆಲಿಸುವುದು	ನಕ್ಷೆಗಳು	ಹಾಲಿನ ಪ್ರೋಟೀನ್ ಅಲರ್ಜಿಯ ಕಾರ್ಯ ನಿರ್ವಹಣೆ ಬಗ್ಗೆ ಹೇಳಿ?

			ಪ್ರೋಬಯೋಟಿಕ್ ಅಂಶ ಇರುವ ಹಾಲನ್ನು ಕುಡಿಸಿದರೆ ಈ ತೊಂದರೆಯನ್ನು ತಡೆಯುವುದು. ಲಾಕ್ಟೋಬ್ಯಾಸಿಲಯ್ ಅಂಶ ಹೆಚ್ಚು ಇರುವ ಹಾಲನ್ನು ಉಣಿಸಬೇಕು.				

ANNEXURE-N

LIST OF CONTENT VALIDITY EXPERTS

1. **Mrs. Swathi Varghese M. Sc (N)**

   Associate professor

   R.R. College of nursing

   Bangalore, Karnataka

2. **Mr. Someshekar.k**

   Associate professor

   KLE Institute of nursing sciences

   Hubli.

3. **Mrs. B.Runeela**

   Associate professor

   Raghavendra college of nursing

   Madhugiri.

4. **Mrs. Ananda jyothi**

   Associate professor

   Govt. College of nursing

   Bangalore

5. **Mrs. Poornima**

   Associate professor

   NIMHANS College of nursing

   Bangalore.

6. **Dr. Gangaboriah**

   Professor of Statistics

   Kempegowda Institute of Medical Sciences

   Bangalore.