

**DISSERTATION
ON
“ A STUDY TO ASSESS THE EFFECTIVENESS OF CUMIN WATER
CONSUMPTION IN PROMOTING HUNGER LEVEL AMONG CHILDREN
6-12 YEARS OF AGE, ADMITTED IN PAEDIATRIC MEDICAL WARD,
INSTITUTE OF CHILD HEALTH AND HOSPITAL FOR CHILDREN,
CHENNAI.**

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CHENNAI

**In partial fulfillment of the requirement for the degree of
MASTER OF SCIENCE IN NURSING**

APRIL 2016

CERTIFICATE

This is to certify that this dissertation titled “ **A study to assess the effectiveness of cumin water consumption in promoting hunger level among children 6-12 years of age, admitted in pediatric medical ward, Institute of Child Health and Hospital for Children, Chennai.** is a bonafide work done by **Mrs. M. Vasuki** , second year M.sc. nursing student College of Nursing, Madras Medical College, Chennai. submitted to the **Tamilnadu Dr. M.G.R medical university, Chennai** In partial fulfillment of the requirements for the award of degree of master of science in nursing, **Branch II, child health nursing**, under our guidance and supervision during the academic period from 2015 -2016.

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ABSTRACT

TITLE:

A study to assess the effectiveness of cumin water consumption in promoting hunger level among children 6-12 years of age, admitted in paediatric medical ward, Institute of Child Health and Hospital for Children , Chennai.

Children were domains for every country, bringing healthy children and paving for their health is mandatory of the government. The current scenario is about our traditional ingredients, cumin, it'sayurvedic property and medicinal effect, daily use in routine life, it also used to improve hunger level among children with complaints of loss of appetite.

Need for study

Cumin is extremely good for digestion and related problems. The very smell (aroma) of it, which comes from an aromatic organic compound called Cuminaldehyde, the main component of its essential oil, activates our salivary glands in our mouth.it promotes primary digestion of the food.

Objectives

1. To assess the hunger level before consumption of cumin water among children 6-12 years of age of experimental and control group admitted in pediatric medical ward.
2. To evaluate the hunger level after consumption of cumin water among children 6-12 years of age of experimental group admitted in pediatric medical ward.
3. To evaluate the hunger level among children 6-12 years of age of control group admitted in pediatric medical ward.
4. To determine the effectiveness of consumption of cumin water among children 6-12 years of age of experimental and control group admitted in pediatric medical ward.

5. To find association between the selected demographic variables with post test scores of promoting hunger among children 6-12 years of age of experimental group admitted in pediatric medical ward

Key words

Cumin

Cumin is known as jira means which helps digestion in ayurvedic system of medicine dried seeds are used for medicinal purposes the cumin seeds used in different forms cumin seeds action like enhancing appetite , taste perception, digestion, vision, strength, and lactation it is used to treat disease like fever, loss of appetite, diarrhea, vomiting, poor digestion.

Hunger

Strong desire for food in contrast to hunger which is a painful condition due to lack of food substance that promotes appetite.

Methodology:

Research Approach

Quantitative research approach

Research design

The research design adopted for this study was quasi experimental. Non-randomized control group children

Sampling technique:

In this study non-probability purposive sampling technique was used in selecting 60 samples

Tool

Hunger scale

Data collection procedure:

Data collection is gathering of information needed to address a research problem. The researcher collected the data's from the parents and children admitted in medical ward. Institute of Child Health and Hospital for Children. Chennai on 14th July 2015 .Prior permission was obtained from the Director and ward in-charge doctor. The main study was planned for a period of four weeks that is from 16th July 2015 to 17 th August 2015.

Data analysis:

Descriptive statistical methods:

Frequency, percentage, mean and standard deviation were used.

Inferential statistical methods:

Chi- square test was used to find out the association between the levels of impact of disability score and selected demographic variables among parents of children loss of appetite and low level of hunger

Study Findings:

Among experiment, in pre-test, they have 4.93 hunger scale score and control group are having 2.13 hunger scale score, so the difference is 0.16, this difference is small and it is not statistically significant.

Among experiment, in post-test, they have 7.97 hunger scale score and control group are having 3.77 hunger scale score, so the difference is 2.83, this difference is large and it is statistically significant.

The effectiveness of cumin water administration was calculate are t-test value=11.04, p=0.001***

In experiment group, the post test hunger scale score was **30.3%** where as **control group 3.7%**. This shows the effectiveness of cumin water. Differences between pretest and posttest score was analysed using percentage with 95% CI

Recommendations:

1. The study can be replicate by the taking a large sample in other parts of the country.
2. A similar study can be conducted among children by assessing the attitude of the parents in the society.

Conclusion

There is a significant improvement in hunger level after consuming of cumin water among children, and health education was only the effective way to upgrade their health status. The natural resource cum appetizer did a remarkable change among the children by reducing loss of appetite and improving hunger level

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CHAPTER –I

INTRODUCTION

“Food is an important part of a balanced diet”

- Fran Leboustz (1935)

Good nutrition is one of the main determinants of successful aging. Successful aging can be defined as the ability to maintain a “low risk of disease and disease-related disability, high mental and physical function, and active engagement of life”. Diet can influence the incidence and severity of disease and poor nutrition can accelerate loss of independence. There is also a relationship between nutritional well-being and an older adult’s ability to perform activities of daily living (ADL). The elderly tend to change their diets in response to functional disabilities, which may lead to consumption of a monotonous diet and inadequate nutrient intake. Sensory changes including a diminished sense of taste and smell, dysphagia, and poorly fitting dentures can all affect the nutritional quality of the diet.

Studies with the Expanded Food and Nutrition Education Program (**EFNEP-2010**) have shown that nutrition education helped low-income individuals improve food shopping, meal planning and preparation, and food safety practices. Nutrition education has the potential to benefit health and to reduce the need for health and social services. For the elderly, income affects both the quality and quantity of food purchased, especially because much of this population must allocate a significant part of their budget to medications and health care.

We describe factors shaping the development of children's food preferences and eating behaviors during the first years of life, in order to provide insight into how growing up in current conditions of dietary abundance can promote patterns of food intake which contribute to accelerated weight gain and overweight. In particular, we focus on describing children's predispositions and parents' child feeding practices. We will see that the feeding practices that evolved across human history as effective

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parental responses to the threat of food scarcity, can, when combined with infants' unlearned preferences and predispositions, actually promote overeating and overweight in our current eating environments. In addition to the relatively recent changes in our eating environments, concurrent reductions in opportunities for physical activity undoubtedly also contribute to positive energy balance and obesity, but are outside the scope of this article.

The first five years of life are a time of rapid physical growth and change, and are the years when eating behaviors that can serve as a foundation for future eating patterns develop. During these early years, children are learning what, when, and how much to eat based on the transmission of cultural and familial beliefs, attitudes, and practices surrounding food and eating. Throughout, we focus on the vital role parents and caregivers play in structuring children's early experiences with food and eating, and describe how these experiences are linked to children's eating behavior and their weight status.

For thousands of years, man has sought healing powers from the natural world. Practices of traditional medicine vary greatly in different region. Practices are influenced by culture, history, personal attitudes, education level and philosophy. Herbal and plant-derived remedies have been estimated by the World Health Organization (**WHO 2000**) to be the most frequently used therapies worldwide.

1:1 Need for study

“Attention to health is life greatest hinderence

-plato

loss of appetite is a commonest problem in the childhood period especially in school going children. In which as a pediatrics nurses have a responsibility to enhance the appetite of the children to look after their nutritional health of the children.

And especially where I have selected the location are shows more numbers of children are affected by this problem. Those who are admitted in the pediatric

medical ward at Institute of child health, expressed their problem with loss of appetite. Hence I have taken this problem for my dissertation to rectify as much as possible. I had been searched many ways to solve this problem among school going children. Finally, I have choose cumin water administration for the loss of appetite children to enhancing their appetite.

In developing countries, due to high cost of medicines and access to allopathic physicians, the provision of safe and effective traditional or alternative therapies are gaining popularity. Various countries like China, South Korea and Vietnam have fully integrated traditional medicine into their health systems. In Africa about 85% of the population uses CAM for different diseases. Traditional medicine is also practiced varying degrees in the industrialized world(**SohailAsharf 2010**)

According to (**WHO-1998**) over 50% of population in Europe, Latin, America and other industrialized countries have used Complementary and Alternative Modalities once in their life. In USA the total market for medicinal botanicals was worth US\$ 3.87 billion in 1998. Looking at South Asia, it appears that there is an increase in trend of the CAM use. It has been estimated that more than 70% of India's population uses CAM.

A high prevalence of Complementary and Alternative Modalities use has been documented worldwide in children and adolescent. To determine the prevalence and reasons for Complementary and Alternative Modalities use among children various studies have been done. Prevalence of Complementary and Alternative Modalities use in children ranges from 63% and 18.0 % in Australia. The most frequent users of Complementary and Alternative Modalities were patients with asthma, eczema or allergy and patients suffering from diarrhea

(FarhaNaz, Kashif Abbas, Anwar Hassan)

Complementary and Alternative Modalities in our part of the world for children are used mostly because of word-of mouth, personal experience or on recommendation by

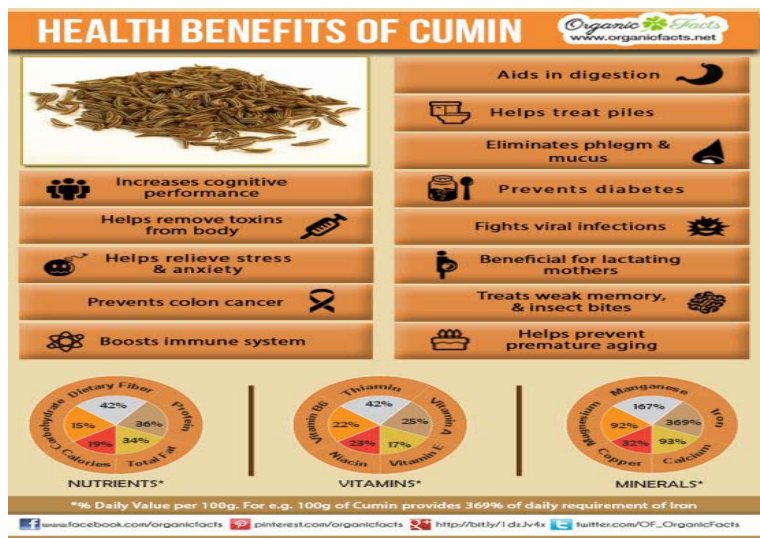
a senior family member, whereas in other countries there are Complementary and Alternative Modalities specialist recommending such therapy, therefore, making it a more controlled and monitored therapy. Some countries like China and Far eastern countries have herbalism or phytomedicine incorporated in the medical practice.

People opting for alternative treatment do it because of dissatisfaction with conventional medicine and due to side effects. Research is required to find the efficacy and safety of the agents used as Complementary and Alternative Modalities. The aim of the present study was to assess the frequency, belief and trend of use of vit c. Complementary and Alternative Modalities by families. Herbal choices have been found to vary among different cultures and races. Familiarity with local medications is needed to access the efficacy and usefulness of such therapies

(ArshaloozJamilaRahman, HeemaSatwani 2013).

Cumin is extremely good for digestion and related problems. The very smell (aroma) of it, which comes from an aromatic organic compound called Cuminaldehyde, the main component of its essential oil, activates our salivary glands in our mouth (the mouth watering flavor), facilitating the primary digestion of the food. Next is Thymol, a compound present in cumin, which does the same to the glands which secrete acids, bile and enzymes responsible for complete digestion of the food in the stomach and the intestines, due to its stimulating properties. Cumin is also Carminative i.e. relieves from you from gas troubles and thereby improves digestion and appetite. Due to its essential oils, magnesium and sodium content, it promotes digestion and also gives relief in stomach-ache when taken with hot water (like aqua psychotic and mint).²⁵ Perfusion of an aqueous extract of cumin via the stomach of pentobarbitone-anesthetized rats under the aspirin-induced gastric mucosal injury showed an increased acid secretion by a cholinergic mechanism.⁴⁷ Aqueous and solvent derived extracts of cumin increased amylase, protease, lipase and phytoase activities.

The energetic of Cumin is as follows: It is taste post digestive effect. Cumin is used as a stimulant, carminative ,anddiuretic,It is also used in overcoming diarrhea and dysentery, when mixed with yogurt and water. It is especially useful for abdominal pain and distention. As it is useful in reducing abdominal gas, it is an aid to digestion and absorption, and helps to counter the effects of heavy foods, such as cheese, yogurt, beans, potatoes, or overeating. It is also used as an antidote for tomatoes, chihilies, and other hot,foods. Its qualities and usage are very similar to coriander and fennel, with which it is commonly used.



It has proven useful in conditions of: indigestion, abdominal pain, including cramps and gas, diminished Agni, difficult and/or burning urination, and colic, especially. in children. There are no known precautions for its use. It is prepared either as a infusion with 250 to 500 mg, or the roasted seeds may be chewed after meals, as a digestive aid.

“Fennel seeds are one of the best herbs for digestion, strengthening Agni without aggravating pitta, stopping cramping and dispelling flatulence. They can be taken roasted after meals, one teaspoon, by themselves or with rock salt. They combine well with cumin and coriander as three cooling spices. Fennel seeds are excellent for digestive weakens in children or in the elderly. They are calming to the nerves, their

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aroma acts upon the mind and promote mental alertness. For urinary problems, they combine well with coriander. Fennel can be used for digestive weakness where hot spices and peppers might overheat or over stimulate. They work to stop the griping of purgatives and can help promote menstruation and to promote milk flow for nursing mothers.

1.2 Statement of problem

“ A study to assess the effectiveness of cumin water consumption in promoting hunger level among children 6-12 years of age, admitted in pediatric medical ward, Institute of Child Health and Hospital for Children Chennai.

1.3 Objectives

1. To assess the hunger level before consumption of cumin water among children 6-12 years of age of experimental and control group admitted in pediatric medical ward.
2. To evaluate the hunger level after consumption of cumin water among children 6-12 years of age of experimental group admitted in pediatric medical ward.
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4. To determine the effectiveness of consumption of cumin water among children 6-12 years of age of experimental and control group admitted in pediatric medical ward.
5. To find association between the selected demographic variables with post test scores of promoting hunger among children 6-12 years of age of experimental group admitted in pediatric medical ward

1.4 Operational definitions

Assess

It refers to determine the process of consumption of 150 ml of cumin water three times a day before food intake for improving hunger among children 6-12 years of age admitted in pediatric medical ward.

Effectiveness:

It refers the outcome impact of 100 ml of cumin water promoting hunger among children 6-12 years of age admitted in pediatric medical ward after consumption of cumin water.

Promoting

It refers that the amount of hunger aggravated, increased or improved among Children with loss of appetite after consumption of cumin water.

Hunger:-

It refers that desire or feeling of discomfort caused by lack of intake of food or craving for food is a strong desire experienced by the children while not consuming food into the stomach impulses are conveyed to the brain by sensory neurons.

Cumin water:-

It refers that cumin water is a clear liquid prepared by add in 3 gram of cumin with 150 ml of hot water then allow it to cool. its therapeutic effect shows improving appetite and improving general health.

Selected hospital:-

It refers to the children thatwere admitted for seeking treatment in The Institute of Child Health and Hospital for Children, Chennai.

1.5 Assumption:-

The study assumes that

I .Cumin water has digestive and appetizing effect which helped to promote appetite among children admitted in medical ward with complaints of loss of appetite

.II.Cumin water has numerous medicinal properties

1.6 Hypothesis:-

H1: There will be statistically significant difference between post test hunger level among children of experimental and control group. Hypothesis proved

H2:There will be statistically significant association between selected demographic variables with the post test value of appetite among children of experimental group after the administration of cumin water.

1.7 Delimitation

Data collection done for four weeks.

This study is limited to children of only those admitted in pediatric medical ward at Institute of Child Health and Hospital.chennai.

CHAPTER -II

REVIEW OF LITERATURE

2.1 Review of related studies

2.2 Conceptual frame work

The whole review was organized under the following headings,

2.1.1. Literature related to property and uses of cumin seeds

2.1.2. Literature related to the effectiveness of cumin water

2.1.3 Literature related to loss of appetite and factors affecting appetite

2.1.1. Literature related to property and uses of cumin seeds

Cumin commonly known as “Jeera” generally used in the household work as a spice. It is a small annual herbaceous plant that is a member of the aromatic plant family (Apiaceae). Seeds of the plant are used to add flavor to spicy dishes. Cumin seeds contain numerous phyto-chemicals that are known to have antioxidant, carminative and anti-flatulent properties. The active principles in the cumin may increase the motility of the gastro-intestinal tract as well as increase the digestion power by increasing gastro-intestinal enzyme secretions. This spice is an excellent source of minerals like iron , copper, calcium, potassium, manganese, selenium, zinc and magnesium. It also contains very good amounts of B-complex vitamins such as thiamin, vitamin B-6, niacin, riboflavin, and other vital anti-oxidant vitamins like vitamin E, vitamin A and vitamin C. The seeds are also rich source of many flavonoid phenol anti-oxidants such as carotenes, zeaxanthin, and luteinSo, here are 10 ways jeera adds to the healthy quotient of your daily meal.

1: Improves digestion

The presence of thymol and other essential oils in cumin seeds stimulate the salivary glands thereby helping in the digestion of food. Apart from this, it strengthens a sluggish digestive system. Hence, if you do suffer from indigestion try drinking some jeera tea. Apart from that this jeera-banana combo can help you lose weight too.

2: Beats constipation

Due to its high fibre content, jeera boosts the activity of the gastrointestinal tract which in turn stimulates enzyme secretion. This is why jeera powder is commonly used as a natural laxative. In fact, its laxative properties are so powerful that Ayurveda practitioners believe that it is capable of preventing and healing severe digestive disorders like piles.

3. Fights cancer

According to the studies conducted by the Cancer Research Laboratory of Hilton Head Island, South Carolina, USA, jeera can help in the fight against cancer. This is because it contains an active compound, known as cuminaldehyde that helps in retarding the growth of tumours. However, this anti-cancer property was confined to kalajeera.

4. Regulates blood pressure and heart rate

Being high in potassium a mineral that helps maintain the electrolyte balance in the body this seed is an elixir for heart patients. This mineral not only helps in the regulation of cell production but also helps maintain your blood pressure and heart rate. Because of its regulatory properties, jeera helps patients who have heart disease and helps prevent it as well. Drinking a glass of jeera water early in the morning (on an empty stomach) to control your blood pressure levels.

5. Relieves asthma and cold

The potent anti-inflammatory, anti-bacterial and anti-fungal properties of cumin seed, makes it a great home remedy for cold and asthma. These compounds soothe inflamed muscles and boost your immunity to fight the infection. For relief from a cold, boil some jeera seeds (about one tablespoon) in two cups of water and add a small piece of crushed ginger to the water. Once it starts to boil, strain it and sip on this tea as often as possible. This will not only help to relieve a cold but also soothe a sore throat thereby making you feel much better.

6. Helps prevent anaemia

Did you know that 100 grams of jeera contains 11.7 milligrams of iron? Iron is the main component in the production of haemoglobin – a substance that carries and transports oxygen throughout our body. This is why jeera is the most natural and effective supplement for people suffering from anaemia. It is also advisable for women to consume jeera on a regular basis to keep the disease at bay. You could just include it in your everyday meals like in roti, rice, curries, etc. Here are 5 foods you should avoid if you have anemia.

7: Improves sexual health

Yes, it's true. The humble seed can up boost your sexual quotient. Packed with zinc and potassium, jeera is an all-rounder when it comes to improving your performance in the bedroom. Zinc is important for sperm production and potassium maintains a healthy heart rate and blood pressure, This spice also helps deal with fertility issues and prevent conditions like ED (erectile dysfunction), PE (premature ejaculation), low sperm count and low virility of your sperm. Drink jeera tea on a regular basis on an empty stomach and watch things steam up between the sheets, naturally!

8: Great for pregnant mothers

As a seed, it acts as a wonder spice for mothers-to-be and new mothers. Its properties of relieving constipation and improving digestion greatly help pregnant women deal with pregnancy symptoms like nausea and constipation. Along with aiding in better delivery, this spice enhances lactation. Also, the high amount of iron and calcium content in the seed increases milk production without any side effects. Pregnant mothers should mix jeera powder in milk and honey and have this twice a day.

9: Helps to deal with insomnia

The tiny cumin seed might just do the trick for you. Jeera contains a high amount of melatonin, which when consumed with bananas increases the production of chemicals within the brain. This concoction helps beat insomnia and gives you a good night's sleep. To sleep well mix some freshly ground jeera powder with the pulp of a ripe banana. Eat this every night. This helps insomniacs naturally and it is not addictive in nature like synthetic drugs.

10: Enhances memory

Packed with minerals like riboflavin, zeaxanthin, vitamin B6, niacin and many more, jeera is well known for its ability to maintain and restore memory and mental health. In Ayurveda, it is often used to treat patients suffering from amnesia. While home remedies are something we all rely on in our everyday life, it is essential that you go to a trained physician if your symptoms persist or get worse. To sharpen your memory, chew on a few roasted seeds every day.

2.1.2.Literature related to the effectiveness of cumin water

In the beginning of human civilization, perhaps as early as origin of man in the world. Healing powers are reported to be present in plants and therefore it is assumed that

they have medicinal properties. The earliest uses of plants as medicine are found in Babylonian circa 1770 BC. In fact, ancient Egyptians believed that medicinal plants were used even in the after-life of their pharaohs. Such plants have been recorded from the Giza pyramids and their specimens are also preserved in Cairo Museum (Anna, 1993). In traditional health care system medicinal plants have important role. Medicinal plants extracts are used to make a large number of allopathic drugs.

Ramaa et al.,(2015)conducted a study on Black cumin locally known as “Kalonji” is a good source of nutritionally essential components. Black cumin seeds have been used as herbal medicine by various cultures and civilizations to treat and prevent a number of diseases. Recent research also witnessed the presence of *Nigella sativa* seeds some 3000 years ago at Cliburn, off the southwest coast of Turkey It is also famous for the saying of the Prophet Muhammad "Hold on to use of the black cumin seed, for it has a remedy for every illness except death.

Nickavar et al., 2015; Cheikh-Rouhou et al.(, 2015)conducted a study on balanced fatty acid profile, it contains considerable quantities of tocopherols and allied bioactive compounds. These phytochemicals are important to attenuating the overall antioxidant capabilities of the body and reducing low-density lipoproteins (LDL) modification due to free radical production Moreover, the presence of phytosterols in amounts of 0.33-0.36% further strengthens its hypoglycemic and hypercholesterolemia perspectives .

Bech-Larsen and Scholderer,(2015). Plant based functional foods are gaining popularity across the world due to an array of evidences for their safer therapeutic applications. The health claims associated with the consumption of plants are due to their rich phytochemistry

Manach et al., 2015; (2015)conducted a study on the role of dietary components in immune response is indispensable for regulation and proper functionality of the system Black cumin oil and its essential ingredient like thymoquinone act as immune

boosters and research investigations have proved their anti-inflammatory and immune modulatory effect. It has been realized that diet-based therapies are among the most effective and sustainable ways to overcome various maladies. However, development of successful food-based strategy requires knowledge of nutrient dense sources, target communities and indeed selection of suitable vehicle. Functional foods are important components in such 5 interventions aiming to provide health benefits beyond their basic nutrition.

Akhtar et al., 2014; Matsuura et al., (2014) conducted a study on consumption of antioxidant rich foods may improve antioxidant defense mechanism and provide protection against oxidative damage caused by free radicals. Oxidative stress results when production of reactive oxygen species exceeds the scavenging potential of cells, tissues or organs. Consequences of oxidative stress include cardiovascular, neurodegenerative and carcinogenic processes. The active ingredients like thymoquinone and its derivatives act as safeguards against free radical damage not only during oxidative stress but also in associated discrepancies.

Edeoga et al., (2014) conducted a study Conducted study on generally screening of these secondary metabolites and development of drugs is a very hard task. Much effort is required for drug development, starting from botanical identification, collection, extraction, isolation, purification and compound identification to pharmacological and clinical testing. However the enormous chemical diversity and highly unusual structures obtained from the natural products are of more benefit than produced by the currently available combinatorial approaches that are based on heterocyclic compounds. The criteria for studies on particular natural products have been either the pre existing traditional use of the plant in therapy.

Gidding et al., 2014; Bárta et al., (2014) Conducted a study on wheat based baked products are considered suitable vehicles for incorporation of functional ingredients that can easily be accessible to masses especially in countries like Pakistan where wheat is staple diet. The role of black cumin and its components against various

maladies are multidimensional, owing to its rich nutritional profile. Black cumin fixed and essential oils are promising candidates in dietary modifications and could be utilized directly in daily diet or added as a functional ingredient in Cereal-based products Cookies, being higher in fat contents, would be a better carrier for provision of desirable quantities of antioxidants and tocopherols to the vulnerable segments by adding black cumin fixed and essential oil in various proportions.

Moses et al., (2013) Conducted a study on antimicrobial activity of essential oils extracted from cumin seeds, allspice berries and basil leaves on 10-day-old *Rhipicephalus microplus* tick larvae using the LPT. Two-fold dilutions of the three essential oils were tested from a starting dilution of 20% down to 1.25%. The results showed a high toxicological effect for cumin, producing 100% mortality in all tested concentrations on *R. microplus* larvae. Similarly, allspice essential oil produced 100% mortality at all concentrations with the exception of a dramatic decrease at 1.25% concentration. The most common compounds detected by gas chromatography-mass spectrometry were as follows: cumin: cuminaldehyde (22.03%), γ -terpinene (15.69%) and 2-carene-10-al (12.89%); allspice: methyl eugenol (62.7%) and eugenol (8.3%); basil: linalool (30.61%) and estragole (20.04%). Results clearly indicate that *C. cyminum* and *P. dioica* essential oils can be used as an effective alternative for *R. microplus* tick control, and there is a high probability that they can be used for other ticks affecting cattle in Mexico and throughout the world

Hafedh et al. (2011) Conducted a study on extracted essential oil by hydrodistillation from twenty-one components were identified as cuminaldehyde (39.48%), γ -terpinene (15.21%), *o*-cymene (11.82%), β -pinene (11.13%), 2-carene-10-al (7.93%), trans-carveol (4.49%) and myrtenal (3.5%) as a major components. Moreover, oil exhibited higher antibacterial and antifungal activities with a high effectiveness against *Vibrio* spp. strains with a diameter of inhibition zones growth values ranging from (0.078–0.31 mg/ml) to (0.31–1.25 mg/ml), respectively. On the other hand, antioxidant activities using four different tests

then compared with cumin oil exhibit a higher activity in each antioxidant system with a special attention for β -carotene bleaching test (IC₅₀: 20 μ g/ml) and reducing power (EC₁₁ μ g/ml). In the light of these findings, they suggested that essential oil may be considered as an interesting source of antibacterial, antifungal and antioxidants components used as potent agents in food preservation and for therapeutics.

Liet al., (2013) conducted a study on extraction of essential oil of seeds using a combination of organic solvent with low boiling point and steam distillation was explored. The effect of different parameters, such as particle size, temperature (using three-level orthogonal array design). The experimental results showed that the temperature had the largest effect on the yield of the extract, followed by extraction time and particle size. The optimum parameters, such as temperature, particle size, Essential oil of seeds and extraction hydrodistillation, combination technology of organic solvent with low boiling point and steam distillation were further analysed by gas chromatographic/mass spectrometric detection to compare the extraction methods. Forty-five compounds in the essential oil were identified, showing that the composition of the extraction by different methods.

Rashid and Arshad,(2012) conducted a study on use of medicinal plants is reported for extraction of drugs to relieve, prevent and cure or to alter physiological processes during ailments. In fact they are an effective source of both traditional and modern medicine (Farnsworth, 1988). The discipline of using plants as medicine has gained the scientific basis for its proper application within mainstream medicine. The knowledge about herbal remedies has developed in centuries by various experiments. This knowledge has guided the chemists to identify different classes of compounds. According to an estimate, natural compounds and their derivatives are involved in quarter of all medical prescriptions suggested by even physicians from developed countries

Lapshina et al., 2011; Zakir et al.,(2012).conducted a study on diet selection is imperative for the management of diabetes and its allied complications, including immune dysfunction, degenerative and cardiovascular disorders. *Nigella sativa*, fixed and essential oils, hold insulin tropic properties and helpful in maintaining β -cells integrity and both these properties are important in mediating diabetes mellitus. Likewise, antioxidants present in black cumin mitigate diabetic complications arising due to free radical production and Management of plasma cholesterol continues to be a cardinal issue in cardiovascular disease prevention.

Hypercholesterolemia and LDL oxidation play key role in the onset of atherosclerosis and related disorders. Owing to rich phytochemistry with special reference to polyphenols, natural products might be suitable preventive measure in coronary care and regulating blood

cholesterol. Consumption of black cumin fixed oil in daily diets can address the problem concern. Functional ingredients of black cumin seed especially antioxidants, fat-soluble vitamins, phytosterols and some pyrazanol containing moieties are important in cholesterol lowering properties.

Schwager et al., 2010 Ares et al.(2012). In the domain of diet-based therapies, opportunities abound in functional foods to combat oxidative stress, hyperglycemia and high cholesterol levels. Functional foods are predicted to become one of the prime dietary trends in the incoming decades and it is the responsibility of the nutritionists to pay attention towards their health claims and safety issues

Satti et al., (2012) conducted a study on sensitive and reproducible RP-HPLC method with photodiode-array detection for isolation and quantification of the bioactive hydrophilic constituent 7-(1-O- β -D-galacturonide-4'-(1-O- β -D-glucopyranosyl)-3',4', 5,7-tetra hydroxyl flavones [compound 1], from the seeds. Compound is high purity, after removal of solvents. The purity and identity of the compound were established

by use of LC–mass spectrometry and by spectroscopic techniques. The purity of compound 1 was also confirmed by HPTLC.

Wang et al., (2012) conducted a study on analysis of essential oil using simultaneous ultrasonic nebulization extraction and headspace single drop micro extraction followed by gas chromatography–mass spectrometry was developed. Experimental parameters, including the kind of suspended solvent, micro drop volume, sample amount, extraction time, enrichment time and salt concentration were examined and optimized. Compared with hydrodistillation, ultrasonic nebulization extraction and headspace single drop micro extraction provides the advantages of simplicity, cheapness and low toxicity.

Kalia et al., (2012) conducted a study on evaluated aqueous suspension of fruits and its extracts orally for hypoglycemic effects in normal healthy rats and in streptozotocin-induced diabetic rats. Rats treated with aqueous extract had decreased blood glucose concentration compared to basal level, 8.66, 11.60 and 19.79% lower respectively, one, three and five hours after drug administration. Petroleum ether extract-striated rats showed more decline in blood glucose concentration, compared to basal level of 35.25% lower, respectively, Rats treated with methanol extract showed no significant decrease in blood glucose concentration. Aqueous and petroleum ether extracts improved glucose tolerance. Petroleum ether extracts increased serum insulin after oral glucose infusion in the drug-treated rats compared to the control group. The hypoglycemic response of the petroleum ether.

Zaman and Abbasi (2011) conducted a study on Plant LTPs are small basic proteins involved in transport of lipids between membranes. These proteins are known to participate in plant defense; however, the exact mechanism of their antimicrobial action against fungi or bacteria is still unclear. The cumin LTP1 has been purified using a combination of chromatographic procedures and further characterized using mass spectrometry, circular dichroism spectroscopy and Edman degradation. Amino

acid sequence has been used to predict homology model of cumin LTP1 in complex with myristic acid, and lyso-myristoylphosphatidyl choline.

Derakhshan et al.,(2011)conducted a study on antimicrobial activity of seed essential oil and alcoholic extract against *Klebsiellapneumoniae* ATCC 13883 and clinical *K. pneumoniae* isolates by evaluating the effect of subminimum inhibitory concentrations on cell morphology, capsule expression and urease activity has been studied. Growth of *K. pneumoniae* strains exposed to sub-MICs of extracts resulted in cell elongation and repression of capsule expression. Urease activity was decreased. The major constituent of the oil determined by gas chromatography/mass spectrometry was cumin aldehyde.

Bhukari et al., (2011)conducted a study on antioxidant activity of various extracts of fruit i.e. methanol, ethanol, dichloromethane and hexane. Determination of the total phenolic content, chelating activity, reducing power and free radical scavenging activity were taken as parameters for the assessment of antioxidant properties. The findings of this study suggest the potent source of antioxidants.

Milan et al., (2010) conducted a study on studied effects of different cumin extracts, e.g. saline, hot aqueous, oleoresin and essential oil for various enzymatic activities. Results showed maximum increases in amylase, protease, lipase and phytase activities in the presence of saline and hot aqueous extracts, along with high antioxidant activity. The saline and hot aqueous extracts of spent cumin showed enzymatic activities similar to that of native cumin.

Shirke et al.,(2010) conducted a study on anti-osteoporotic evaluation of phytoestrogen administered 0.15 mg/kg estradiol and 1 g/kg of methanolic extract of fruits in two divided doses for 10 weeks. At the end of the study, blood bones and uterus of the animals were collected. Serum was evaluated for calcium, phosphorus, alkaline phosphatase and tartarate resistant acid phosphatase. Bone density, ash density, mineral content and mechanical strength of bones were

evaluated. Scanning electron microscopic analysis of bones (tibia) was performed. MCC (1 g/kg) significantly reduced urinary calcium excretion and significantly increased calcium content and mechanical strength of bones.

Ramadan and Mörsel, 2009 **Atta, (2010).**) conducted a study on Black cumin seeds contain substantial amounts of alkaloids like nigellicine, nigellidine and nigellimine; reported as cholesterol lowering agents Likewise, its essential oil is a rich source of antioxidants including thymoquinone, ρ -cymene, carvacrol, tanethole and 4-terpineol Several pharmacological investigations explored that thymoquinone is effective against oxidative stress, cancer, immune dysfunction and diabetic complications. Furthermore, it also regulates several hematological & serological functions; maintains body homeostasis and bears hypocholesterolemic effect

Gachkar et al.,(2009) conducted a study on essential oils extracted by hydrodistillation from *C. cyminum*. It contained α -pinene (29.1%, 14.9%), 1,8-cineole (17.9%, 7.43%) and linalool (10.4%, 14.9%), respectively, as the major compounds. *C. cyminum* oil exhibited stronger antimicrobial activity than did *R. officinalis* oil against *E. coli*, *S. aureus* and *L. monocytogenes*. Complete death time on exposure for oils was 20 and 25 min, 180 and 240 min, and 90 and 120 min for *E. coli*, *S. aureus* and *L. onocytogenes*, respectively. Sharma et al., (2007)³⁹ studied pharmacological approach in which the bioavailability of a drug may be modulated by utilizing the herb–drug synergism.

Nalini et al.,(2009) conducted a study on evaluated the effect of *C. annum*, *C. cyminum* and *P.nigrum* on colon cancer induced colon-specific carcinogen, 1,2-dimethylhydrazine. Results showed that *C. annum* supplementation promotes colon carcinogenesis, whereas cumin or black pepper suppresses colon carcinogenesis in the presence of the procarcinogen 1,2-dimethylhydrazine. The pharmacokinetic interaction of some herbal products and a pure molecule isolated with rifampicin was showed. An aqueous extract derived from cumin seeds produced a significant

enhancement of rifampicin levels in rat plasma. This activity was found to be due to a flavonoid glycoside, 3',5-dihydroxyflavone-7-O-β-D-galacturonide-4-β-D-glucopyranoside (CC-I). CC-I enhanced the concentration by 35% and AUC by 53% of RIF. The altered bioavailability profile of rifampicin could be attributed to a permeation enhancing effect of this glycoside

Boskabady et al.,(2009) conducted a study on evaluated the relaxant effect of macerated and aqueous extract of fruits on the tracheal chains of guinea pigs. **The highest concentration of macerated extract showed significant (P< 0.05) by the 2.5% dose of cumin seed diet.** Lipid peroxidation measured as 20 formation of MDA production showed significant inhibition (P < 0.05 to P < 0.01) by both doses of cumin. LDH activity remained unaltered by both doses of cumin. The results strongly suggest the cancer chemopreventive potentials of cumin seed and could be attributed to its ability to modulate carcinogen metabolism.

Sayyah et al.,(2009) conducted a study on evaluated the potential anti-nociceptive and anti-inflammatory activities of the fruit essential oil has been evaluated in chemical (formalin test) and thermal (tail-flick test) models of nociception and formalin model of acute inflammation in rats and mice. The essential oil at the doses ranging between 0.0125 and 0.20 ml/kg exhibited a significant and dose-dependent analgesic effect in the model of chronic and inflammatory pain. However, the essential oil was devoid of anti-inflammatory activity. Moreover, the essential oil had no analgesic effect in tail flick test as a model of acute pain. The LD50 value of 0.59 ml/kg was obtained for the essential oil.

Dhandapani et al.,(2009) studied the role of seeds supplementation on the plasma and tissue lipids in alloxan diabetic rats. Oral administration of 0.25 g/kg for 6 weeks to diabetic rats resulted in significant reduction in blood glucose and an increase in total haemoglobin and glycosylated haemoglobin. It also prevented a decrease in body weight. Seed treatment also resulted in a significant reduction in plasma and tissue

cholesterol, phospholipids, free fatty acids and triglycerides. Histological observations demonstrated significant fatty changes and inflammatory cell infiltrates in diabetic rat pancreas. But supplementation with seeds to diabetic rats significantly reduced the fatty changes and inflammatory cell infiltrates.

Sharma et al.,(2008) studied effect of alcoholic extracts of *S. emarginatus*, *T. belerica*, *C. cyminum* and *A. cepa* on reproductive organs of male Wistar albino rat. Fruit extracts of *S. emarginatus*, *T. belerica* and seed extracts of *C. cyminum* and *A. cepa* (50 mg/day/rat) were fed orally to male albino rats for 60 days. The body weights were not affected but the weights of reproductive organs decreased following the treatments. The sperm motility of cauda epididymis and sperm count of cauda epididymis and testis declined significantly leading to negative fertility test. Haemoglobin and haematocrit values remained unaltered, indicating normal blood physiology of treated groups of animals. Serum biochemistry indicated an increase in the lipid parameters. The present study therefore, suggests that these extracts exert both antifertility and antiandrogenic activities. The overall data suggested *S. emarginatus* is superior to other three plant extracts in exerting the antifertility effects.

Yan et al., (2008) determined the chemical components of volatile oil by gas chromatography-mass spectrometry. Volatile oil was extracted from fruits by using steam distillation. More than sixty peaks were separated and 49 compounds were identified by gas chromatography-mass spectrometry (GC-MS). The main components were cuminal and safranal (accounting for 32.26% and 24.46% respectively in the components identified). The other nine compounds with contents all over 1%, were monoterpenes, sesquiterpenes, aromatic aldehydes and aromatic oxides etc. The other components with relatively small amounts were chiefly terpenes, terpenols, terpenals, terpenones, terpene esters and aromatic compounds.

2.1.3 Literature related to loss of appetite and factors affecting appetite

Elsa Addressia, Amy T. Galloway, Elisabetta Visalberghic, Leann L. Birch (2014) conducted study on Social influences have been shown to be very important to overcome loss of appetite and promotion of hunger level in young children. However, there is experimental evidence about whether social influences on food acceptance are specific, that is if models eating the same food as the child are more effective in promoting food acceptance than models eating a different food. We assessed children's behavior and loss of appetite and promotion of hunger level among foods when an adult model (a) was not eating 42% (*Presence* condition), (b) was eating a food of a Different color 35% (*Different color* condition), and (c) was eating a food of the same color 23% (*Same color* condition). We tested 27 children (ages 2- to 5-years-old) recruited from The Pennsylvania State University day-care facilities.

Fatama ,osaman, Ibnouf (2013) conducted study on assess the contribution of women to loss of appetite and promotion of hunger level in Sudan, this study seeks to assess women's contribution to their household food supply and nutrition status in rural Sudan. As for the contribution of the research, the research is expected to contribute to improve the understanding of the important contribution of women to economic activities and in particular in providing and improving household food security in Sudan and thus valuing the potential role of women in reducing hunger 43% and malnutrition 57%. Improvement of the household food security refers to the expanding availability and accessibility of nutritional food on sustainable basis. In this regard this study has indicated that women in rural Sudan play a crucial role in improving their household food security 43%, as they contribute to food production 22%, enhance dietary quality 20% and consumption diversity 13%. Therefore, based on the findings in this paper, the major policy implication is that crucial role of women in this context can greatly be enhanced through adoption of supportive national and local development policy

Jennifer S. Savage(2013) investigated on eating problems like loss of appetite and promotion of hunger level evolve during the first years of life as biological and behavioral processes directed towards meeting requirements for health and growth. For the vast majority of human history, food scarcity has constituted a major threat to survival, and human eating behavior and child feeding practices have evolved in response to this threat. Because infants are born into a wide variety of cultures and cuisines, they come equipped as young omnivores with a set of behavioral predispositions that allow them to learn to accept the foods made available to them. It reveals that eating problems like loss of appetite 54% and promotion of hunger level 46% evolve during the first years of life

(Jennifer orletFisher,LeannL.Birch(2013)conducted study on current Eating Environment with like loss of appetite and promotion of hunger level. In most families, women still have primary responsibility for feeding children Changes in employment patterns and family structure; however, leave women with less time to devote to this activity. From 1975 to 2004, labor force participation among mothers with children less than 18 years of age increased from 47 to 71%. Moreover, both parents work in 61% of two-parent families

with children fewer than 18 years of age among single mothers, 72% are employed. Additionally, more women than men parent and feed their children without the assistance of a spouse: 23%. of children under 18 years of age live with their mother only. It shows that eating environment with loss of appetite 44% and promotion of hunger level 56% evolve during the first years of life

Karen Cullen (2013) conducted study on to overcome loss of appetite children may also lose their appetite if they are feeling unwell. This is usually accompanied by tiredness, grumpiness and/or physical indicators of sickness such as fever, cough, runny nose or rash. While sick children should not be forced to eat as much as they usually would, they should still be encouraged to eat at least some food throughout

the day. when loss of appetite is an indicator of a more serious problem. If the loss of appetite is sudden, out of character and/or prolonged, parents should not ignore it. Instead, it is important to find the root cause of the problem and deal with it so that your children can not only get the nutrition they need but also overcome the serious issues that caused the lack of appetite.

El-Bahr S.M, Al-Azraqi . A. A. (2013. Conducted study on appetite means getting hungry. it is natural process. food is needed for the nourishment of body and mind a is many physical problems. poor appetite is sickness or illness can often cause significant loss of appetite in children. does not like feel like eating meal can cause appetite loss can dislike certain of foods the child suffering from fever,rash,cough and running nose,then she may eat lesser than normally. stress can have many negative effects on children including loss of appetite. If you find your child is losing interest in eating or having a hard sleep to cure the poor appetite of your child. Some causes of stress during child hood periods. Family issue like death in the family, death of a pet or the birth of sibling bullying inability to cope with academic pressure and the impractical expectation of parents

Fatama , osaman, Ibnouf 2013(Jean Welsch (2014)They conducted study on depression can be another reason for child loss of appetite most of the parents mistake depression for sadness. but sadness depression are not same child get feeling of sadness go away with the passage of time. But depression not only makes the child but also interferes with normal life a changing eating habits is a strong indicator of depression leads to poor appetite.

Julie Mennella(2013) conducted study on stress causes loss of appetite in both children and adults. If you as a parent notice that your child not only lacks a desire to eat but is also sad and worried and has a hard time sleeping at night, then chances are he or she is overly stressed out. There are many reasons why a child may be stressed in fact, there may be more than one reason behind your child's problem and it is important to find out what these are. Some common reasons Family issues pending or recent divorce, death in the family, death of a much-loved

pet, birth of a new brother/sister, Bullying (be aware that this not only takes place at school; online bullying is fast becoming a common yet devastating problem
Unrealistic expectations related to academic and/or physical performance.

Leann Birch and Jennifer Fisher (2014) conducted study on child to lose o appetite, the appetite loss in such instances is likely to be temporary, especially if you have established a healthy eating routine as a family and do not allow your child to eat snacks to meal time. However, not all forms of appetite loss are temporary or innocent in nature. Appetite loss can be a sign that a child has a problem with stress, bullying, depression and/or an eating disorder. If your child has other alarming symptoms besides appetite loss, it is important for you as a parent to determine what the root cause of the problem is and see how it can be resolved. In some cases, appetite loss problems related to serious issues can be resolved fairly quickly. In other instances it may take longer to help a child overcome a serious mental or physical health issue. However, the quicker the problem is diagnosed, the faster it can be overcome. Parents should consider it part of their job to look out for their child's or teen's welfare by keeping an eye on what he or she is eating to ensure that the child (or teen) is getting the nutrition need.

Julie Mennella (2013) examined the influence of repeated prenatal exposure to carrot juice and found that women who consumed carrot juice for three consecutive weeks during their third trimester of pregnancy had infants who exhibited fewer negative facial expressions when first introduced to carrot-flavored cereal as compared to plain cereal. These findings reveal that experience with dietary flavors begins as the fetus is exposed to flavors from the maternal diet in uterus, and that this early experience can provide a "flavor bridge" that can begin to familiarize the infant with flavors of the maternal diet. As we will see, familiarity plays a key role in the acquisition of food and flavor preferences.

Leann Birch and Jennifer Fisher (2014) studies on association between weight status and children's caloric compensation in a sample of 197 non-Hispanic white five-year-old girls. Data were used from two separate lunches which differed in whether a low- or high-energy preload drink was consumed prior to lunch. Again, after a brief delay, participants ate a self-selected lunch (i.e., sandwich, carrots, applesauce, cookies, and milk) *ad libitum*. It indicated substantial individual differences in the extent to which girls adjusted their energy intake at lunch in response to the differences in preload energy content. On average the girls only compensated for about half of the energy in the preloads. In this case, greater maternal restriction in feeding was associated with poorer compensation and higher weight status in daughters.

Stephen et al (2011) conducted study on protective effects to be more consistently noted among school-aged children and adolescent than among younger children. One possible explanation is that the impact of breastfeeding on subsequent weight status may be an example of metabolic or behavioral programming, in which the impact of breastfeeding on weight status only emerges later in development, and in this case, may not be clearly manifested until adolescence or adulthood. However, at this point, the mechanism(s) by which breastfeeding exerts protective effects are not understood. Specifically, breastfeeding is the ideal feeding method for the human infant and influences the developing anatomy and physiology of the gastrointestinal tract in ways that differ from formula feeding, such that breast-fed and formula-fed individuals may differ in the absorption and utilization of nutrients later in life.

Susan Johnson and Leann Birch (2013) conducted study on weight status on regulation of energy intake in seventy-seven three- to five-year-old children. Each child participated in two treatments, differing only in whether children received a low- or high-calorie preload of fruit flavored drinks of equal volume before lunch. After twenty minutes, children self-selected intake from a familiar lunch menus (i.e., turkey hot dogs, American cheese, unsweetened applesauce, carrot sticks, fruit bars,

and 2% milk) to assess their ability to adjust food intake in response to changes in energy density of the preload drinks. They found that children who showed little evidence of adjusting their lunch intake in response to the energy differences in the preloads were significantly heavier.

Vinick(2013) conducted study on agricultural production (farm and livestock products) with supplemental resources (processed and preserved food items) and substitute resources (forest trees and wild food products) represent the available resources for the household food consumption in rural Sudan. Income generating activities along with other possible income sources (cash crops, trees products, pension, assets, remittance from migrants, and savings sources) provide household with income to afford foods. The finding of this study implies that in most rural areas in Sudan women are more capable than men in terms of the ability to use and allocate the available resources for the purpose to improve food security for their families.

Young LR, Nestle M(2013)children's preferences for and acceptances of new foods are enhanced with repeated exposure to those foods in a non-coercive setting. New foods may need to be offered to preschool-aged children 10 to 16 times before acceptance occurs. At the same time, simply offering new foods will not necessarily produce liking; having children taste new foods is a necessary part of the process. Awareness of this normal course of food acceptance is important because approximately one quarter of parents with infants and toddlers prematurely drew conclusions about their child's preference for foods after two or fewer exposures

(Clara Davis 2012-2013) conducted seminal research in, providing the first evidence of an unlearned ability to self-regulate energy intake in infancy. In Davis' studies, infants and toddlers grew well and had few illnesses when given the opportunity to select and consume a variety of simply prepared foods at each meal. As previously mentioned, Samuel Fomon and colleagues revisited the issue of self-regulation of energy intake by systematically varying the energy density of infant formula. By six

weeks of age, full-term infants who were fed a concentrated formula (100 kcal/mL) consumed smaller volumes than did those infants who were fed a diluted formula (54 kcal/mL), such that total daily energy intake did not differ between the two groups.

Nielsen SJ, Siega-Riz AM, Popkin BM (2012) conducted a study on children's eating patterns develop in the early social interactions surrounding feeding. As young omnivores, they are ready to learn to eat the foods of their culture's adult diet, and their ability to learn to accept a wide range of foods is remarkable, especially given the diversity of dietary patterns across cultural groups. Several decades of research inside and outside of the laboratory have revealed that, as in other areas of children's development, caregivers act as powerful socialization agents. Parents select the foods of the family diet, serve as models of eating that children learn to emulate, and use feeding practices to encourage the development of culturally appropriate eating patterns and behaviors in children.

Sharon Pearcey and John De Castro (2012) observed complemented these experimental findings, revealing that individual variability in energy consumed at meals among twelve-month-old infants was close to forty-seven percent, while variability in daily energy intake was seventeen percent. Similarly, Roberta Cohen and colleagues found no difference in daily energy intake among infants four to six months of age who were fed only breast milk versus those who were fed breast milk along with complementary foods, suggesting that infants were adjusting their intake of breast milk in response to the addition of solid foods.

Helen Hendy and Bryan Raudenbush(2011) found that children's intake of a novel food increased at those meals during which they observed a teacher enthusiastically consuming the food. Interestingly, enthusiastic modeling by a teacher was not as effective when children were seated with peers who exhibited different food preferences than did their teachers. While one might expect modeling by parents to

have a similar if not stronger influence on children's preference and choices, experimental evidence is lacking.

Karen Cullen (2011) examined the relationships among availability, accessibility, and preferences for fruit, 100% fruit juice, and vegetables in a sample of eighty-eight fourth through sixth graders and their parents. It revealed that availability was the only significant predictor of intake for children reporting high preferences, whereas for children reporting low preferences, availability and accessibility were significantly related to consumption of fruits, vegetables, and 100% fruit juice. Thus, accessibility appears to be particularly important for children with low preferences for fruit, 100% fruit juice, and vegetables.

Stephan Arenz(2011) reviewed twenty-eight studies investigating the association between breastfeeding and childhood obesity that met the following inclusion criteria: relative risk had to be reported, age at last follow-up had to be between 5 and 18 years, feeding mode had to be reported, and obesity had to be defined using BMI. Of these twenty-eight studies, nine studies comprising more than 69,000 children were eligible for the meta-analysis. They found a significant adjusted odds ratio (AOR) for “ever breastfed” of 0.78, 95% CI (0.71-0.85) in the fixed model.²¹ These odds ratios, which are significantly lower than 1.0, indicate a significantly lower risk for subsequent obesity among those who were breastfed, even when adjusting for other factors.

(Polly Kratt, Kim Reynolds, and Richard Shewchuk(2010) examined the role of availability of fruits and vegetables in the home and found that homes with greater availability had a stronger set of motivational factors (e.g., self efficacy and behavioral capability/knowledge of parents) for fruit and vegetable consumption compared to homes with low fruit and vegetable availability. Furthermore, the availability of fruits and vegetables was a moderating variable for intake by both parents and children. The findings are much the same for milk drinking. In a study of

beverage intake among girls during middle childhood, milk consumption among girls almost always or always served milk at meals and snacks was two times higher than it was for girls rarely or never served milk.

2.2 Conceptual framework

Conceptual frameworks are structured from a set of broad ideas and theories that help a researcher to properly identify the problem they are looking at frame their questions and find suitable literature. Most academic research uses a conceptual framework at the outset because it helps the researcher to clarify his research question and aims. **Smyth (2004)**

The conceptual work of this study is based on the Roy's adaptation theory. This theory was developed by Sr. Callista Roy in 1963. According to Roy's Adaptation theory, the nursing process is a problem solving approach for gathering data, identifying the capacities and needs of the human adaptive system, selecting and implementing approaches for nursing care, and evaluating the outcome of care provided. Roy explained that system has 3 major aspects

- Input
- Throughput
- Output
- **Input**

Input is defined as a stimulus coming from the environment or from within a person. Roy mentioned three types of stimuli

1. Focal stimuli: The internal or external stimulus most immediately confronting the person for that cluster of behaviors. They focus on it. In this study the focal stimuli is promoting appetite or hunger level among the children admitted in paediatric ward.

2. Contextual stimuli: All other stimuli present in the situation that contribute to the effect of the focal stimulus. It can be internal or external and can have a positive or negative effect.

Contextual stimuli in this study are the children having loss of appetite due to various medical causes like indigestion, worm infestation, and improper time intake of food, high oil content food and pathology in GI system among the children.

3. Residual stimuli: Environmental factors in or out of the person, and their effects are not clear in the current situation.

Pre assessment of children have food intake habits like ravenous appetite, hunger, starving, pretty hungry, stomach growling and food additives. Appetite level was assessed by using a Hunger scale. It is a subjective hunger scale, consisting of ten scores. The hunger score starts from 0 to 10.

Through put

It denotes the different operational procedures applied in the study group. In this study for experimental group cumin water 150 ml three times per day is administered for five days as a intervention along with routine nursing care like polite talk, comfortable position, explanation of the care and psychological support.

In this study for control group along with routine nursing care like polite talk, comfortable position, explanation of the care and psychological support.

Output

Output is any information that leaves the system and enters the environment through the system boundaries. Output is the outcome of the system. In Roy's adaptation system, output is categorized as an adaptive response (or) ineffective response. Adaptive responses are used when a person demonstrates behaviours that achieve the goals. These response or output provides feedback for the system. In this promotion in hunger level and food intake habits like ravenous appetite, hungry, starving, pretty hungry, stomach growling and food additives. Appetite level was assessed by using a Hunger scale. Ineffective response is reassessed to achieve a effective response. In this study for experimental group administration of cumin water 50 ml three times

per day for five days as a intervention along with routine nursing care like polite talk, comfortable position, explanation of the care and psychological support showed a markedly no improvement in hunger level .

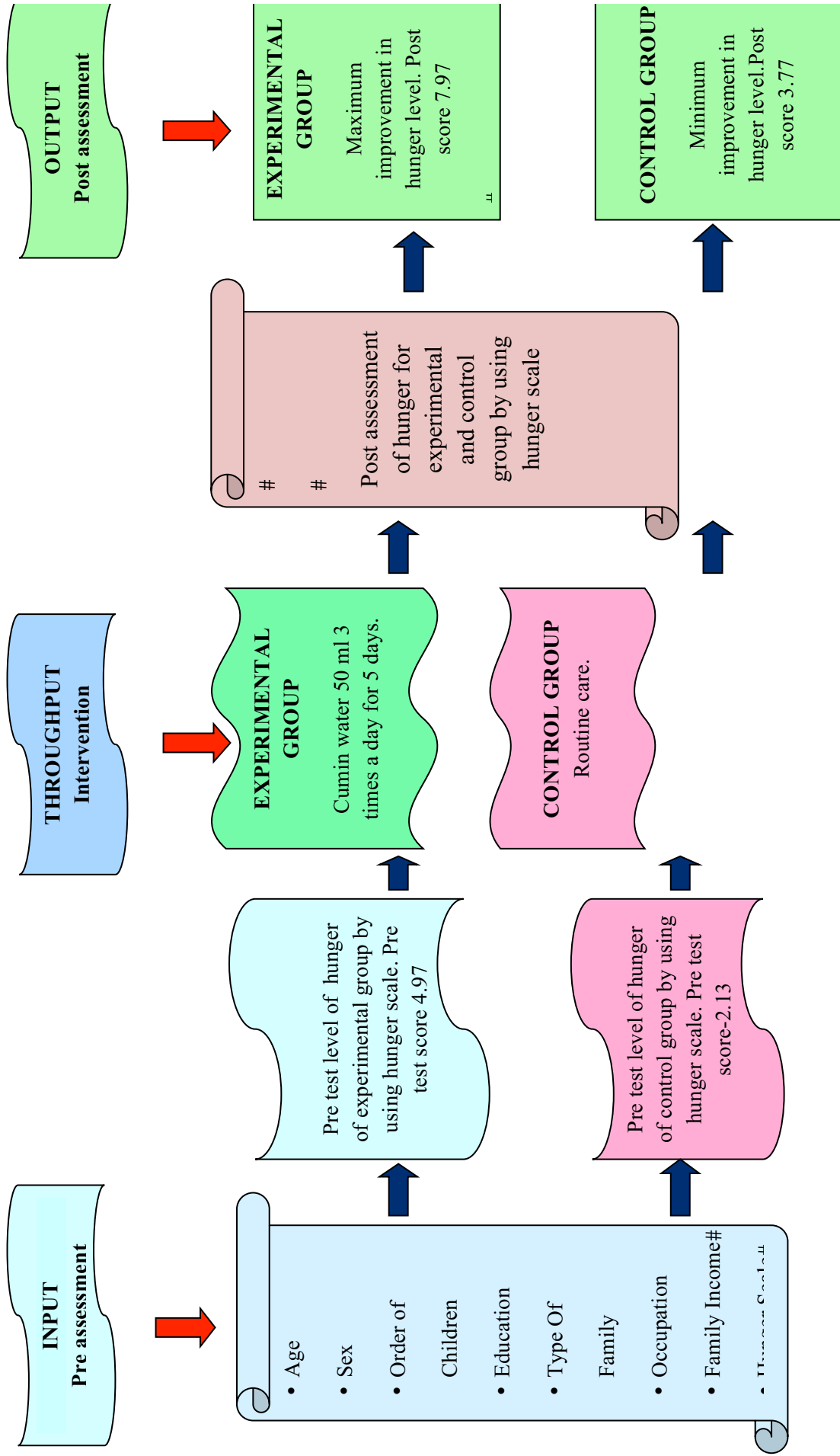


FIG-1: Conceptual framework based on modified Roy adaptation model clinical nursing theory (1963)

CHAPTER -III

METHODOLOGY

This chapter deals with the description of methodology and different steps. It includes description of research approach, research design, setting, sample and sampling techniques, development and description of tools, development of Pediatric Health education, pilot study, data collection and plan for data analysis.

3.1 Research approach

A research approach was quantitative research approach.

3.2 Data collection procedure:

The data collection was done from 16.7.15 to 15.8.15 four weeks the main study was conducted to meet the objectives of the present study.

3.3 Study Setting:

The setting is the location where the study is conducted. The study was conducted in medical ward, at Institute of Child Health and Hospital for Children, Chennai.

3.4 Study design

The research design adopted for this study was quasi experimental, Non randomized control group design

Selected group		Pre-test	Intervention	Post-test
Children with loss of appetite admitted in medical ward	Experimental	Assess the level of hunger among children (01)	Administration of cumin water (x)	Determine the level of improvement of hunger among children (02)
	Control	Assess the level of hunger among children (03)	Children are routine care diet pattern (x)	Determine the level of hunger among children (04)

Schematic outline of research design

The symbols used were described as

O₁: Pre-test to assess the level of hunger among children before administering cumin water.

X: Administration of cumin water among children.

O₂: Post-test to determine the level of improvement of hunger among children after administering cumin water.

O₃: Pre-test to assess the level of hunger among children

X: Routine care among the children.

O₄: Post-test to determine the level of hunger among children in control group.

3.5 :STUDY POPULATION:

In the present study the population comprised of children age group of 6-12 years having complaints of loss of appetite, refusal of food, not properly consuming of food at proper time, who are admitted in medical ward at Institute of Child Health and Hospital for Children, Chennai.

3.6 SampleSize

Sample size consists of 60 selected children in which 30 experimental and 30 control group with complaints of low level of hunger and with loss of appetite admitted in medical ward, at Institute of Child Health and Hospital for Children.Chennai.

3.7 Sampling criteria

3.7.1 Inclusion criteria

- Children between aged 6-12 years admitted in medical ward with low level of hunger and with loss of appetite with medical disease condition.
- Parents who are willing to participate with their children in study.
- Parents of children with low level of hunger and with loss of appetite and for those who are able to read and write Tamil and English.

3.7.2 Exclusion criteria

- Parents of children with low level of hunger and with loss of appetite for those who cannot follow instructions
- Parents of children with low level of hunger and with loss of appetite and those who are not willing to participate
- Parents of children with low level of hunger and with loss of appetite and their whose children who had other gastro intestinal disorders

3.8 Sampling technique:

In this study non-probability purposive sampling technique was used in 60 samples of selected children

3.9 Research variables:

Variables are qualities, properties or characteristics of person things or situations that changes or vary. The variables mainly included in this study are independent and dependent variable. Dependent variable explains the effects of independent variable.

Dependent variables:

Level of hunger among children with loss of appetite admitted in paediatric medical ward,atInstitute of Child Health and Hospital for Children. Chennai.

Independent variables:

Administration of cumin water to improve hunger level in children appetite admitted in paediatric medical ward,atInstitute of Child Health and Hospital for Children. Chennai.

Demographic variables:

Information likeage, sex, birth order, education of child, type of family, occupation of parents, and family monthly income. Clinical variables like weight of the child, aware of appetizer, Diet pattern, child has desire to eat, children consume meal per day, the mother can identifies hunger, the child show hunger feeling, child like to consume junk foods, de-worming, child bowel habits, Consistency of stool, children become sick and Duration of hospitalization.

3.10 DEVELOPMENT AND DESCRIPTION OF TOOL:

3.10.1 DEVELOPMENT OF THE TOOL:

The investigator developed the data collection tool based on review of literature, expert opinion and content validity from medical, nursing statistical department. And constructed tool. pretesting of tool was done. During pilot study, direct assessment of client was performed during the data collection. In the present study of hunger scale 1-10 numerical assessment scale shows that 1-3 is having appetite, 4-6 is satisfied and 7-10 is loss of appetite with sickness.

The higher score - Loss of appetite with sickness.

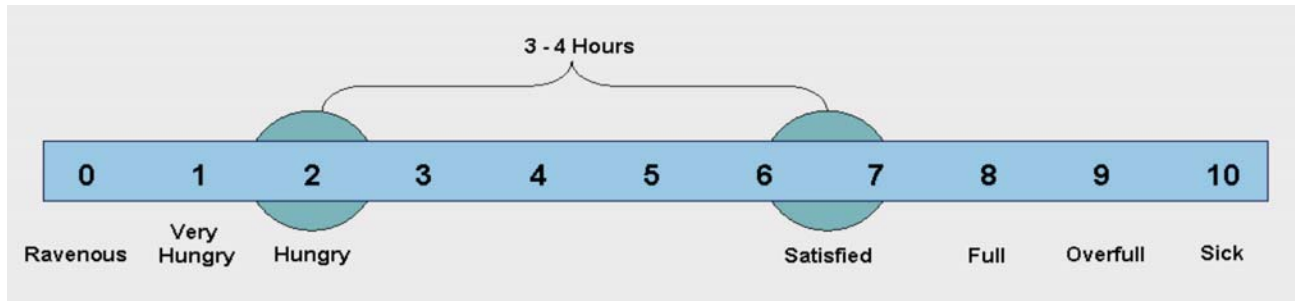
The lower score – Having appetite

3.10.2 DESCRIPTION OF TOOL:

The tools comprised of two sections;

Section A: consists of demographic data which included information of respondents about Age, sex, birth order, education of child, type of family, occupation of parents, and family monthly income. Clinical variables were weight of the child, aware of appetizer, Diet pattern, child is desire to eat, child is consumption of meal per day, the mother can identifies hunger, the child show hunger feeling, child like to consume junk foods, de-worming, child bowel habits, Consistency of stool, children become sick and Duration of hospitalization.

Section B: consists of 10 items of objective type of hunger assessment scale inventory related to loss of appetite with low level of hunger and the feel of sickness. In the present study have 1-10 hunger assessment scale shows as shown below.



THE HUNGER SCALE:

- 0- Ravenous appetite
- 1- Starving and feeling weak/dizzy
- 2- Very hungry ,irritable, low energy, large amount of stomach growling
- 3- Pretty hungry, stomach is beginning to growl
- 4- Beginning to feel hungry
- 5- Satisfied, neither hungry nor full
- 6- Slightly full/pleasantly full.
- 7- Slightly uncomfortable
- 8- Feeling stuffed
- 9- Very uncomfortable, stomach aches
- 10- So full you feel sick

3.10.3 Content validity:

Data collection, tool is an instrument that measures the variables of interest of the study accurately, precisely. In the present study, content validity of the tool was obtained from medical and nursing experts in the field of child health. They suggested certain modifications in tool. After the modifications they agreed this tool for assessing children with loss of appetite and low level of hunger with medical illness that were admitted in medical ward, atInstitute of Child Health and Hospital for Children. Chennai.

3.11 Ethical consideration:

Approval obtained from the institutional ethical committee, Madras Medical College, Chennai. The parents were explained about the purpose and need of the study. They were assured that their details and answers will be used only for the research purpose. Further they were assured that their details will be kept confidentially. Thus the investigator followed the ethical guidelines, which were issued by the ethical committee. Written permission was obtained from all the participants before conducting the study.

3.12 Pilot study:

Pilot study was conducted in a medical ward, at Institute of Child Health and Hospital for Children, Chennai. For pilot study 10 children were selected by non probability purposive sampling technique. cumin water given and post test conducted and data collected.

3.13 Reliability:

Reliability of the tool was determined by using split-half-method. Impact of disability score reliability correlation coefficient value is 0.85. This correlation coefficient is very high and it is good tool for assessing the children with loss of appetite and low level of hunger with medical illness that were admitted in medical ward, at Institute of Child Health and Hospital for Children, Chennai.

3.14 Data collection procedure:

Intervention protocol:

Place : Medical ward, Institution of child health

Dose : 50 ml cumin water (prepared from 3 grams of cumin seeds)

Duration : 3 times in a day /before food

Administered by : Investigator

Data collection procedure:

The data collection was done from 16.7.15 to 15.8.15 four weeks the main study was conducted to meet the objectives of the present study. The investigator selected 60 samples from medical ward, among them 30 were given cumin water and 30 were given sweet warm water 150 ml 3 times a day for 5 days before food.

Data collection is gathering of information needed to address a research problem. The researcher collected the data's from the parents and children admitted in medical ward at Institute of Child Health and Hospital for Children, Chennai on 14th July 2015. Prior permission was obtained from the Director and ward in-charge doctor. The main study was planned for a period of four weeks that is from 16th July 2015 to 17th August 2015. Initially the researcher approaches each parent visiting the medical ward with the permission from Director; Institute of Child Health and Hospital for Children, Chennai.

Total of 84 parents and children were admitted in the medical ward. Among them 60 were selected as experimental 30 and control 30 samples as the non-probability purposive sampling technique.

Phase 1: The mothers and children were introduced and explained with the whole programme after a self introduction, and then written consent was obtained for their willingness to participate in the study.

Phase 2: The pre-test was conducted by distributing the tool on Hunger scale on loss of appetite and low level of hunger with medical illness admitted in medical ward at, Institute of Child Health and Hospital for Children Chennai. Then 150 ml of cumin water was administered three times a day for consecutive three to five days dividing them as given as level I, II, and II. Health education was given on benefits of cumin water for 45 minutes with suitable A.V. Aids.

Phase 3: on 6th day the post-test was done on the same children by using same tools .All the parents were very cooperative and the researcher expressed her gratitude for their cooperation and expressed their desire to know more

S.No	Session	Duration
1	Meaning and definition of Hunger and loss of appetite.	Day -1
2	Prevalence and current data of loss of appetite and low level of hunger in Tamil Nadu and India	
3	Difference between Hunger and loss of appetite.	Day -2
4	Causes of Hunger and loss of appetite.	
5	Clinical manifestation of Hunger and loss of appetite.	Day -3
6	A child is liking to eat junk food and explanation on its adverse effects.	Day -3
7	Explain on the desire of eating habit, consuming food per day, role of mother, child show hunger feeling etc...	Day -4
8	Health education on de-worming, bowel habit, watch consistency of stool, reasons for children becoming sick and hospitalized	
9	Discussion, distribution of pamphlets and guide Post test	Day
	Total	5 Days

3.1 Data entry and analysis:

The data collected were analyzed by using, descriptive and inferential statistics. like (mean, standard deviation, frequency, percentage and inferential statistics like chi-square test, student paired t- test.

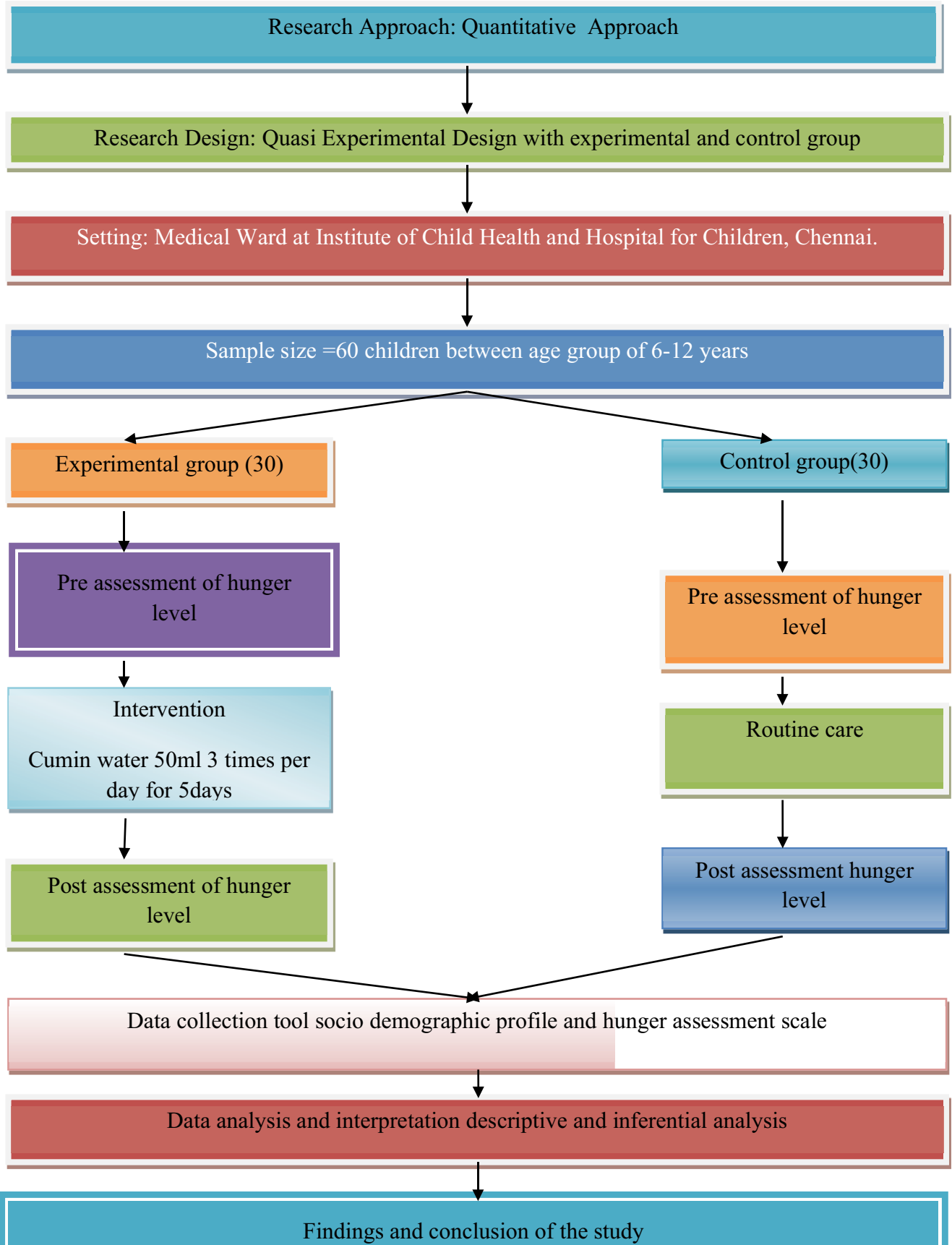
Descriptive statistical methods:

1. Frequency, percentage, mean and standard deviation were used.

2. Inferential statistical methods:

Chi-square test was used to find out the association between the levels of loss of appetite score and selected demographic variables among parents of children with loss of appetite and low level of hunger with medical illness admitted in medical ward.

FIG.2: SCHEMATIC APPROACH OF THE STUDY



CHAPTER IV

ANALYSIS AND INTERPRETATION

- SECTION I : Socio demographic characteristics of the study subjects
- SECTION II : Hunger related variables
- SECTION III : Pretest Hunger Scale score
- SECTION IV : Pre test Level of Hunger
- SECTION V : Post test Hunger Scale Score
- SECTION VI : Post test Level of Hunger
- SECTIONVII : Pre test and Post test Hunger Scale Score
- SECTION VIII : Effectiveness of Cumin Water
- SECTION IX : Association between the demographic variables and level of
hunger in experimental group
- SECTIONX : Association between the demographic variables and level of
hunger in control group
- SECTION XI : Association between the Hunger variables and level of
hunger in experimental group
- SECTION XII : Association between the Hunger variables and level of
hunger in control group.

Table 1: DEMOGRAPHIC PROFILE

Demographic variables		Group			
		Experiment		Control	
		requeency	In%	frequenc y	In %
Age	6- 8 years	10	33.33	10	33.33
	9-10 years	10	33.3	10	33.3
	11- 12 years	10	33.4	10	33.4
Sex	Male	20	66.7	15	50.0
	Female	10	33.3	15	50.0
Order of birth	First	17	56.7	11	36.7
	Second	10	33.3	10	33.3
	Third	3	10.0	9	30.0
Education	Primary	15	50.0	18	60.0
	Secondary	15	50.0	12	40.0
Types of family	Nuclear family	15	50.0	11	36.7
	Joint family	11	36.7	12	40.0
	Extend family	4	13.3	7	23.3
Occupation	Skilled worker	12	40.0	9	30.0
	Profession	12	40.0	11	36.7
	Business	6	20.0	10	33.3
Family income	Rs.1590- 4726	6	20.0	9	30.0
	Rs.4727-7877	16	53.3	10	33.3
	Rs.7878- 10877	8	26.7	11	36.7

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Table 1 shows the demographic information of children of those who participated in the following study it reveals that age wise equally the children were 33.3%, sex wise most of them were male 66.7%, order of birth wise majority of children were first 56.7%, education shows that equally educated were 50%, in the type of family highest of them were nuclear family-50%, occupation wise least was business 20.0%, and monthly income reveals that majority of them were of middle income group 53.3%.

Hunger related variables		Experiment Group		Control Group		Chi square test
		frequency	In %	frequency	In%	
Weight of the child	15.1-20.0 k	17	56.7	15	50.0	$\chi^2=0.71$ P=0.70 DF=2
	20.1-25.0 kg	8	26.7	11	36.7	
	>25.0 kg	5	16.6	4	13.3	
Aware of appetizer	Aware	8	26.7	13	43.3	$\chi^2=2.51$ P=0.28 DF=2
	Already using	10	33.3	10	33.3	
	Not aware	12	40.0	7	23.3	
Diet pattern	Vegetarian	2	6.7	4	13.3	$\chi^2=2.51$ P=0.28 DF=2
	Non - vegetarian	16	53.3	17	56.7	
	Mixed	12	40.0	9	30.0	
Desire to eat	likely to eat	2	6.7	3	10.0	$\chi^2=0.24$ P=0.88 DF=2
	compulsion	15	50.0	15	50.0	
	aversion	13	43.3	12	40.0	
Child taking meals per day	1 meal a day	16	53.3	11	36.7	$\chi^2=2.37$ P=0.30 DF=2
	2 meal a day	12	40.0	14	46.7	
	> 2 meal a day	2	6.7	5	16.7	
Mother identifies hunger	By asking food	12	40.0	6	20.0	$\chi^2=2.87$ P=0.23 DF=2
	Time being	11	36.7	15	50.0	
	Tired	7	23.3	9	30.0	
Child reacting to hunger	By asking	10	33.3	14	46.7	$\chi^2=1.31$ P=0.51 DF=2
	Shouting	11	36.7	10	33.3	
	Abdominalpain	9	30.0	6	20.0	
Likely to take junk foods	Yes	17	56.7	15	50.0	$\chi^2=0.8$ P=0.64 DF=2
	No	5	16.7	8	26.7	
	Occasionally	8	26.7	7	23.3	

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Deworming is done	Regularly	3	10.0	7	23.3	$\chi^2=2.40$ P=0.30 DF=2
	Occasionally	15	50.0	15	50.0	
	Not done	12	40.0	8	26.7	
Bowel habits	Twice a day	19	63.3	12	40.0	$\chi^2=3.29$ P=0.19 DF=2
	Thrice a day	7	23.3	11	36.7	
	More than thrice a day	4	13.4	7	23.3	
Consistence of stool	Soft stool	16	53.	13	43.3	$\chi^2=1.38$ P=0.50 DF=2
	Solid stool	8	26.7	7	23.3	
	Hard stool	6	20.0	10	33.3	
Child became sick	Once in six months	5	16.7	6	20.0	$\chi^2=0.30$ P=0.86 DF=2
	More than one year	13	43.3	11	36.7	
	Never	12	40.0	13	43.3	
Duration of hospitalization	Less than 3 days	21	70.0	16	53.3	$\chi^2=1.71$ P=0.46 DF=2
	3-7 days	6	20.0	8	26.7	
	More than 7 days	3	10.0	6	20.0	

Table 2: HUNGER RELATED VARIABLES

Table 2 shows the hunger related information of children those who are participated in this study.

weight of the child:In the experimental group, 17(56.7%) the weight of the child ,15.1-20.0kg ,8(26.7%) the weight of the child 20.1-25.0 kg ,5(16.67%) the

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weight of child of more than 25.0 kg ..In control group 15(50%) the weight of the child, 15.1-20.0kg. the weight of the child,11(36.7%) the weight of child 20.1-25.0kg.weight of the child 4(13.3%)weight of the child> 25.0 kg.

Aware of appetizer: In experimental group about 8 (26.7%) were in the aware of appetizer aware10 (13.3%) 10(33.3%) were in the already using 12(40.0%) were in the not aware. in control group 13(43.3%) were in the aware 10(33.3%) were in the already using 7(23.3%) were in the not aware.

Diet pattern: in the experimental group 2(6.7%) were in the vegetarian 16(53.3%) were in the non-vegetarian 12(40.%) were in the mixed. In control group 4(13.35) were in the vegetarian 17(56.7%) were in the non-vegetarian 9(30.0%) were in the mixed.

Desire to eat: in experimental group 2(6.7%) likely to eat 15(50.0%) were compulsion 13(43.3%) were aversion. In control group 3(10.0%).likely to eat.15(50.0%) compulsion (12.40.0%) aversion

Child taking meals per day:In experimental group 16(53.3%) one meal a day12(40.07%) 2meal a day 2 (6.7%) > 2 meal a day. In control group 7(36.7%) one meal a day 14(46.7%) 2 meal a day 5(16.7%) > 2 meal a day

Mother identifies hunger:In Experimental group,12 (40.0%) by asking food ,11(36.7%) time being,7(23.3%) tired. In control group, 6 (20.0%) by asking food, 15(50.0%)time being, 9 (13.0%)tired.

Junk foods:In experimental group, 17 (56.7%)yes,5(16.7%)no,8 (26.7%) occasionally. In control group 15(50.0%) yes 8(26.7%) no 7(23.3%) occasionally

Deworming: in experimental group 3(10.0%) regularly 15(50.0%) occasionally 12 (40.0%) not done in control group 7(23.3%) regularly 15(50.0%) occasionally 8(26.7%) not done.

Bowel habits: In experimental group 19(63.3%) twice a day7(23.3%) thrice a day 4(13.4%) more than thrice a day. In control group 12(40.0%) twice a day 11(36.7%) thrice a day 7(23.3%) > thrice a day 7(23.3%) > thrice a day

Consistency of stool: In experimental group 16(53.6%) soft stool 8(26.7) solid stool 6(20.0%) hard stool in control group 13(43.3%) soft stool 7(23.3%) solid stool 10(33.3%) hard stool

Child became sick: in experimental group 5(16.7%) once in 6 month 13(43.3%) more than 1 year 12(40.0%) never . in control group 6(20.0%) once in six month 11(36.7%) more than 1 year 13(43.3%) never

Duration of hospitalization: in experimental group 21(70.0%) < 3 days 6(20.0%) 3-7 days 3(10.0%) > 7 days in control group 16(50.3%) < 3 days 8(26.7%) 3-7 days.

objective 1: To assess the hunger level before cumin water between experiment and control group of children

Table 3: PRETEST HUNGER SCALE

Sno	Items	<i>Experiment</i>		<i>Control</i>	
		<i>No. of frequency</i>	<i>In %</i>	<i>No. of frequency</i>	<i>In %</i>
1	Starving and feeling weak/dizzy	0	0.0	0	0.0
2	Very hungry, irritable, low energy, large amount of stomach growling	0	0.0	0	0.0
3	Pretty hungry, stomach is beginning to growl	0	0.0	0	0.0
4	Beginning to feel hungry	0	0.0	0	0.0
5	Satisfied, neither hungry nor full	0	0.0	0	0.0
6	Slightly full/pleasantly full	0	0.0	0	0.0
7	Slightly uncomfortable	10	33.3	8	26.7
8	Feeling stuffed	11	36.7	10	33.3
9	Very uncomfortable, stomach aches	9	30.0	12	40.0
10	So full you feel sick	0	0.0	0	0.0
	TOTAL	30	100.0	30	100.0

In the pre-test, 33.3% of the children felt slightly uncomfortable, 36.7% children felt stuffed, 30% of the children felt very uncomfortable with stomach ache

In the control group 26.7% of the children felt slightly uncomfortable, 33.3% of the children felt stuffed, 40% of the children felt very uncomfortable with stomach ache.

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Table 4: PRETEST LEVEL OF HUNGER

Hunger level	Experiment		Control		Chi square test
	<i>frequency</i>	In%	<i>frequency</i>	In%	
Hungry	0	0.0	0	0.0	$\chi^2=0.00$ p=1.00 DF=1 not significant
Normal	0	0.0	0	0.0	
Full	60	100.0	60	100.0	
Total	60	100.0	60	100.0	

Hunger level	<i>frequency</i>	Hunger scale score		Mean difference	Student independent t-test
		mean score	SD		
Experiment	30	4.97	0.81	0.16	$t=0.79$ p=0.43 DF=1 not significant
Control	30	2.13	0.82		

't' = 0.79 p=0.43 not significant

Among experimental group, in pre-test, they are having 4.97 hunger scale score and control group are having 2.13 hunger scale score, so the difference is 0.16, this difference is small and it is not statistically significant. It was calculated using student independent t-test.

Objective 2: To assess the hunger level before cumin water between experiment and control group of children

Table 5: POSTTEST HUNGER SCALE SCORE

Sno	Items	<i>Experiment</i>		<i>Control</i>	
		<i>frequency</i>	<i>In%</i>	<i>frequency</i>	<i>In%</i>
1	Starving and feeling weak/dizzy	0	0.0	0	0.0
2	Very hungry ,irritable, low energy, large amount of stomach growling	0	0.0	0	0.0
3	Pretty hungry, stomach is beginning to growl	5	16.7	0	0.0
4	Beginning to feel hungry	3	10.0	0	0.0
5	Satisfied, neither hungry nor full	11	36.6	0	0.0
6	Slightly full/pleasantly full	8	26.7	3	6.7
7	Slightly uncomfortable	3	10.0	7	33.3
8	Feeling stuffed	0	0.0	11	36.7
9	Very uncomfortable, stomach aches	0	0.0	9	23.3
10	So full you feel sick	0	0.0	0	0.0
	TOTAL	30	100.0	30	100.0

In the post test status:

In experimental group 16.7% of the children felt pretty hungry stomach is beginning to grow 10% begun to feel hungry 36.6% of children were satisfied 26.7% of children felt slightly full 10% of children felt slightly uncomfortable.

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Table 6: POSTTEST LEVEL OF HUNGER

Hunger level	Experiment		Control		Chi square test
	<i>frequency</i>	In %	<i>frequency</i>	In %	
Hungry	5	16.7	0	0.0	$\chi^2=38.64$ p=0.001*** DF=2 significant
Normal	22	73.3	3	10.0	
Full	3	10.0	27	90.0	
Total	30	100.0	30	100.0	

$\chi^2=38.64$ p=0.001***

DF=2 significant

Among experiment, 16.7% of the children are having hungry score, 73.3% of them are having normal score, 10% of them are having full score whereas in control group, none of the children are having hungry score, 10.0% of them are having normal score, 90% of them are having full score. There is a statistically significant difference between experiment and control group. It is confirmed using chi square test.

Hunger level	No. of children	Hunger scale score		Mean difference	Student independent t-test
		Mean score	SD		
Experiment	30	7.97	1.08	2.83	t=11.04p=0.001*** significant
Control	30	3.77	0.89		

t=11.04p=0.001*** significant

Among experiment, in post test, they are having 7.97 hunger scale score and control group are having 3.77hunger scale score, so the difference is 2.83.This difference is large and it is statistically significant. It is calculated using student independent t-test.

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Objective 3: To determine the effectiveness cumin water comparing level of hunger in control and experimental group.

Table 7: PRETEST AND POSTTEST HUNGER SCLAE SCORE

Group		Mean	N	Std. Deviation	Mean Difference	Student paired t-test
Experiment	Pre	4.93	30	0.81	3.03	t=15.58p=0.001*** significant
	Post	7.97	30	1.08		
Control	Pre	2.13	30	0.82	0.37	t=1.87p=0.07 Not significant
	Post	3.77	30	0.89		

Among experiment group, in pre test they are having 4.93 hunger scale score and in post test they are having 7.97 score, so the difference is 3.03. This difference is large and it is statistically significant.

Among control group, in pre test they are having 2.13 hunger scale score and in post test they are having 3.77 score, so the difference is 0.37. This difference is small and it is not statistically significant. It was calculated using student paired t-test.

Table 8: EFFECTIVENESS OF CUMIN WATER

		<i>Max score</i>	<i>Mean score</i>	Mean Difference in with 95% Confidence interval	Percentage of with 95% Confidence interval
Experiment	Pretest	10	4.93	3.03(2.64 – 3.43)	30.3 % (26.4% –34.3%)
	Posttest	10	7.97		
Control	Pretest	10	2.13	0.37(0.16 – 0.57)	3.7 % (1.0% –5.07%)
	Posttest	10	3.77		

Table no 8 shows the comparison of overall hunger score between pretest and posttest.

In experiment group, **child promote hunger 30.3% of** hunger scale score after cumin water where as **control group 3.7%**.This shows the effectiveness of cumin water. Differences between pretest and posttest score was analysed using percentage with 95% CI and mean difference with 95% CI.

Objective 4: To find the association between the selected demographic variables and level of hunger in control and experimental group

Table 9: ASSOCIATION BETWEEN THE DEMOGRAPHIC VARIABLES AND LEVEL OF HUNGER IN EXPERIMENTAL GROUP

Demographic variables		Level of hunger scale score				Total	Chi square test
		Below average(≤ 3.03)		Above average(> 3.03)			
		Count	In%	Count	In%		
Age	6- 8 years	2	20.0	8	80.0	10	$\chi^2=7.20$ $p=0.05^*$ $DF=2$
	9-10 years	5	50.0	5	50.0	10	
	11- 12 years	8	80.0	2	20.0	10	
Sex	Male	12	60.0	8	40.0	20	$\chi^2=2.40$ $p=0.12$ $DF=1$
	Female	3	30.0	7	70.0	10	
Order of birth	First	10	58.8	7	41.2	17	$\chi^2=2.46$ $p=0.29$ $DF=2$
	Second	3	30.0	7	70.0	10	
	Third	2	66.7	1	33.3	3	
Education	Primary	4	26.7	11	73.3	15	$\chi^2=6.53$ $p=0.01^{**}$ $D=1$
	Secondary	11	73.3	4	26.7	15	
Types of family	Nuclear family	4	26.7	11	73.3	15	$\chi^2=2.33$ $p=0.05$ $DF=2$
	Joint family	8	72.7	3	27.3	11	
	Extend family	3	75.0	1	25.0	4	
Occupation	Skilled worker	8	66.7	4	33.3	12	$\chi^2=6.$ $p=0.05$ $DF=2$
	Profession	5	41.7	7	58.3	12	
	Business	2	33.3	4	66.7	6	
Monthly income	Rs.1590- 4726	4	66.7	2	33.3	6	$\chi^2=2.33$ $p=0.11$ $DF=2$
	Rs.4727-7877	6	37.5	10	62.5	16	
	Rs.7878-10877	5	62.5	3	37.5	8	

Hunger score= pretest-posttest, Table 9 shows the association between the level of hunger score with the demographic variables. Younger and primary educated had more hunger score. Statistical significance was calculated using chi square test.

Table 10: ASSOCIATION BETWEEN THE HUNGER RELATED VARIABLES AND LEVEL OF HUNGER IN EXPERIMENTAL GROUP

		Level of hunger scale score				Total	Chi square test
		Below average(≤ 3.03)		Above average(> 3.03)			
			%		%		
Weight of the child	15.1-20 kg	10	58.8	7	41.2	17	$\chi^2=6.82$ $p=0.05^*$ $DF=2$
	20.1-25 kg	1	12.5	7	87.5	8	
	> 25 kg	4	80.0	1	20.0	5	
Aware of appetizer	Aware	4	50.0	4	50.0	8	$\chi^2=2.93$ $p=0.23$ $DF=2$
	Already using	7	70.0	3	30.0	10	
	Not aware	4	33.3	8	66.7	12	
Diet pattern	Vegetarian			2	100.0	2	$\chi^2=2.33$ $p=0.31$ $DF=2$
	Non - vegetarian	8	50.1	8	50.0	16	
	Mixed	7	58.3	5	41.7	12	
Desire to eat	likely to eat			2	100.0	2	$\chi^2=2.14$ $p=0.34$ $DF=2$
	compulsion	8	53.3	7	46.7	15	
	aversion	7	53.1	6	46.2	13	
Child taking meals per day	1 meal a day	7	43.8	9	56.3	16	$\chi^2=0.58$ $p=0.74$ $DF=2$
	2 meal a day	7	58.3	5	41.7	12	
	> 2 meal a day	1	50.0	1	50.0	2	
Mother identifies hunger	By asking food	5	41.7	7	58.3	12	$\chi^2=0.56$ $p=0.75$ $DF=2$
	Time being	6	54.5	5	45.5	11	
	Tired	4	57.1	3	42.9	7	

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Child reacting to hunger	By asking	8	80.0	2	20.0	10	$\chi^2=5.41$ $p=0.07$ $DF=2$
	Shouting	4	36.4	7	63.6	11	
	Abdominal pain	3	33.3	6	66.7	9	
Likely to take junk foods	Yes	7	41.1	10	58.8%	17	$\chi^2=1.22$ $p=0.54$ $DF=2$
	No	3	60.0	2	40.0	5	
	Occasionally	5	62.5	3	37.1	8	
De-worming is done	Regularly	0	0.0	1	100.0	3	$\chi^2=6.60$ $p=0.05^*DF=2$
	Occasionally	6	40.0	9	60.0	15	
	Not done	9	75.0	3	25.0	12	
Bowel habits	Twice a day	9	47.4	10	52.6	19	$\chi^2=0.19$ $p=0.90$ $DF=2$
	Thrice a day	4	57.1	3	42.1	7	
	More than thrice a day	2	50.1	2	50.0	4	
Consistenceofstool	Soft stool	6	37.5	10	62.5	16	$\chi^2=3.00$ $p=0.22$ $DF=2$
	Solid stool	6	75.0	2	25.0	8	
	Hard stool	3	50.0	3	50.0	6	
Child became sick	Once in six months	2	40.0	3	60.0	5	$\chi^2=3.45$ $p=0.17$ $DF=2$
	More than one year	9	69.2	4	30.8	13	
	Never	4	33.3	8	66.7	12	
Duration of hospitalization	Less than 3 days	7	33.3	14	66.7	21	$\chi^2=7.27$ $p=0.05^*$ $DF=2$
	3-7 days	5	83.3	1	16.0	6	
	More than 7 days	3	66.7	0	33.3	3	

Hunger score= pretest-posttest

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Table 10 shows the association between the level of hunger score with the demographic variables. 20.1 -25.0 kg Weight of child, regularly de-worming and < 3 days more hunger score. Statistical significance was calculated using chi square test

Table - 11: ASSOCIATION BETWEEN THE HUNGER RELATED VARIABLES AND LEVEL OF HUNGER IN CONTROL GROUP

Demographic variables		Level of hunger scale score				Total	Chi square test
		Below average(≤ 0.37)		Above average(> 0.37)			
		Count	%	Count	%		
Age	6- 8 years	6	60.0	4	40.0	10	$\chi^2=0.80$ $p=0.67$ $DF=2$
	9-10 years	4	40.0	6	60.0	10	
	11- 12 years	5	50.0	5	50.0	10	
Sex	Male	7	46.7	8	53.3	15	$\chi^2=0.13$ $p=0.71$ $DF=1$
	Female	8	53.3	7	46.7	15	
Order of birth	First	4	36.4	7	63.6	11	$\chi^2=1.81$ $p=0.40$ $DF=2$
	Second	5	50.0	5	50.0	10	
	Third	6	66.7	3	33.3	9	
Education	Primary	8	44.4	10	55.6	18	$\chi^2=0.55$ $p=0.45$ $DF=1$
	Secondary	7	58.3	5	41.7	12	
Types of family	Nuclear family	5	45.5	6	54.5	11	$\chi^2=1.71$ $p=0.42$ $DF=2$
	Joint family	5	41.7	7	58.3	12	
	Extend family	5	71.4	2	28.6	7	
Occupation	Skilled worker	3	33.3	6	66.7	9	$\chi^2=1.81$ $p=0.40$ $DF=2$
	Profession	7	63.6	4	36.4	11	
	Business	5	50.0	5	50.1	10	
Monthly income	Rs.1590-4726	5	55.6	4	44.4	9	$\chi^2=2.52$ $p=0.28$ $DF=2$
	Rs.4727-7877	3	30.0	7	70.0	10	
	Rs.7878-10877	7	63.6	4	36.4	11	

Hunger score= pretest-posttest

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Table 11 shows the association between the level of hunger score with the demographic variables. None of the variables are significant.. Statistical significance was calculated using chi square test.

Table 12: ASSOCIATION BETWEEN THE DEMOGRAPHIC VARIABLES AND LEVEL OF HUNGER IN CONTROL GROUP

		Level of hunger scale score				Total	Chi square test
		Below average(≤ 0.37)		Above average(> 0.37)			
		frequency	In%	frequency	In%		
Weight of the child	15.1-20 kg	6	40.0	9	60.0	15	$\chi^2=1.41$ p=0.49 DF=2
	20.1-25 kg	7	63.6	4	36.4	11	
	> 25 kg	2	50.0	2	50.0	4	
Aware of appetizer	Aware	6	46.2	7	53.8	13	$\chi^2=0.62$ P=0.73 DF=2
	Already using	6	60.0	4	40.0	10	
	Not aware	3	42.9	4	57.1	7	
Diet pattern	Vegetarian	3	75.0	1	25.0	4	$\chi^2=4.30$ p=0.13 DF=2
	Non - vegetarian	10	58.8	7	41.2	17	
	Mixed	2	22.2	7	77.8	9	
Desire to eat	likely to eat			3	100.0	3	$\chi^2=4.40$ p=0.1 1DF=2
	Compulsion	7	46.7	8	53.3	15	
Child taking meals per day	Aversion	8	66.7	4	33.3	12	$\chi^2=2.16$ p=0.33 DF=2
	1 meal a day	4	36.4	7	63.6	11	
	2 meal a day	9	64.3	5	35.7	14	
Mother identifies hunger	> 2 meal a day	2	40.0	3	60.0	5	$\chi^2=0.17$ p=0.91 DF=2
	By asking food	3	50.0	3	50.0	6	
	Time being	8	53.3	7	46.7	15	
	Tired	4	44.4	5	55.6	9	

Child reacting to hunger	By asking	8	57.1	6	42.9	14	$\chi^2=2.55$ $p=0.27$ DF=2
	Shouting	3	30.0	7	70.0	10	
	Abdominal pain	4	66.7	2	33.3	6	
Likely to take junk foods	Yes	5	33.3	10	66.7	15	$\chi^2=3.81$ $p=0.15$ DF=2
	No	6	75.0	2	25.0	8	
	Occasionally	4	57.1	3	4	7	
Deworming is done	Regularly	5	71.4	2	28.6	7	$\chi^2=1.88$ $p=0.39$ DF=2
	Occasionally	6	40.0	9	60.0	15	
	Not done	4	50.0	4	50.0	8	
Bowel habits	Twice a day	4	33.3	8	66.7	12	$\chi^2=2.71$ $p=0.28$ DF=2
	Thrice a day	6	54.5	5	45.5	11	
	More than thrice a day	5	71.4	2	28.6	7	
Consistence of stool	Soft stool	5	38.5	8	61.5	13	$\chi^2=2.43$ $p=0.30$ DF=2
	Solid stool	3	42.9	4	57.1	7	
	Hard stool	7	70.0	3	30.0	10	
Child became sick	Once in six months	2	33.3	4	66.7	6	$\chi^2=1.45$ $p=0.48$ DF=2
	More than one year	5	45.5	6	54.	11	
	Never	8	61.5	5	38.5	13	
Duration of hospitalization	Less than 3 days	8	50.0	8	50.0	16	$\chi^2=1.17$ $p=0.55$ DF=2
	3-7 days	5	62.5	3	37.5	8	
	More than 7 days	2	33.3	4	66.7	6	

Hunger score= pretest-posttest

Table 12 shows the association between the level of hunger score with the demographic variables. None of the variables are significant. Statistical significance was calculated using chi square test.

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CHAPTER-V

SUMMARY OF THE RESULT

5.1 SUMMARY:

The primary aim of the study was to assess the effectiveness of cumin water consumption in promoting hunger level among children 6-12 years of age, admitted in paediatric medical ward, Institute of Child Health and Hospital for Children. Chennai.

The data collection was done. The obtained data was summarized and tabulated by utilizing descriptive statistics (percentage, mean, standard deviation) and inferential statistics (student paired t- test and chi- square test).

5.2 MAJOR FINDINGS OF THE STUDY:

5.2.1 Findings of socio-demographic data:

- Among the children equally 10(33.3%) were in the age group of 6 – 8, 9-10 and 11-12 years.
- Higher than half of them were male children 66.7%.
- Majority of the children (56.7%) were first order of birth.
- Sex of both the sex studied equally children studied (50%)
- More than half of the parents 15 (50.0%) were of nuclear family.
Among the parents (20.0%) were to business holders.
- Most of the parents earned monthly (53.33%).

5.2.1.1. Findings of hunger related variable (Clinical).

- ❖ Most of the children weight were 17 (56.7)
- ❖ Majority of the children 12 (40.0%) were not aware of appetite.
- ❖ Highest of them followed diet pattern was 16 (53.3%) Non –Vegetarian
- ❖ Majority of the children were eating the food on compulsion 15 (50%).
- ❖ Children taking one meal per day were 16 (53.3%).
- ❖ Mother identifies hunger is only by taking food 12(60%)

- ❖ Child reacting to hunger is by shouting 11(36.7%)
- ❖ Most of the children like to take junk foods “yes” 17(56.7%)
- ❖ Highest of the children had de-worming occasionally 15 (50%)
- ❖ .Bowel habits daily twice a day 19(63.3%)
- ❖ Most of the children had consistency of soft stool soft 16(53.3%)
- ❖ Majority of the children getting sick many times more than one year 13(43.3%)
- ❖ Higher level of children’s had duration of hospitalization was less than 3 days 21(70%)

5.2.2 Findings on level of pre-test level of hunger:

In the pre test, experimental group having 4.97 hunger scale score and control group are having 2.13 hunger scale score, so the difference is 0.16. This difference is small and it is not statistically significant. It was calculated using student independent t-test.

5.2.3 Findings on the post-test level of hunger after administration of cumin water:

In the post test post test, they having 4.93 hungers scale score and control group are having 7.97hunger scale score, so the difference is 2.13, this difference is large and it is **statistically significant**. It was calculated using student independent t-test.

5.2.4 Findings on pre and post test Hunger scale score:

- ❖ Among experiment group, in pre test they are having 4.93 hunger scale score and in post test they are having 7.97 score, so the difference is 3.03. This difference is large and it is statistically significant.
- ❖ Among control group, in pre test they having 2.13 hunger scale score and in post test they are having 3.77 score, so the difference is 0.37 . This difference is small and it is not statistically significant. It was calculated using student paired t-test.
- ❖ The effectiveness in experiment group, the percentage of children are **promote hungr30.3%** in hunger scale score after cumin water where asthe**control group**

3.7%. This shows the effectiveness of cumin water. Differences between pretest and posttest score was analysed using percentage with 95% CI and mean difference with 95% CI.

5.2.5 Findings on the association between the selected demographic variables and level of hunger in control and experimental group

- ✓ It shows the association between the level of hunger score with the demographic variables. Younger and primary educated are to more hunger score. Statistical significance was calculated using chi square test.
- ✓ The association between the level of hunger reduction score with the demographic variables. 20.1 -25.0 kg Weight of child, regularly De-worming and < 3 days are all reduced to more hunger score. Statistical significance was calculated using chi square test.

CHAPTER- VI

DISCUSSION

This chapter deals with detailed description of the study finding gathered from the statistical analysis.

Children are the pillars of every country. If a child becomes sick the whole family become sick and they get relieved only after the child is cured of illness. Family is the main source of support for the children with illness in any society. Families experience enormous physical and emotional burden while caring for them. This leads to unavoidable impact among the parents. The parents should be aware about home based and alternate support systems such as providing healthy and balanced diet with portable water to prevent from major illness occurring during childhood.

The study findings are discussed as per the objectives of the study.

Objective 1: To assess the hunger level before consumption of cumin water among children 6-12 years of age of experimental and control group admitted in paediatric medical ward.

The level of hunger among **experimental and control group of children before administration of 50 ml of cumin water. In which the experimental group, in pre test, having 4.97 hunger scale score and control group are having 2.13 hunger scale score**, So the difference is 0.16, this difference is small and it is not statistically significant.

These findings implicated the need for consuming of cumin water which is a natural resource with out and side effects and helps the improving level of hunger among children. My study is consistent with the study done by; Sohail Ashraf, ArshaloozJamilaRahman, HeemaSatwani, FarhaNaz, Kashif Abbas, Anwar Hassan (2010) who conducted a study on effect of complimentary therapies among children and their parents. The study was conducted among 375 mothers of children. He conducted

study on patients with gastrointestinal symptoms who were treated with Saunf water 28.4%, mint 20.6% and ajwain 17.7%. Higher education level was associated with more complementary medicine use. Majority of mothers used it for gastrointestinal problems and other problems 24% and 22.2% respectively.

Objective 2; To evaluate the hunger level among children 6-12 years of age of experimental group admitted pediatric medical ward.

Table 7 assessed the hunger level after cumin water administration. In which among experiment, 16.7% of the children are having hungry score, 73.3% of them are having normal score, 10% of them are having full score whereas in control group, none of the children are having hungry score, 10.0% of them are having normal score, 90% of them are having full score.

Similar findings of the study were observed in the study done by, **Dr. Lindsay Lary (2011)** who conducted a study on 39 patients to assess the Efficacy of a Cinnamon, Cumin, Ginger and Honey Paste in the Treatment of Acute Diarrhoea in children. By the third day, diarrhoea had completely resolved in 26 patients and was markedly improved in the remaining 4 patients. 16 of the 19 adult cases and 10 of the 11 paediatric cases had no diarrhoea by the third day. Nausea, vomiting and cramps had completely resolved in 16 patients and had marked improvement in the remaining 14 patients. 11 of the 19 adult cases and 5 of the 11 paediatric cases no longer experienced nausea, vomiting and cramps by the third day..

Objective 3; To determine the effectiveness of consumption of cumin water among children 6-12 years of age of experimental and control group admitted in paediatric medical ward. Children.

Table 10 showed the comparison of overall hunger score between pretest and posttest. In experiment group, **child promote hunger 30.3%** of hunger feel as seen in the scale score after cumin water consumption whereas **control group 3.7%**. This shows the

effectiveness of cumin water. Differences between pretest and posttest score was analysed using percentage with 95% CI and mean difference with 95% CI.

Similar findings were observed in this study by, My study is consistent with the study done by; Sohail Ashraf, ArshaloozJamilaRahman, HeemaSatwani, FarhaNaz, Kashif Abbas, Anwar Hassan (2010) conducted a study on effect of complimentary therapies among children and their parents.. The use of CAM by mothers was mainly on the advice of various family members like Mother-in-law (n=146), Grandmother (maternal) of kids (n=98), Husband (n=27), other in-laws (n=30) and Neighbour (n=3) only (n=62) Mothers used them on their own decision and experience. It was seen that majority of the CAM were used in combination with allopathic over the counter medications and only 14.9% mothers used allopathy drugs alone.

Objective 4; To find association between theselected demographic variables with post test scores of promoting hunger level among children 6-12 years of age of experimental group admitted pediatric medical ward.

The association between the level of selected demographic variables with post test scores of promoting hunger among children 6-12 years of age of experimental group admitted paediatric medical ward. It shows the association between age, education in demographic level and in clinical variables that association in Weight of the child, De-worming and Duration of hospitalization

Hypothesis:-

H1: There will be statistically significant difference between post test level of hunger among children of experimental and control group .

Hypothesis proved -'t' value= 11.04, p=0.001***

H2: There will be statistically significant association between selected demographic variables with the post test value of appetite among children of experimental group after the administration of cumin water.

CHAPTER—VII

CONCLUSION RECOMMENDATION

7.1 Implications of the study:

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

Implications for nursing education:

- ❖ Nursing education should prepare the nurses for imparting health information effectively, efficiently to the stake holders.
- ❖ Students/ nurses must be prepared with innovative methods which would help to hold the interest on the health of the children in public and to become an effective child health nurse.
- ❖ Nurses at the post graduate level need to develop their skill, in preparing health teaching materials.
- ❖ The health educational materials especially child health education module prepared for this study can be utilized by the nursing students in clinical practice and home visits.

Implications for nursing practice:

Along with the changing scenario of health care delivery system, the emphasis is shifted from care oriented approach to preventive approach. The study revealed that, there is a need of information regarding improvement in hunger. Among the admitted children in medical ward.

This study stressed that there is urgent need of education by nursing staff, student nurses and in planning and conducting educational programme.

Implications for nursing research:

Since children hospital is the place which plays a major role in identifying and preventing impact of disability among parents, the research should be focused on the improvement in hunger and appetite among the admitted children in medical ward followed by various teaching programmes.

- Research should be done on practising newer methods of teaching, focusing on interest, quality and cost effectiveness.

Implications for nursing administration:

- The main focus of nursing administration is to organize seminars and workshop and other educational programme for staff nurses, school health nurses and student nurses as a part of t in- service education programme since they have direct contact with the parents as well as children while conducting health programme.
- Nursing administrator should take part in the health policy making and developing protocols. Nursing administrators should concentrate on the proper selection, placement, and effective utilization of the nurses in all areas by giving proper guidance..

7.2 Limitation:

The study can be conducted in a longer duration.

7.3 Recommendation

Keeping in view the findings of the present study, the following recommendations were made since the study was carried out on a small non probability sample. The results can be used only as a guide for further studies.

- 1) The study can be replicated by the taking of a large sample in other parts of the country.
- 2) A similar study can be conducted among children by assessing the attitude of the parents in the society.

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- 3) Education can be given to school teachers on monitoring the students for having loss of appetite and refusal of food.
- 4) Children with loss of appetite and refusal of food problems can be referred to the hospitals.
- 5) Special attention can be given to the children with minor loss of appetite and refusal of food problem with symptoms.
- 6) Awareness can be given to parents about loss of appetite and refusal of food problem condition during parents-teachers meeting at hospital.
- 7) Periodical de-worming can be done in schools.

Conclusion:

This chapter enlightens the importance of this research and revealed that there was a significant improvement in consuming of cumin water on raising appetite and hunger level among children, and health education was the only effective way to upgrade their health status. The natural resource cum appetizer did a remarkable change among the children by reducing loss of appetite and improving hunger level among children.

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7. Y65#3..#7#??5/9/5# 95#5#;4704/51#Q2#0; @5>#8475#
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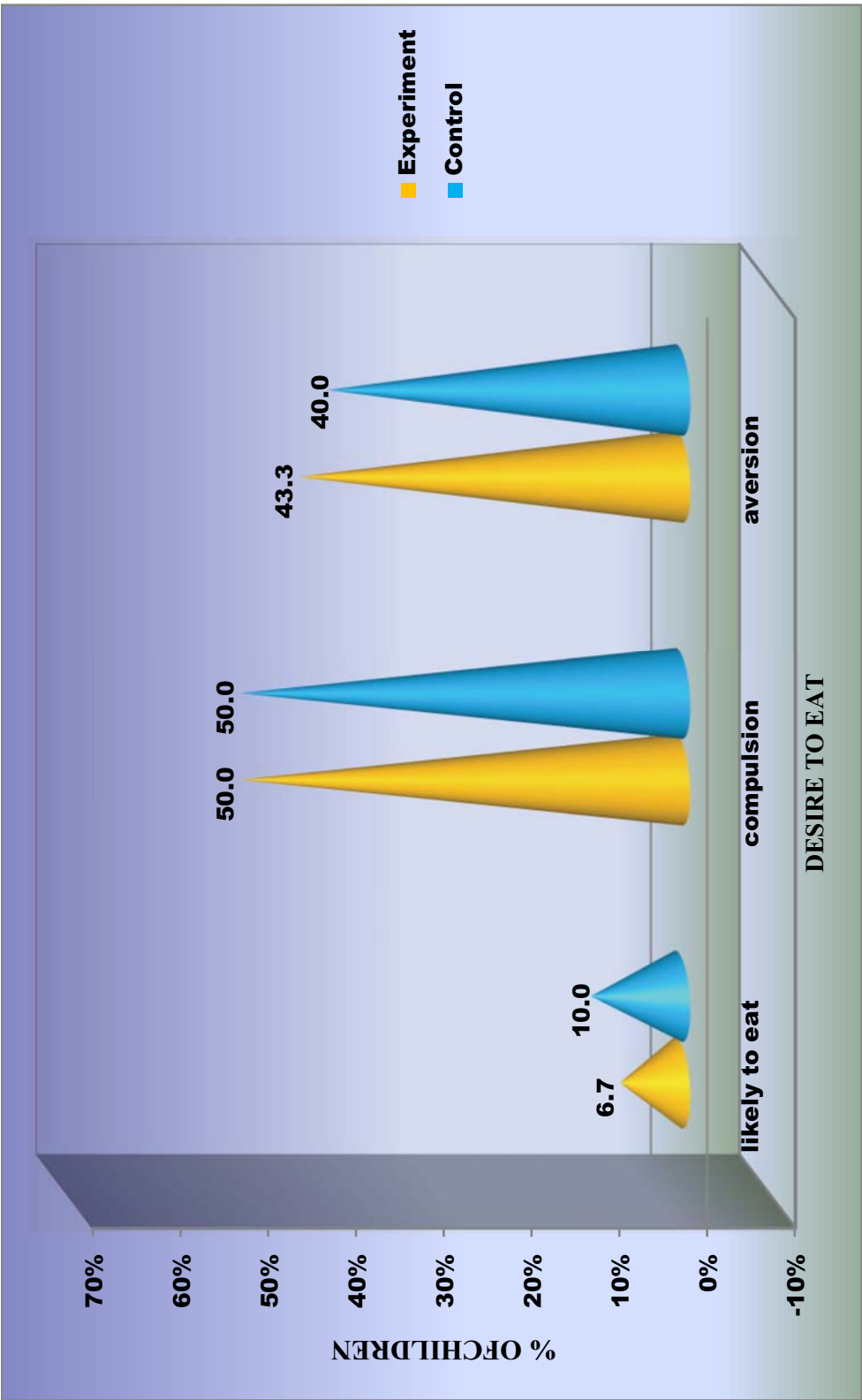


Fig 4.8 Distribution of desire to eat school age children in both experimental and control group.

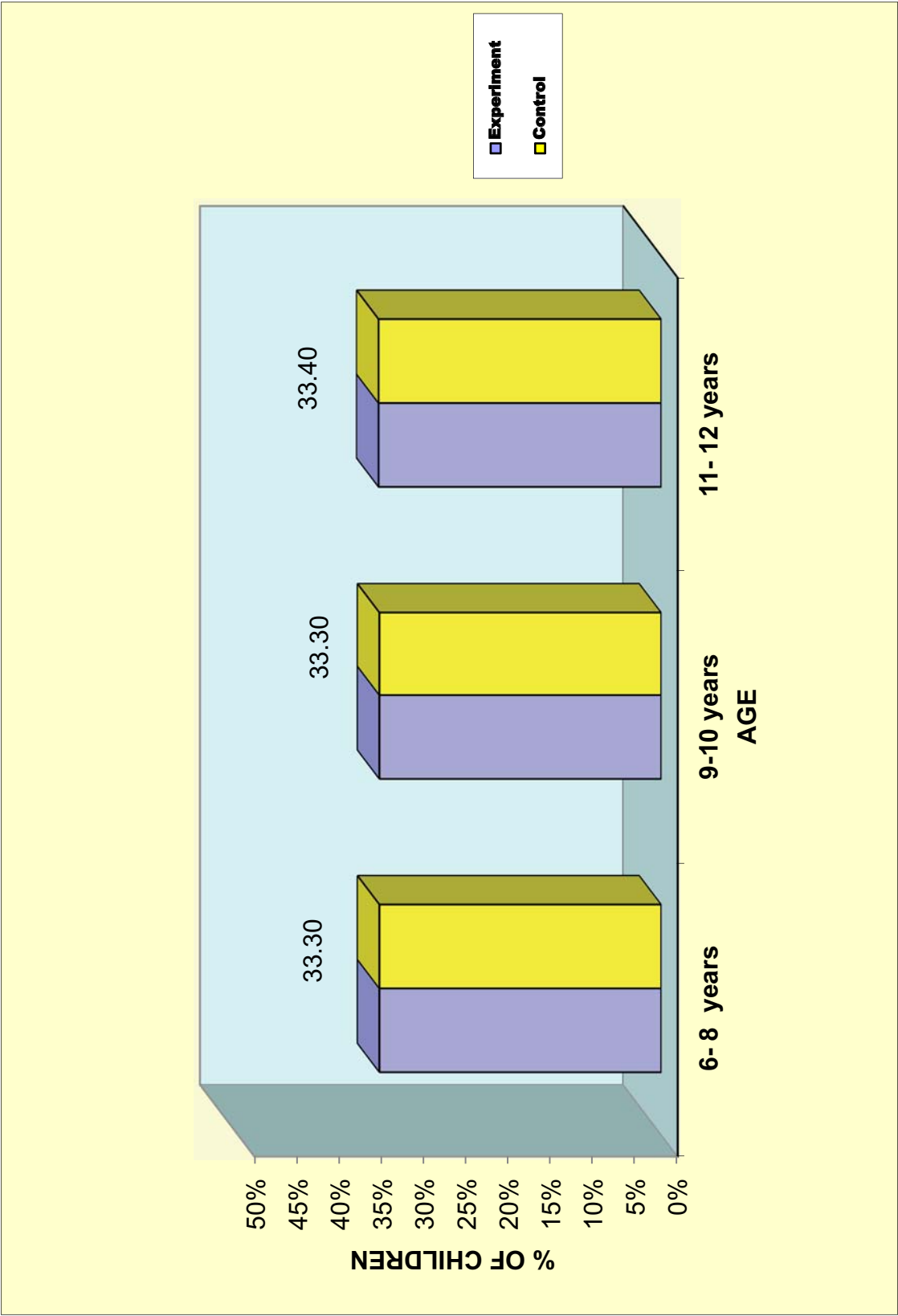


Fig 4.1: Age wise distribution of children in both experimental and control group.

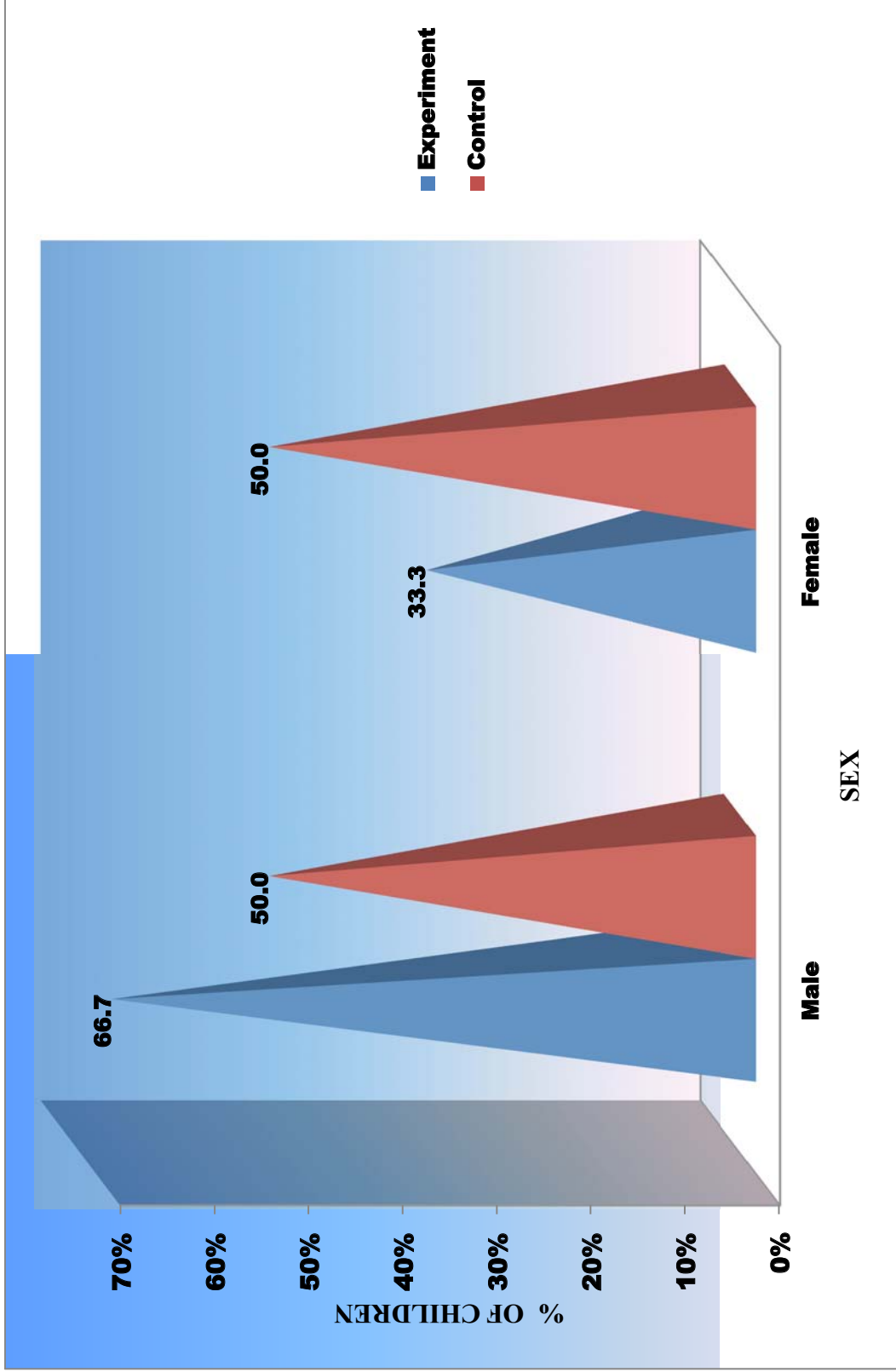


Fig4.2: Sex wise distribution of children in both experimental and control group

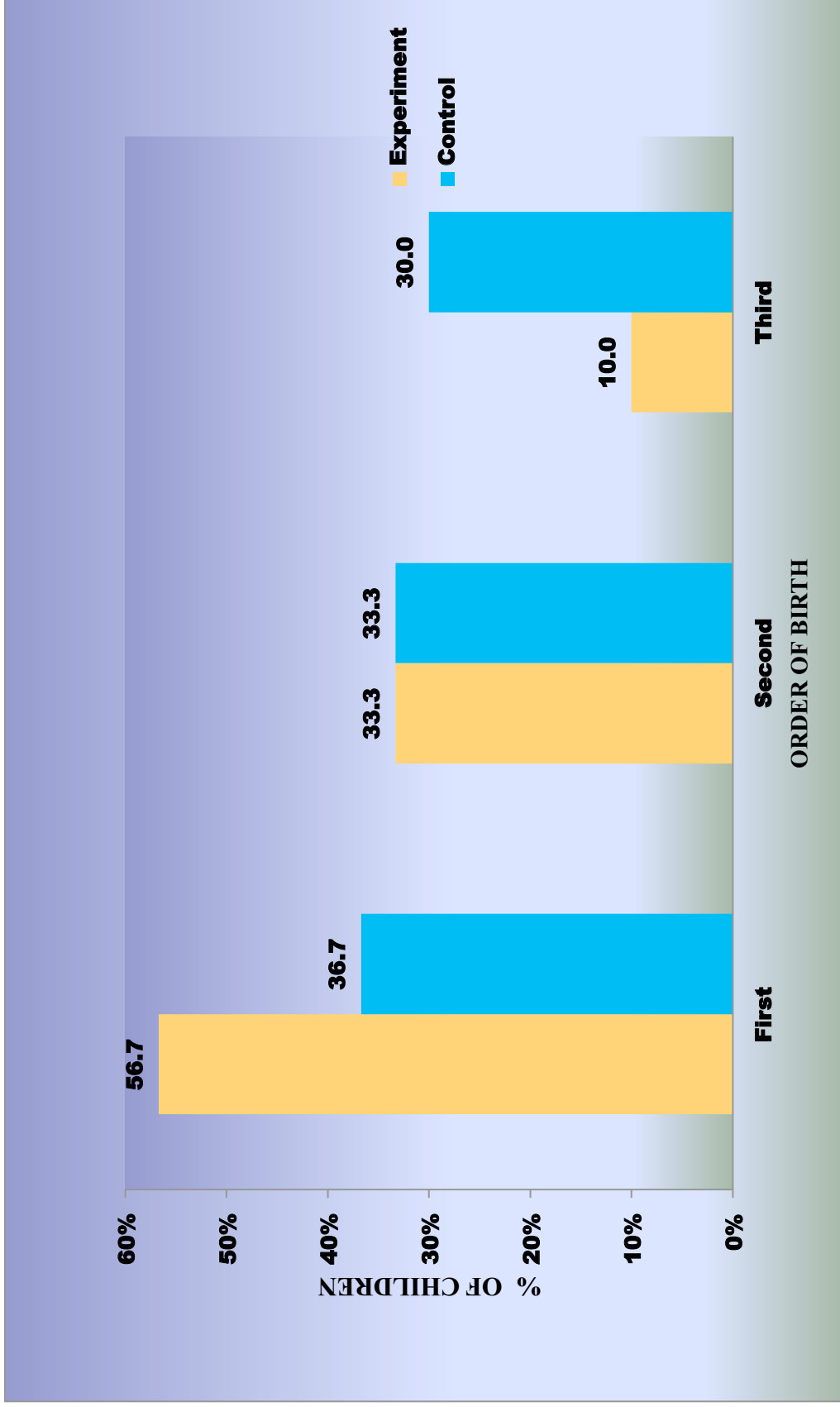


Fig4.3: Order of birth wise distribution of children in both experimental and control group.

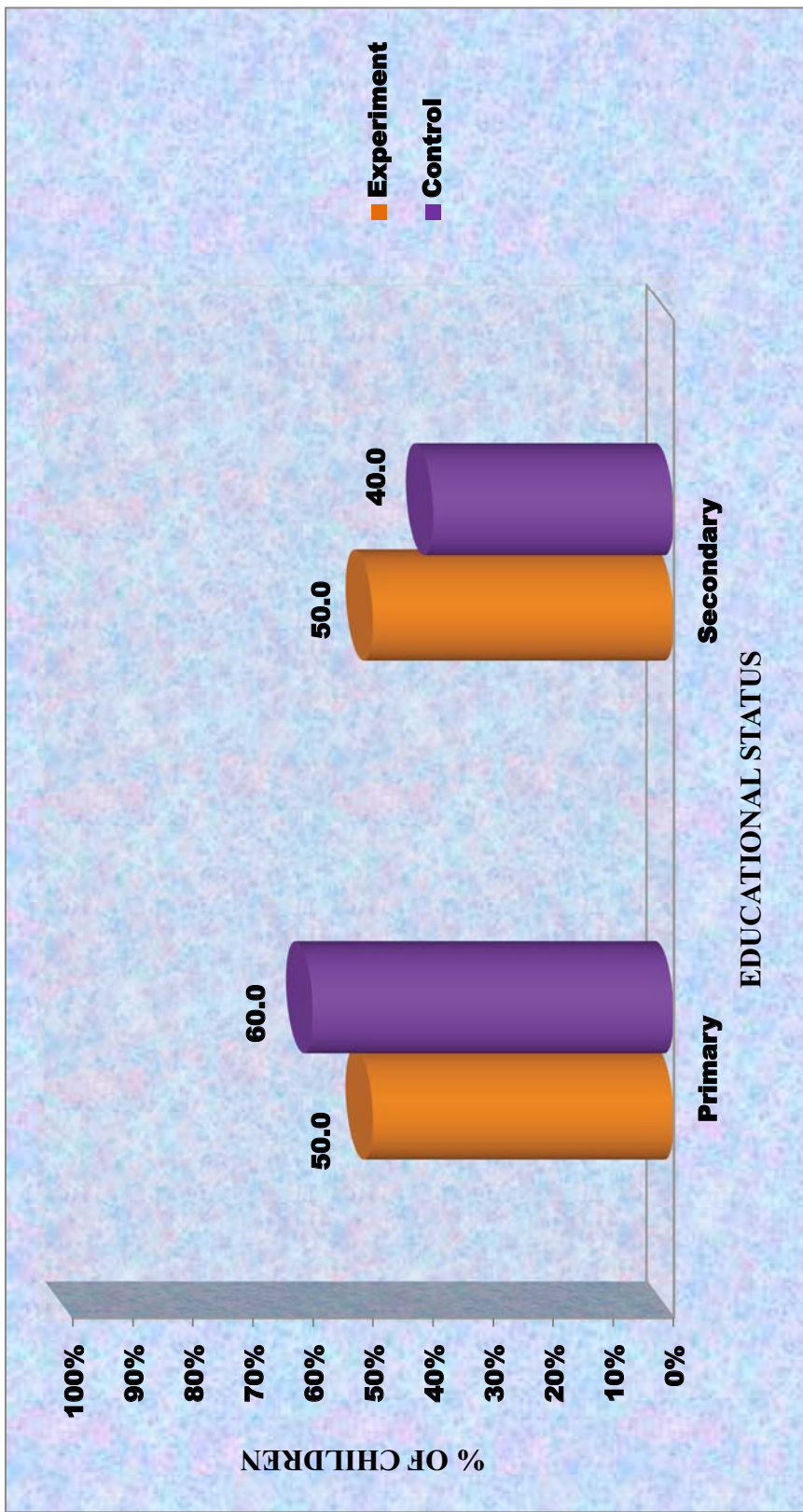


Fig 4.4: Education status wise distribution of children in both experimental and control group.

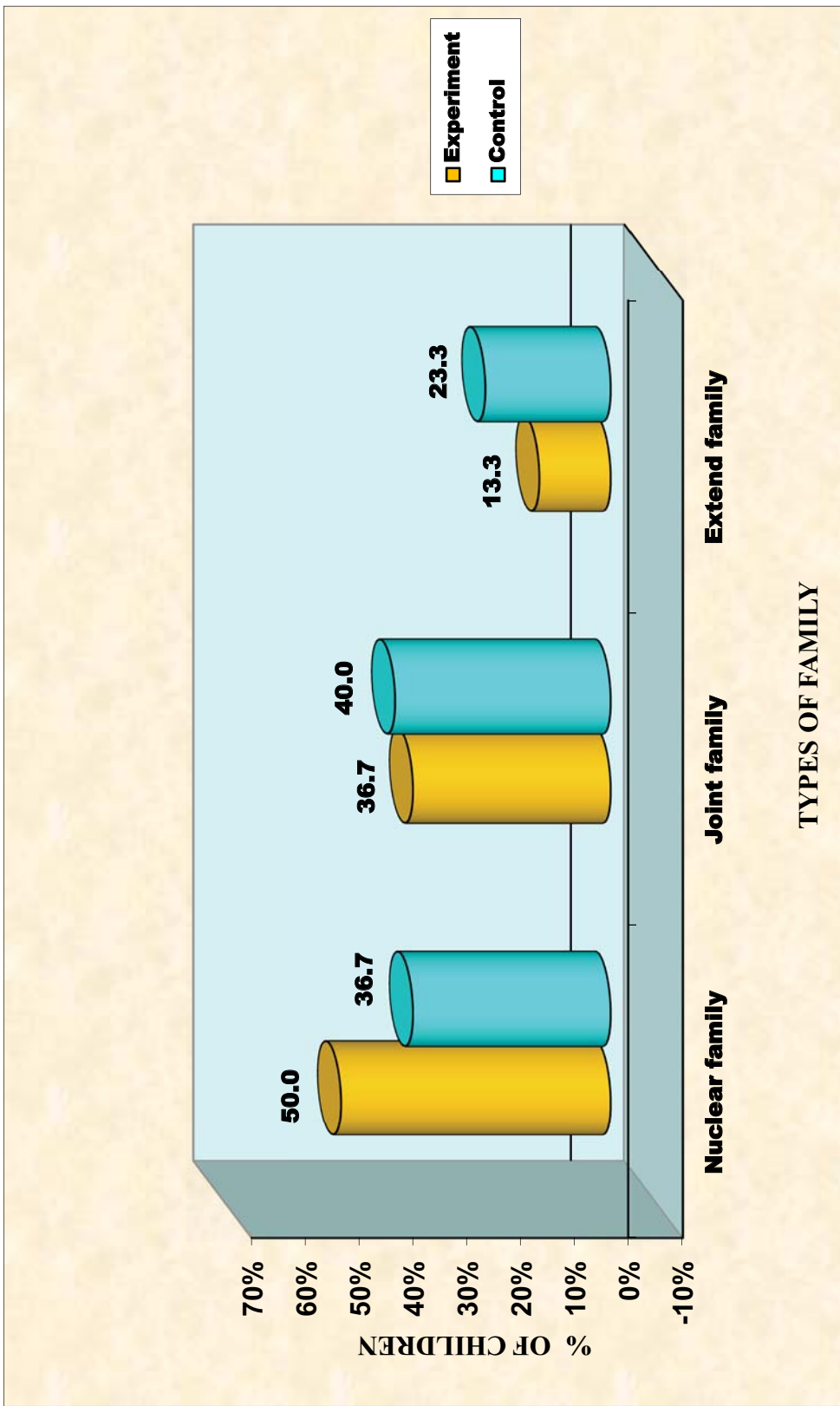


Fig 4.5: Types of family distribution of school age children in both experimental and control group.

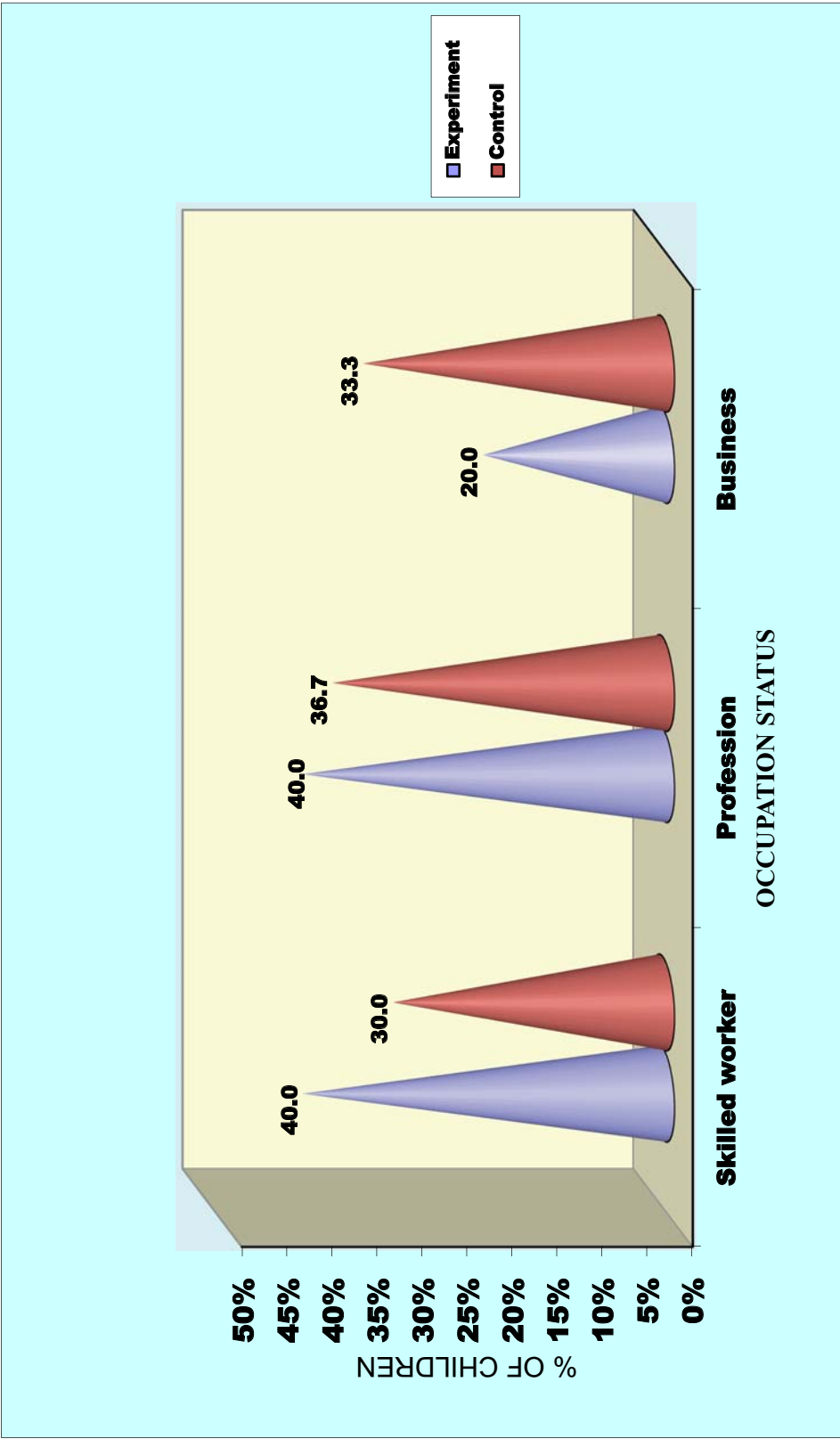


Fig 4.6: Occupation status wise distribution of children in both experimental and control group.

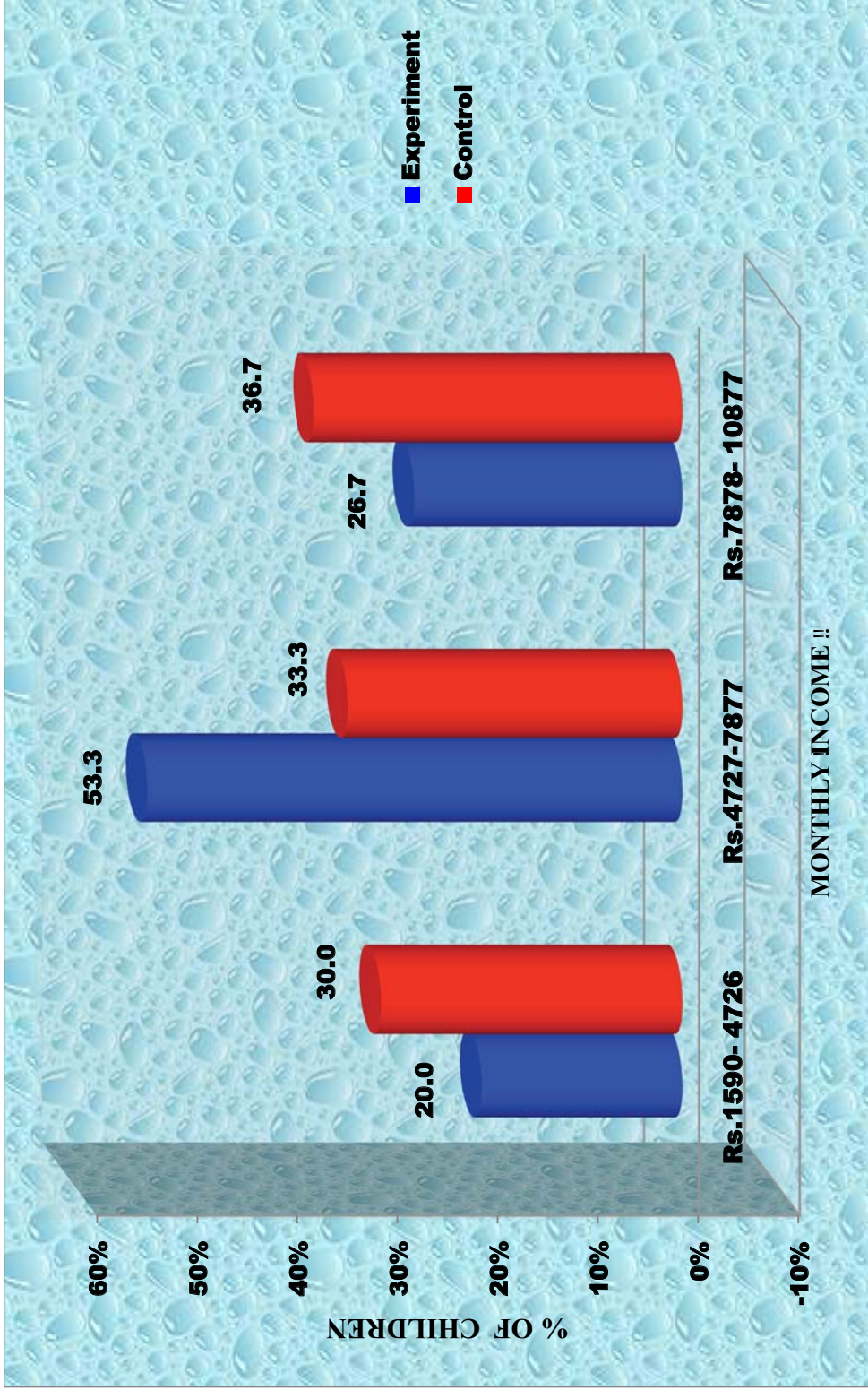



Fig 4.7: Monthly income wise distribution of children in both experimental and control group.

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CERTIFICATE OF ENGLISH EDITING

This is to certify that the dissertation work topic
"A study to assess the effectiveness of Cumin water consumption in promoting
hunger level among children 6-12 years of age , admitted in Paediatric Medical
Ward at Institute of Child Health and Hospital for Children, Chennai " done by
Mrs. VASUKI.M. M.Sc (N) II Year, College of Nursing, Madras Medical
College, Chennai -03 is edited for English language appropriateness.

NAME : Ms. DHANALAKSHMI., M.A , M.Phill
DESIGNATION : Assistant Professor, English, MMC, ch; 3
DATE : 02-02-2016
PLACE : Chennai : 600 003
SIGNATURE WITH SEAL : 
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Dept. of English
Madras Medical Co
Chennai -600 00-

Section-A

Demographic data

1. Age of the child in year?

- a) 6- 8 years
- b) 9-10 years
- c) 11- 12 years

2. Sex of the child?

- a) Male
- b)Female

3.order of children?

- a) First
- b) Second
- c) Third

4.Education of the child

- a) Primary
- b) Secondary

5.Type of family?

- a) Nuclear family
- b) Joint family
- c) Extend family

6. Occupation?

- a) skilled worker
- b) Profession
- c) Business

7. Family income per month?

a) Rs. 1590- 4726

b) Rs.4727-7877

c) Rs.7878- 10877

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6. How the mother identifies hunger?

a) by asking food

b) time being

c) tired

7. How the child the to hunger?

a) by asking

b) shouting

c) abdominal pain

8. Did the child likely to take junk foods?

a) yes

b) no

c) occasionally

9. weather deworming is done?

a) regularly

b) occasionally

c) not done

10.How is your child bowel habits?

- a) twiceaday
- b) thriceaday
- c) more than thrice a day

11.Consistency of stool

- a) soft stool
- b) solid stool
- c) Hard stool

12. How often your child become sick?

- a) once in six months
- b) more than one year
- c) never

13. Duration of hospitalization?

- a) less than 3 days
- b) 3-7 days
- c) more than 7 days

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I%*		A	<	<	<	<	0	A	A	<	A	<	<	<	<	<
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I%,		0	<	<	<	<	0	<	<	A	0	0	A	<	A	A
I%-		A	0	0	<	<	<	<	<	A	<	A	A	A	<	<
I&.		<	0	0	0	0	<	<	<	A	<	<	A	<	0	0
I&%		A	<	<	<	<	0	0	0	<	A	0	<	A	A	A
I&&		A	0	0	<	<	<	<	<	A	<	A	<	<	0	0
I&'		<	0	0	A	0	0	0	0	0	<	<	A	A	0	0
I&(A	0	0	0	0	<	0	0	<	0	0	<	<	<	0
I&)		<	0	0	0	0	A	<	<	A	0	<	A	A	<	<
I&*		A	<	0	0	0	<	0	0	<	0	A	<	A	0	0
I&+		0	0	0	0	0	0	0	!!!"	<	0	<	<	A	<	<
"I&,		0	0	0	0	0	0	0	0	<	0	0	<	<	<	0
I&-		A	<	<	<	<	A	0	0	0	A	A	<	A	<	<

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