EFFECTIVENESS OF INFORMATION, EDUCATION, COMMUNICATION PACKAGE ON KNOWLEDGE AND EXPRESSED PRACTICE REGARDING IRON DEFICIENCY ANEMIA AMONG BLIND ADOLESCENT GIRLS

By

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A DISSERTATION SUBMITTED TO THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY, CHENNAI IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

April 2012

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CERTIFICATE

Certified that this is the bonafide work of **Mrs. A. BEULA JOYCE,** Dr. G. Sakunthala College of Nursing, Trichy, submitted in partial fulfilment of the requirement for the degree of Master of Science in Nursing from the Dr. M.G.R. Medical University, Chennai.

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Ethical committee of Dr. G. Sakunthala College of Nursing has discussed with its members the topic "A pre-experimental study to evaluate the effectiveness of information, education and communication package on knowledge and expressed practice regarding iron deficiency anemia among blind adolescent girls" opted by **Mrs. A. Beula Joyce** and its implication on study subjects for her thesis for M.Sc Nursing programme and the committee passed clearance for the same topic for her to persue.

Prof. Mrs. SANTHAM SWEET ROSE, M.Sc(N), Ph.D

Ethical Committee

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ABSTRACT

"A pre experimental study to evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia in terms of knowledge and expressed practice among blind adolescent girls in Rovers girls Hr. Sec. School, Perambalur 2011".

Objectives

1. To assess the knowledge of blind adolescent girls regarding iron deficiency anemia.
2. To assess the expressed practice of blind adolescent girls regarding iron deficiency anemia.
3. To evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia.
4. To determine the relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.
5. To determine the association between the knowledge of blind adolescent girls regarding iron deficiency anemia with demographic variables.
6. To determine the association between the expressed practice of blind adolescent girls regarding iron deficiency anemia with demographic variables.

Conceptual frame work

Rosenstock's and Becker's health belief model.

Research design

Pre experimental design (One group pretest posttest).

Population

Blind adolescent girls

Sample size

30 samples

Sampling technique

Non probability convenience sampling technique.

Setting

Rovers Girls Hr. Sec. School, Perambalur.

Tool

Knowledge questionnaire

Expressed practice questionnaire

Data Collection

The period of the data collection was started from 04.07.2011 – 12.08.2011. Before starting the study the investigator obtained formal permission from the principal of Rovers Hr. Sec. School to conduct the study.

Data Analysis

1. Percentage, mean, chi-square and standard deviation would be used to know the association between demographic variables and the post test scores.
2. Correlation would be used to determine the relationship between knowledge and expressed practice.
3. Paired T-test would be used to compare the pretest and posttest score.

Major Findings

1) The mean pretest level of knowledge is higher than the mean post test level of knowledge.
2) The mean pretest level of expressed practices higher than the mean post test level of expressed practices.

3) There is significant improvement in the level of knowledge and expressed practice after administering the IEC package which shows the IEC given was effective.
4) There was a positive correlation between the post test knowledge and post test expressed practice of blind adolescent girls.
5) Significant association was found between the post test level of knowledge and selected demographic variables of blind adolescent girls such as father's occupation ($p < 0.01$), mother's education ($p < 0.01$), father's education ($p < 0.01$).
6) Significant association was found between the post test level of expressed practice and selected demographic variables of blind adolescent girls such as father's occupation ($p < 0.01$), mother's education ($p < 0.01$), father's education ($p < 0.01$).

Conclusion

1. Improves the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia after IEC package.
2. Blind adolescent girls are having positive attitude.

CHAPTER I
INTRODUCTION

In India, Nutritional anemia is an important public health problem affecting people from all walks of life. The WHO (2002) reported that "Preventing Risk, Promoting healthy life", mentioned iron deficiency at the 9th of 26 preventable risks to disease, disability and death in the world today.

Stone (2000) stated that iron is a mineral needed by our bodies. Iron is a part of all cells and does many things in our body. For example, iron (as part of the protein hemoglobin) carries oxygen from our lungs throughout our body. Having too little hemoglobin is called anemia. Iron also helps our muscles store and use oxygen. Iron is a part of many enzymes and is used in many cell functions. Enzymes help our body to digest foods and also help with many other important reactions that occur within our body. When our body doesn't have enough iron, many parts of our body are affected. Iron helps in improving cognition which leads to better academic performance that may be an incentive for girls to remain in school.

European food information council (2006) mentioned that adolescence is a "coming of age", as children grow into young adults. These teen years are a period of intense growth, not only physically, but also mentally and socially. During this time, 20% of final adult height and 50% of adult weight are attained. Because of this rapid growth, adolescents are especially vulnerable to anemia. Proper nutrition, including adequate iron intake, plays an important part of teenager's growth and development.

Singh (2004) insisted that during adolescence, teenagers will acquire the knowledge and skills that will help them to become independent, successful young adults. Iron deficiency and iron deficiency anemia can affect this learning and development, but parents can help their teenagers stay healthy by

teaching them some easy ways to prevent iron deficiency. Adolescent period is the right time to invest in nutrition, health, education and social spheres of life as they are the citizens of tomorrow.

Hockenberry and Wilson (2007) stated that anemia, especially, iron deficiency anemia is more prevalent in our state among adolescent girls. Adolescent period is a time of increased iron needs, because of the expansion of blood volume, increase in muscle mass, blood loss due to excessive menstrual losses, hook worm infestations, deficiency of iron in the diet, increased demands, inadequate iron absorption, decreased vitamin C intake, more intake of phytates, frequent blood donation, skipping meals, eating junk foods, eating irregularly, chronic infection and rapid growth.

Beard (2000) mentioned that iron requirements peak during adolescence due to rapid growth with sharp increase in lean body mass, blood volume and red cell mass which increases iron needs for myoglobin in muscles and haemoglobin in blood.

Swaminathan (2003) stated that iron-rich foods include chicken, peas, beans, eggs (yolk), fish, meat (liver is the highest source), peanut, butter, ragi, maize, mint, coriander leaves, drum-stick, dates, soyabeans, whole-grain and bread. Other sources include oatmeal, and other greens.

Akman et al. (2004) insisted that lowered resistance to infection, poor cognitive development, fatigue, poor mental and physical ability, feeling tired and weak, decreased work and school performance, cracks in side of mouth, soreness of tongue, breathlessness, palpitation, difficulty in maintaining body temperature, decreased immune function, glossitis, pale skin, irritability, loss of appetite ,have a short attention span, grow more slowly than normal, develop skills, such as walking and talking, later than normal are the major consequences of this deficiency, hence it is essential to emphasize the need for iron.

Centers for Disease Control (CDC) (2007) stated that iron deficiency anemia is often first noticed during a routine examination. To diagnose iron deficiency, one of these blood test (complete blood count, hematocrit test, reticulocyte count, serum iron, serum ferritin) will probably be done. Stool test also to be done because iron deficiency anemia can be caused by gradual loss of small amount of blood through the gastrointestinal tract. A colour change indicates the presence of blood in stool.

Hockenberry and Wilson (2007) mentioned that treatment of iron deficiency anemia depends on the cause and severity of the condition. Treatment includes dietary modification, iron therapy and blood transfusion. During treatment the hemoglobin should be monitored every few months to check that the treatment is working and that iron levels is returning to normal. Large amount of iron may be harmful, so take iron supplements only as doctor prescribed.

Prodigy (February 2008) insisted that if iron deficiency anemia is not treated, it causes many complication like hypoxemia, koilonychias, glossitis, dysphagia, atrophic gastritis, neurological pain, numbness, tingling, increased intra cranial pressure, impaired immune function, behavioral disturbance, growth impairment, coronary insufficiency, myocardial ischemia, chronic pulmonary disease, angular stomatitis and cold intolerance.

Maeyer (2000) stated that iron deficiency anemia can be prevented by regular intake of iron with vitamin C containing diet, wearing chapels while walking, regular de-worming 6 months once, cooking in iron vessels, using toilet for defecation, avoiding junk foods, administering prophylactic iron supplements at puberty to meet the increased need during the period of growth spurt.

Stolzfus (1998) emphasized that iron deficiency anemia is an easily treatable disorder with an excellent outcome; However, it does depend on the

cause. Usually, blood counts will return to normal in 2 months.Chronic iron deficiency anemia is seldom a direct cause of death; however, moderate or severe iron deficiency anemia can produce hypoxia to aggravate underlying pulmonary and cardiovascular disorders. Hypoxic deaths have been observed in patients who refuse blood transfusions for religious reasons.

Deshpande (2003) mentioned that nutrition education has been defined as educational measure for inducing desirable behavioral changes for the ultimate improvement in the nutritional status of individual and family.

Marlow (2005) stated that nutrition education is rational approach to prevent iron deficiency anemia. Nutrition education is the process of applying knowledge of nutrition related scientific information of social and behavioural sciences, in ways designed to influence individuals and groups to eat the kinds and amount of foods that will make a maximum contribution to health and social satisfaction.

NEED FOR THE STUDY

Adolescence is a period of transition between childhood and adulthood. The word adolescence comes from the Latin word adolescence which means “to grow” or “to grow maturity”. Adolescence is a period of transition when the individual changes physically and psychologically from a child into adult. Adolescence in contrast to puberty is not a single stage but a range of 13 to 18 years. The period of adolescence is accomplished by its profound changes in growth rates, body compositions and marked physiological and endocrinal changes. The velocity of physical growth in adolescent period is secondary to the rate of growth during infancy. The dramatic physical changes of body include increase in height and weight, deposition and redistribution of fat, increased lean body mass and enlargement of many organs including the sexual components.

Prabhakaran (2003) stated that adolescent girls are very important section of our society as they are our potential mothers and future home makers. Adolescents aged between 10-19 years account for more than fifth of the world's population. In India this age group forms 21.4 percent of total population.

Brownlie (2001) insisted that unfortunately adolescent girls are a neglected sector of the population of our country. They are poorly fed members of family under our present economic conditions. As a social custom and cultural practice, an adolescent girl enters married life and motherhood when she is neither matured enough to understand the meaning of motherhood nor is in good health to cope with the triple needs of growth, pregnancy and lactation. Several factors such as socioeconomic status, environment, attitude towards girls, ignorance with regard to nutritional requirement, hygiene and illness are responsible for present nutritional status of adolescent girls.

It is a significant period of human growth. It occurs with unique changes during this phase of life. Iron requirement increases due to increased growth pattern and loss of iron through menstrual blood loss. Nutritional anemia during adolescence can affect women in the child bearing years and lead to fetal and maternal morbidity and mortality.

Anemia is one of the problems of public health throughout the world, especially in developing countries. In India, it is an important public health problem affecting people from all walks of life. Iron deficiency anemia is most prevalent and severe in pregnant women, young children and adolescent girls. Seventy percent of the adolescent girls are anemic in India according to many research studies. Iron deficiency anemia is a major threat to safe motherhood. It contributes to increased perinatal maternal mortality, increased fetal growth retardation and low birth weight. In general, Iron deficiency anemia is a major contributory cause of lowered resistance to infection, poor cognitive

development, fatigue, lowered physical activity, poor mental concentration and productivity.

National nutrition monitoring bureau (NNMB) (2000-2001), which conducted a survey and found out that girls between the age of 13-15 years consume 50% of Recommended Dietary Allowance and 68% of them had inadequate to iron.

Health initiatives (2005) conducted a survey and found out iron deficiency anemia is a global public health problem. With global population of 6700 million atleast 3600 million have iron deficiency and out of these, 2000 million suffering from iron deficiency anemia. Adolescence is a crucial phase of growth in the life cycle of an individual. Due to rapid growth there is an increased iron requirement and 65-70% of adolescent girls in India are estimated to be anemic. Anemia not only affects the present health status but also has deleterious effect in the future.

National Family Health Services (NFHS) (1998), reported that 56%of adolescent girls are anemic with 1.9% having severe anemia, 17.9% moderate anemia and 36.2% having mild anemia.

Iron deficiency is the most common cause of anemia in adolescents, and an adolescent girl is 10 times more likely to develop anemia than a boy. Teenagers and adolescents in lower-income homes are also at a higher risk. However, children from all backgrounds can develop iron deficiency and iron deficiency anemia.

In our country, girl children are not cared more as compared to boys, they are given less preference starting from food to everything when compared to male children. This condition is now being changed. This may be one of the reasons for adolescent girls being anemic.

As a nurse she should participate in all the three levels of care such as preventive, promotive and curative aspects of care. Preventive care is more needed in case of iron deficiency anemia. The nurse should educate the vulnerable group about the dietary pattern and other healthy practices like wearing chapel, avoiding open-field defecation, dewarming regularly, intake of iron rich diet. She should reinforce if through health education to the community. She can guide them to receive the benefits of governmental programmes and make the benefits available to the needed people.

Through nutrition education the health status of adolescent girls will be improved. Creating awareness can tremendously affect the prevalence of iron deficiency anemia among adolescent girls. Through IEC package awareness can be created regarding Iron deficiency anemia. There are only minimum number of IEC studies on iron deficiency anemia in Tamil Nadu.

Jose and Sandeep (2009) conducted a study on school eye screening and the national programme for control of blindness. As a result, it is estimated that there are 1.4 million blind children in the world, the prevalence of blindness in India is estimated to be 0.8/1000 children in the age group of 0 to 18 years. Currently it is estimated that 270,000 blind children in India.

Blind adolescent girls are neglected in all ways and proper guidelines were not given to them. Most of them stay in the hostel and going to school. It was noticed that they did not get good nutrition and medical services, their menstrual problem were not considered. They did not get proper guidelines, which pose them at risk for iron deficiency anemia. So the investigator is interested in doing this study.

STATEMENT OF THE PROBLEM

A pre experimental study to evaluate the effectiveness of Information Education Communication package on iron deficiency anemia in terms of

knowledge, expressed practice among blind adolescent girls in Rovers Girls Hr. Sec. School, Perambalur, 2011.

OBJECTIVES

1. To assess the knowledge of blind adolescent girls regarding iron deficiency anemia before IEC package.
2. To assess the expressed practice of blind adolescent girls regarding iron deficiency anemia before IEC package.
3. To evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia among blind adolescent girls.
4. To determine the relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.
5. To determine the association between the knowledge of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.
6. To determine the association between the expressed practice of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

RESEARCH HYPOTHESES

At $p < 0.05$ level

H1: There would be a significant difference in the level of knowledge related to iron deficiency anemia among blind adolescent girls after Information Education Communication package.

H2: There would be a significant difference in the level of expressed practice related to iron deficiency anemia among blind adolescent girls after Information Education Communication package.

H3: There would be a significant relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.

H4: There would be a significant association between the selected demographic variables with knowledge on iron deficiency anemia among blind adolescent girls.

H5: There would be a significant association between the selected demographic variables with expressed practice on iron deficiency anemia among blind adolescent girls.

OPERATIONAL DEFINITION

Effectiveness

Measuring the extent to which targets are being met, and detecting the factors that hinder or facilitate their realization. It also involves establishing cause-effect relationships about the extent to which a particular policy (or a set of policies) produces the desired outcome.

In this study, it refers to find out a desired result of information education communication package on iron deficiency anemia among blind adolescent girls, as measured by knowledge and expressed practice questionnaire.

Information Education Communication Package

Information Education Communication for health is used as a general terms for communication activities in health promotion. Various aspects coming under Information Education Communication package are health behavior, health education, planning for health education, education with individuals, groups and communities, communicating health messages and media for communicating health messages.

In this study, it refers to a technique which helps to provide teaching to blind adolescent girls regarding iron deficiency anemia by using models, fruits which contains iron rich foods and handouts by braille method on prevention of iron deficiency anemia.

Iron Deficiency Anemia

Iron deficiency anemia is a hypochromic type of anemia caused by a disorder in haemoglobin synthesis due to decreased amount of total body iron.

Knowledge

Information and skills acquired through experience or education.

In this study, it refers to understanding about Iron Deficiency Anemia among blind adolescent girls as measured by structured questionnaire.

Expressed Practice

The actual application or use of a plan or method are expressed, as opposed to theories related to it.

In this study, it refers to the expression of the blind adolescent girls regarding causes, diagnosis, management and prevention of iron deficiency anemia as measured by expressed practice questionnaire.

Blind Adolescent Girl

It refers to the blind girls between the age group of 12 to 18.

ASSUMPTION

1. Health education will promote early health seeking behaviour.
2. Adequate knowledge of iron deficiency anemia will help in adopting positive attitude towards health practice.
3. Knowledge awareness regarding iron deficiency anemia is poor among blind adolescent girls.

DELIMITATION

This study was delimited to

1. blind adolescent girls
2. 30 samples
3. 6 weeks

CHAPTER II
REVIEW OF LITERATURE

INTRODUCTION

Researchers almost never conduct a study in an intellectual vacuum, these studies are usually undertaken within the content of an existing base of knowledge. Researchers often undertaken a literature review to familiarize themselves with the knowledge base.

(Polit and Hungler 1995)

An extensive review of literature was done to get a broader view of the problems. The review of related literature had been arranged as the following headings.

Literature related to prevalence, causes, consequences and management of iron deficiency anemia among adolescent girls.

Literature related to IEC package on iron deficiency anemia among adolescent girls.

LITERATURE RELATED TO PREVALENCE, CAUSES, CONSEQUENCES AND MANAGEMENT OF IRON DEFICIENCY ANEMIA AMONG ADOLESCENT GIRLS

Mittal et al. (2010) conducted an interventional study on the effect of change in dietary behaviors and iron supplementation for reduction of iron deficiency anemia among 104 adolescent girls. The girls were administered iron/folate and calcium tablets on alternate day for 3 months. Result showed there was an increment of 19.55g/l hemoglobin in the group of girls receiving IFA supplements whereas hemoglobin decreased slightly in girls in the control group. A significant weight gain of 2.66kg was seen in the intervention group, where as girls in the control group showed little weight gain.

Meier (2010) conducted an interventional study to evaluate the effectiveness of iron supplementation regarding prevention of iron deficiency anemia in adolescent girls. Randomized double blind clinical trial placebo control design was used, participants were randomized to receive iron supplementation or placebo. The result was 59% of adolescent placebo-supplemented and 20% of adolescent iron-supplemented patients exhibited iron deficiency anemia.

Toteja (2009) stated that iron deficiency anemia is one of the major public health problem. The prevalence of iron deficiency anemia is 60% among adolescent girls. Under the anemia prevention and control program of the government of India, iron and folic acid tablets are distributed, but no such program exists for adolescent girls.

Hockenberry and Wilson (2009) stated that iron deficiency anemia causes edema, retarded growth, irritability, tachycardia, fatigue, glossitis, angular stomatitis, koilonychias, impaired cognitive and motor skills, social and behavioral problems.

Kyle (2009) stated that children who belongs to low socio economic status may be more prone to iron deficiency anemia.

Gandhi (2009) conducted a survey among adolescent girls between 17-19 years of age and found out that girls with low socio economic background were more prone for iron deficiency anemia.

Kyle (2009) stated that iron supplement are usually provided in the form of ferrous sulfate or ferrous fumarate. In severe cases blood transfusions may be indicated.

Bowden (2009) stated that nurse has significant role in providing education concerning the treatment and prevention of iron deficiency anemia. In addition to providing education the nurse reaches out into the community.

Children and families who develop dietary habits that facilitate iron intake and absorption, and who receive prophylactic iron supplements during time of increased iron need, are less likely to experience iron deficiency anemia.

Kanani and Sen (2009) conducted a study to assess impact of daily and intermittent IFA supplementation on physical work capacity of under-privileged school girls, 163 adolescent girls were involved, 3 randomly selected schools were given IFA tablets either once weekly or twice weekly or daily for one year. The fourth school was selected as control group, the effects on physical work capacity in young girls are more in daily IFA supplementation than twice weekly supplementation.

Sharma (2008) stated that lack of dietary iron is the Leading cause of nutritional deficiency and most common cause of anemia in adolescent girls is heavy menstrual flow. Only 1mg. of iron is absorbed for every 10 to 20 mg of iron ingested. Anemia leads to fall in academic performance with decline in memory and concentration levels and also susceptibility of infection in adolescents.

Kowsalya (2008) conducted a study on prevalence of anemia in 100 adolescent girls (13-18 years) in Manipur. The results revealed that, among the total subjects, 30 were moderately anemic (7-10 g/dl) and 25 girls were mildly anemic (10-12 g/dl). Ten girls were severely anemic (< 7.0 g/dl).

Elizabeth (2008) stated that treatment for iron deficiency is oral iron supplementation upto 6mg/kg elemental iron/day for 3-4 months to correct iron deficiency and to replenish the stores. Ferrous sulphate supplies 20% of elemental iron. Iron deficiency anemia is also treated by iron rich food items like meat, 3Gs (green leafy vegetables, grams and grains), dates, water melon etc. Cooking in iron vessels is said to increase iron intake.

Vikas (2008) conducted a study to assess the clinical response and side effects of ferrous sulfate and iron polymaltose complex (IPC) in 118 adolescence (12-18 years) with IDA subjects were randomized to receive therapy with either oral IPC or oral FS. Children who received ferrous sulfate were having high Hemoglobin level and less residual complaints as compared to those who had received iron polymaltose complex. This study suggests ferrous sulfate has a better clinical response and less significant adverse effects during treatment of iron deficiency anemia in children.

Amsterdam (2008) conducted a cross-sectional study to determine the prevalence of iron deficiency anemia among adolescent girls between the age group of 12-18 years from 20 different school in western Iran. The prevalence of anemia among adolescent girls was 21.4%, there were 47 girls with iron deficiency anemia. Around 57.3% of anemic girls were iron deficient, there were no significant differences between the presence of anemia and level of education of parents.

Alade, Zee and Turgean (2007) conducted a study to determine the association between estimated absorbable iron intake and iron deficiency. The association between dietary iron intake and iron status was studied in 1000 adolescent girls aged between 14-16 years from Benin. 50 were boarding at the school, while 50 lived at home. Dietary intake were obtained by 24 hours recalls and absorbable iron intakes were estimated. 73% of adolescents met the recommendation for dietary iron intake, 43% of subjects were anemic, iron deficiency was present in 14 % of subjects, while 13% had iron deficiency anemia. The result was total absorbable iron intake were highly and positively associated with hemoglobin and hematocrit concentration.

Saini (2007) stated that there are estimated 1.2 billion young adolescent girls aged 10-19 years in the world. In our country, nearly 50% of children are anemic. The children during the phase of rapid growth such adolescent age are at higher risk of developing iron deficiency anemia.

Hockenberry and Wilson (2007) stated that adolescent girls are also at risk for iron deficiency because of their rapid growth rate, menstrual flow, poor eating habits and obesity.

Gale (2007) stated that iron deficiency is still a big problem today. In fact, the WHO lists iron deficiency as one of the top 10 risk factors contributing to death.

Rajaratnam, Abel, Asokan, Jonathan (2007) conducted a study to assess the prevalence of iron deficiency anemia, a baseline survey was carried out in vellore. By selecting 155 and 161 adolescent girls in the age group of 13 to 19 years. Hemoglobin was assessed. The prevalence of anemia was 44.8% with severe anemia being 2.1%, moderate 6.3% and mild anemia 36.5%. There was a decrease in the prevalence as the age increased. A significant association was found between the hemoglobin concentration and girl's education and her mother's educational status.

Gera (2006) conducted a study to evaluate the effect of iron supplementation on physical performance in children (0-18 years) through systemic review of randomized controlled traits. The result was iron supplementation may have a positive effect on the physical performance of children as evaluated through the post exercise heart rate in anemic subjects, blood lactate levels and treadmill endurance time.

Agarwal (2005) conducted a study to examine the benefits of anemia prophylaxis in adolescent school girls by weekly or daily iron-folate supplementation. The result was 85% girls were iron deficient out of which 49.3% were anemic. Weekly administration took longer time to raise hemoglobin but was effective as well as practical. Plasma ferritin estimation in girls showed rise in level in both the treated group.

Basu (2005) conducted a cross sectional study and reported that the prevalence of anemia calculated as per WHO guidelines was significantly higher among adolescent girls (23.9%) as compared to boys. Anemia was observed more in rural (25.4%) as compared to urban (14.2%) adolescents, iron stores estimated by serum ferritin in 183 subjects were deficient in 81.7% and 41.6% of the adolescent girls and boys respectively.

Kaur (2005) reported that the anemia among adolescent girls was found to be due to low socio-economic status, low iron intake, vegetarian diet, history of worm infestation and history of excessive menstrual bleeding but not significantly.

Kara (2004) stated that anemia is defined as quantitative or qualitative deficiency of circulating red cell. Main causes of anemia are insufficient consumption of iron containing foods, poor absorption of iron by the body and loss of blood. Iron deficiency anemia is most prevalent in young children, older children and adolescents.

Malhotra (2004) conducted a descriptive study to find out the prevalence of anemia in adolescents among rural population of north India 215 samples were underwent blood investigation including hemoglobin estimation. The result was low socio economic status, illiteracy and lower body mass index, were associated with higher prevalence of anemia.

Singh (2004) stated that non-vegetarian foods are excellent sources of iron, which is more readily absorbed. Iron absorption is enhanced by intake of vitamin C rich food. Iron therapy must be continued for at least 2 to 3 months to correct anemia and build up the body stores of iron.

Gordon (2004) conducted a study to evaluate the prevalence, severity and risk factors of iron deficiency anemia in adolescent school girls in an area with intense malaria transmission in western Kenya. Two cross- sectional

survey design was used. The study was conducted in schools.648 randomly selected adolescent school girls aged between 12-18 years were involved. The result was the prevalence of anemia was 21.1%, and the prevalence of iron deficiency was 19.8% and 30.4% of anemic girls were iron deficient, malaria was the main risk factor for anemia in younger girls (12-13 years), while menstruation was the principal risk factor in older girls (14-18 years).

Hogan (2003) stated that iron deficiency anemia is treated by correcting bleeding, implementing dietary modification promoting rest, protecting from infection, monitoring cardiac functions. It is often necessary to restrict their milk intake, milk intake should be limited to a maximum of 1 quart per day, As milk decreases iron absorption.

Nelson (2002) stated that various risk factors are involved in anemic like age, family history, genetic factors, oral nutrition, diarrhea and infectious disease. The children who belongs to vulnerable groups such as infancy, older childhood and adolescence are at risk due to rapid physical growth. Especially, school children have lack of knowledge for good dietary practices and personal hygiene.

Ghai (2001) stated that iron deficiency is the most common cause of nutritional anemia in the world. In our country, nearly 50% of children are anemic. The children during the phase of rapid growth such as pre-school and adolescent age are at higher risk of developing iron deficiency anemia.

Marlow (2001) stated that the most significant manifestation of iron deficiency anemia is a porcelin-like or waxy pallor. Other signs symptoms of this condition develop slowly over time and are related to the duration and severity of anemia. The infant or child will have irritability, restlessnee, anorexia, constipation, cardiac dilatation, tachycardia, systolic murmur, spleenomegaly, slowed motor development and cardiac failure.

Sampathkumar (2001) conducted a study on prevalence of anemia and hookworm infestation among adolescent girls in one rural block of Tamil Nadu. This study was conducted among 13-17 years of girls in 10 school of Tamil Nadu. The prevalence of anemia was 76.6% of the 130 girls who provided stool samples, 63% had hookworm infestation. Whom questioned about personal hygiene practices 48.5% of girls reported they did not wear slippers when they go outside, only 65% were bathing daily.

Clayden (2001) stated that iron deficiency anemia is managed by diet like red meat (beaf, lamp, liver, kidney) oily fish and iron therapy is given orally. Although ferrous sulphate is the most readily absorbed salt and treatment of choice, the liquid is unpleasant to taste and usually not well tolerated in young children and adolescent.

Gupta (2001) stated that adolescents are likely to develop iron deficiency anemia because of increased demands. In girls an important additional factor is excessive loss of blood in menses. It is therefore advisable to provide them supplementations of iron/folate, preferably with vitamin C. A public health approach comprising one weekly distribution of iron/folate through school and welfare centers is a describable strategy.

Mckinne (2000) stated that several factors can contribute to iron deficiency anemia, including decreased iron intake, increased iron loss and periods of increased growth rate. Adolescents are also at risk for iron deficiency anemia as they too are experiencing increased growth, often with poor dietary habits.

Deshmuk, Garg and Bharambe (2000) conducted a study on effectiveness of weekly supplementation of iron to control iron deficiency anemia among urban-slum, rural and tribal girls of Maharastra. A baseline and the mid term assessments were done using the cluster-sampling techniques. The haemoglobin estimation was done. The over all prevalence of anemia came

down significantly to 54.3% from 65.3%, the decline was statistically significant in tribal girls (48.6% from 68.9%) and among rural girls (51.6 from 62.8%), but the decline was not statistically significant among urban slum girls. The number of tablets consumed by tribal and rural girls was more compared to urban-slum.

LITERATURE RELATED TO IEC PACKAGE ON IRON DEFICIENCY ANEMIA AMONG ADOLESCENT GIRLS

Kala et al (2010) conducted a study to assess the effectiveness of information education communication programme on knowledge and attitudes of adolescent girls in prevention of Iron and folic acid deficiency anemia. After the intervention 73% had adequate knowledge and 79% of them had most favourable attitude.

Paul, Sulochana (2009) conducted a study to assess the consumption of iron rich food among adolescent girls. The main objective of the study was to increase the number of daily meals from 2 meals to 3-4 meals. Blood samples were collected, IEC teaching was given. It was found that intervention has influenced dietary behaviour, eat lemon with their meals, as well as in the frequency of eating fruits increased blood testing showed that mean hemoglobin levels increased from 5.8 to 9.5.

Kotecha (2005) conducted a study to assess the effectiveness of information education communication package on iron and folic acid supplementation among adolescent girls. The result of the project is, anemia reduced to 20% and improved hemoglobin for 82% of girls in 17 months of intervention period.

Department of preventive and social medicine Vadodora (2005) conducted a study to assess the prevalence and evaluate the effectiveness of information education communication package and iron supplementation. The

result of the study was the reduction achieved minimum in rural area followed by urban area, with both showing a net reduction of over 23% severe anemia and prevalence was reduced from 1.6% at base line to 0.5%.

Saibaba et al (2002) conducted a study to asses the nutritional status and nutritional knowledge of 2500 adolescent girls aged between 10-19 years blood study was done. The study was conducted in three stages in the first stage pre-test was given, in second stage IEC intervention was given for a period of 6 months. It was concluded that IEC intervention resulted in improvement of nutritional knowledge of adolescent girls as well as behavioural pattern envisaged by better cooking methods and increase in the consumption of nutrient rich food.

CONCLUSION

The review of literature explains about prevalence, causes, consequences and management of iron deficiency anemia. It also explains the importance of information education communication programme. The above studies suggest that iron is very important to adolescent girls.

CONCEPTUAL FRAME WORK

Conceptual frame work for a study develop from the existing theory and proposing relationship among them. The model gives directive for planning, data collection and interpretation of findings.

(Burns and Grove, 1995)

The present study aims at determining the effectiveness of IEC package on knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia. The conceptual framework of the present study is developed based on Rosenstock's and Becker's health belief model.

Good health is a common objective to all people - Rosenstock (1974).

Individual Perception

In this study, the individual perceptions are the deficient and expressed practices of the blind adolescent girls regarding iron deficiency anemia.

Perceived Threats

In this study, perceived threat is the deficiency in the blind adolescent girls knowledge and expressed practices regarding iron deficiency anemia which hinder the performance in their real life which will affect the performance, growth and development.

Modifying Factors

Factors that modify a persons perception included the following:

Demographic variables

In this study the demographic variables that have influence over the blind adolescent girls knowledge and expressed practice regarding iron deficiency anemia include age, father's education, father's occupation, mother's education, type of family, family monthly income.

Structural variables

In this study the Structural variables are the prior knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.

Cues to action

Cues to action can be either internal or external. In this study the internal cues include the feeling or thoughts about iron deficiency anemia. The external cues is the investigators and IEC regarding iron deficiency anemia.

Blind adolescent girls are educated regarding definition, grading, causes, clinical manifestation, diagnostic evaluation, management, prevention of iron deficiency anemia, general instruction for iron intake and iron containing diet.

Likelihood of action

The likelihood of a person taking recommended preventive health action depends on the perceived benefits of the action, minus the perceived barriers to the action.

The perceived benefits of action

In this study are the improvement of the knowledge and expressed practice regarding iron deficiency anemia.

The perceived barriers to action

In this study are level of education, family monthly income, parents occupation and negligence of blind adolescent girls.

Likelihood to taking recommended prevention health action is the improvement in the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.

The intervention which is given by the researcher, is based on meeting the needs of the blind adolescent girls regarding iron deficiency anemia.

The model, Rosenstocks and Becker’s health belief model, is best suited for this study which was undertaken to determine the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia, using pre-test and post-test method.

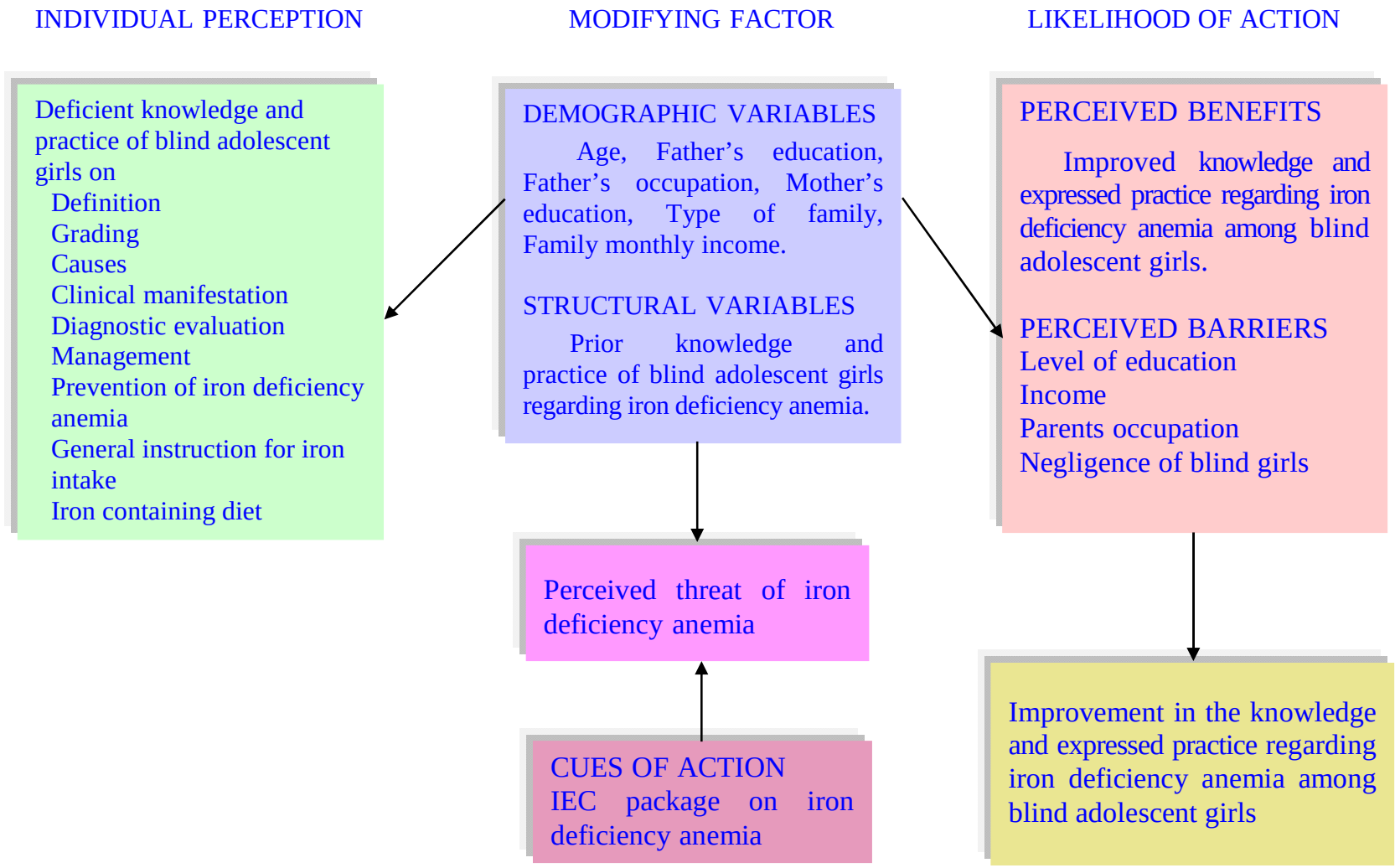

FIGURE 1 CONCEPTUAL FRAME WORK BASED ON ROSEN-STOCKS AND BECKER'S HEALTH BELIEF MODEL

CHAPTER III
RESEARCH METHODOLOGY

Methodology of research refers to investigation of the ways of obtaining, organizing and analyzing data. Methodology studies address the development, validation and evaluation of research tools or methods.

(Polit and Beck 2004)

This section discusses the research approach, research design, setting of the study, population, sample, sample size, sampling techniques, data collection procedure.

RESEARCH APPROACH

Experimental approach, a subtype of quantitative approach was used in this study to evaluate the effectiveness of Information Education Communication package among blind adolescent girls.

RESEARCH DESIGN

Pre-experimental (one group pretest posttest design)

O1 X O2

KEY

O1 - Pre test

X - IEC

O2 - Post test

SETTING OF THE STUDY

This study was conducted in Rover's girls Hr. Sec. School at Perambalur, 40 blind adolescent girls were studying in that school, between the age group of 12-18 years. 3 specially trained teachers were working there. The blind girls were given special education by using braille method. These blind adolescent girls were staying in a hostel near by the school. The reason for

selecting this school was the availability of samples, facility for study and expectation of cooperation from the teaching staff and from parents for collection of data.

POPULATION

The population of the study consisted of blind adolescent girls.

SAMPLE

Blind adolescent girls who were studying in Rover's girls Hr. Sec. School at Perambalur, during the data collection period.

SAMPLE SIZE

The sample size was 30.

SAMPLING TECHNIQUE

Non probability convenience sampling technique was used for selection of samples.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

1. Blind adolescent girls in Rovers Girls Hr. Sec. School, Perambalur.
2. Blind adolescent girls who were willing to participate in study.

Exclusion Criteria

1. Blind adolescent girls with major ailment.
2. Blind adolescent girls who were not attending the class.

DESCRIPTION OF THE TOOLS

The researcher developed a questionnaire to measure the knowledge and expressed practice regarding iron deficiency anemia, this instrument consist of 3 parts, it was described below:

Part 1 : Consisted of demographic characteristics of blind adolescent girls.

Part 2 : Consisted of questionnaire to assess the knowledge related to basic facts about iron deficiency anemia. The knowledge questionnaire consist of 20 questions.

Part 3 : Consisted of expressed practice related to iron deficiency anemia. This questionnaire consist of 10 questions.

INFORMATION EDUCATION COMMUNICATION PACKAGE

Information Education communication package was given for the study subjects. The Information Education communication Programme consists of information of iron deficiency anemia. This includes definition, etiology, pathophysiology, clinical manifestation, diagnostic evaluation, management, prevention and complication of iron deficiency anemia.

SCORING PROCEDURE

Knowledge Scores

The total score was 20. A score of one mark was given for every correct answer and zero was given for every wrong answer. The score was ranged as follows

Adequate knowledge	-	76 to 100 %
Moderately adequate Knowledge	-	51 to 75 %
Inadequate knowledge	-	less than 50%

Expressed Practice Scores

The expressed practice was assessed by a questionnaire, which contains 10 questions with 2 columns rated as “yes” and “no” .If the blind adolescent girl performed the step completely a score 1 was given and if the step was not performed by blind adolescent girls, a score zero was given. The total score was 10.The score was ranged as follows

Unfavorable practice	-	0 to 50%
Moderately favorable practice	-	51 to 75%
Favorable practice	-	76 to 100%

TESTING OF TOOL

VALIDITY

The tool was evaluated by 5 experts, who were requested to give their valuable suggestion about the content areas, relevant, clarity and appropriate need of the items.

RELIABILITY

The reliability of the tool was established by assessing the quality and adequacy of the tool by using split half method, ‘r’ value was 0.82

PILOT STUDY

After obtaining formal administrative approval the pilot study was carried out with 5 blind girls in blind girls rehabilitation center Trichy, from 13.6.2011 to 29.6.2011. There was no modification done in the study. The data collection were amenable to statistical analysis and thus the study was found to be feasible.

DATA COLLECTION PROCEDURE

The period of data collection was started from 2.7.2011 to 12.8.2011. Before starting the study the investigator obtained formal permission from the principal of blind school in Perambalur to conduct the study. After obtaining permission, the blind adolescent girls were first met by the researcher and she introduced herself to them. Samples were selected and pre-experimental design was used. The sample were collected for 6 days a week. The timing of data collection was from 9.30 am to 4.30 pm. According to the availability and convenience of the students, 2 to 3 blind girls were selected per day. The nature and the purpose of the study was explained to the girls. Oral informed consent

was obtained, pre test was conducted, then IEC package was administered to the sample. After 15 days post test was conducted.

PLAN FOR DATA ANALYSIS

The collected data would be tabulated to represent the finding of the study. Descriptive statistics numbers, percentage, mean and standard deviation would be used to analyze the demographic data. Inferential statistics paired 't' test would be used to evaluate the effectiveness of IEC package on Iron Deficiency Anemia. Correlation would be used to determine the relationship between knowledge and expressed practice. Chi-square would be used to find out the association between demographic variables of blind adolescent girls. By using SPSS 13 version all the statistics would be done at $p < 0.05$ level.

ETHICAL CONSIDERATION

The research proposal was approved by the dissertation committee prior to the pilot study. Permission was obtained from the co-ordinator, principal of Dr. G. Sakunthala College of Nursing and the principal of the blind school to conduct the study. The oral consent was obtained from each participant of the study before starting the data collection. Assurance was given to the subjects that the anonymity of each individual would be maintained.

CHAPTER IV
ANALYSIS AND INTERPRETATION OF DATA

INTRODUCTION

The data themselves do not provider answer to research questions. So the data need to be processed and analyzed in an orderly coherent fashion. After the analysis, they must be systematically interpreted. Interpretation is the process of making sense of the results and examining their implications.

This chapter deals with the description of the sample, analysis and interpretation of data to assess the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia, evaluate the effectiveness of information education communication in terms of knowledge regarding iron deficiency anemia of blind adolescent girls in Rovers Girls Hr. Sec. School. The obtained data have been classified, grouped and analyzed statistically based on the objectives of the study.

OBJECTIVES

1. To assess the knowledge of blind adolescent girls regarding iron deficiency anemia before IEC package.
2. To assess the expressed practice of blind adolescent girls regarding iron deficiency anemia before IEC package.
3. To evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia among blind adolescent girls.
4. To determine the relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.
5. To determine the association between the knowledge of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

6. To determine the association between the expressed practice of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

THE STUDY FINDINGS WERE REPRESENTED AS FOLLOWS

Section:1 Frequency, percentage distribution of demographic variables of blind adolescent girls.

Section:2 Percentage distribution of knowledge and expressed practice percentage scores of blind adolescent girls before IEC package administration.

Section:3 Comparison of mean scores between pretest and posttest.

Section:4 Correlation between knowledge and expressed practice scores of posttest.

Section:5 Association between the selected demographic variables and post-test level of knowledge and post-test level of expressed practice of blind adolescent girls regarding iron deficiency anemia.

SECTION I

This section deals with demographic variables of the samples.

Table 1

Frequency distribution of sample according to the demographic variables.

n = 30

S. No.	Demographic Variable	Frequency	Percentage
1.	Age		
	a. 12 to 14 years	12	40
	b. 15 to 18 years	18	60
2.	Father's occupation		
	a. Unemployed	15	50
	b. Business	13	43.3
	c. Employee	2	6.7
3.	Mother's education		
	a. Illiterate	16	53.3
	b. Secondary education	12	40
	c. Under graduate	2	6.7
4.	Father's education		
	a. Illiterate	6	20
	b. Secondary education	22	73.3
	c. Under graduate	2	6.7
5.	Type of family		
	a. Nuclear	12	40
	b. Joint	18	60
6.	Family monthly income		
	a. < Rs.3000/-	11	36.7
	b. Rs.3000/- to 8000/-	17	56.7
	c. > Rs.8000/-	2	6.7

Table 1 describes the frequency distribution of sample according to their demographic variables.

Majority of blind adolescent girls 18(60%) were between 15 to 18 and 12(40%) were between 12 to 14 years.

Regarding father's occupation majority of them 15(50%) were unemployed, 13(43.3%) were doing business, 2(6.7%) were employed.

Regarding mother's education most of them 16(53.3%) were illiterate, 12 (40%) were secondary educated and 2(6.7%) were under graduated.

Regarding father's education, most of them 22(73.3%) were secondary educated, 6(20%) were illiterate and 2(6.7%) were under graduated.

Regarding type of family most of them 18(60%) were belonged to joint family and 12(40%) were belonged to nuclear family.

Regarding family monthly income majority of them 17(56.7%) have family income between Rs.3000/- to 8000/-, 11(36.7%) have family income below Rs.3000/- and 2(6.7%) have family income above Rs.8000/-.

SECTION II

This section deals with the knowledge scores and expressed practice scores before IEC package.

Table 2

Percentage distribution of knowledge scores of blind adolescent girls before IEC package administration.

S. No.	Knowledge	Frequency	Percentage
1.	Inadequate	29	96.7
2.	Moderately adequate	1	3.3
3.	Adequate	0	0

Table 2 describes percentage distribution of knowledge scores of blind adolescent girls before IEC package administration. The level of knowledge during pre-test was, inadequate among 29(96.7%) subjects, moderately adequate among 1(3.3%) subject.

Table 3

Percentage distribution of expressed practice scores of blind adolescent girls before IEC package administration.

S. No.	Expressed Practice	Frequency	Percentage
1.	Unfavorable practice	26	86.7
2.	Moderately favorable practice	4	13.3
3.	Favorable practice	0	0

Table 3 describe the percentage distribution of expressed practice scores of blind adolescent girls before IEC package administration. The level of expressed practice during pretest was unfavorable among 26(86.7%) subjects, moderately favorable among 4(13.3%) subjects.

SECTION III

This section deals with the comparison of mean scores between pre-test and post-test.

Table 4

Comparison of mean scores between pre-test and post-test.

Component	Pre-test Mean	Post-test Mean	Mean Differences	Standard Deviation	Paired ‘t’ test
Knowledge	43.33	78.00	34.67	1.145	33.494**
Expressed Practice	43.33	78.00	34.67	1.253	15.305**

** $p < 0.01$

Table 4 describe the comparison of mean scores between pre-test and post-test the mean post-test knowledge (78.00) was higher than the mean pretest knowledge (43.33) with standard deviation (1.145) and the obtained ‘t’-value (t-33.494) was significant at < 0.01 where as the mean posttest expressed practice (78.00) was higher than the mean pretest expressed practice (43.33) with the standard deviation (1.253) and obtained ‘t’- value (t-15.305) was significant at < 0.01. The stated research hypothesis H1 and H2 was accepted.

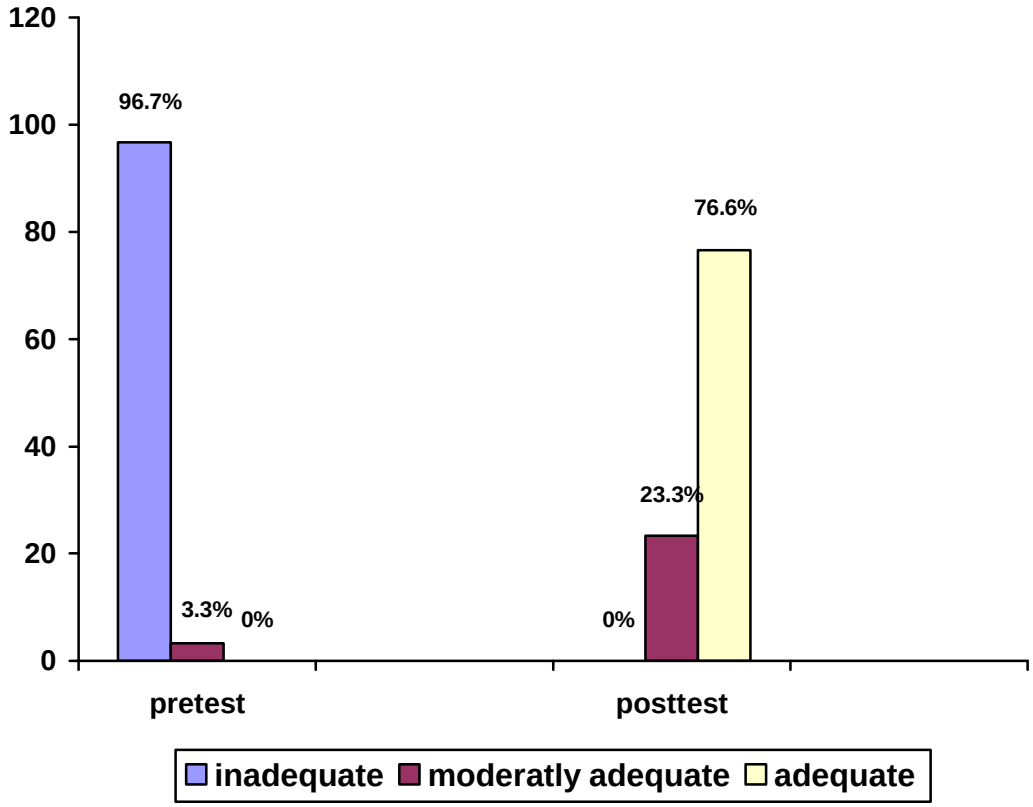

Figure 2

Percentage distribution of knowledge scores of blind adolescent girls before and after IEC package administration.

Figure 2 describes percentage distribution of knowledge scores of blind adolescent girls before and after IEC package administration. The level of knowledge during pre-test was inadequate among 29(96.7%) subjects, moderately adequate among 1(3.3%) subjects. Where as the level of knowledge during the post-test was adequate among 23(76.7%) subjects, moderately adequate among 7(23.3%) subjects.

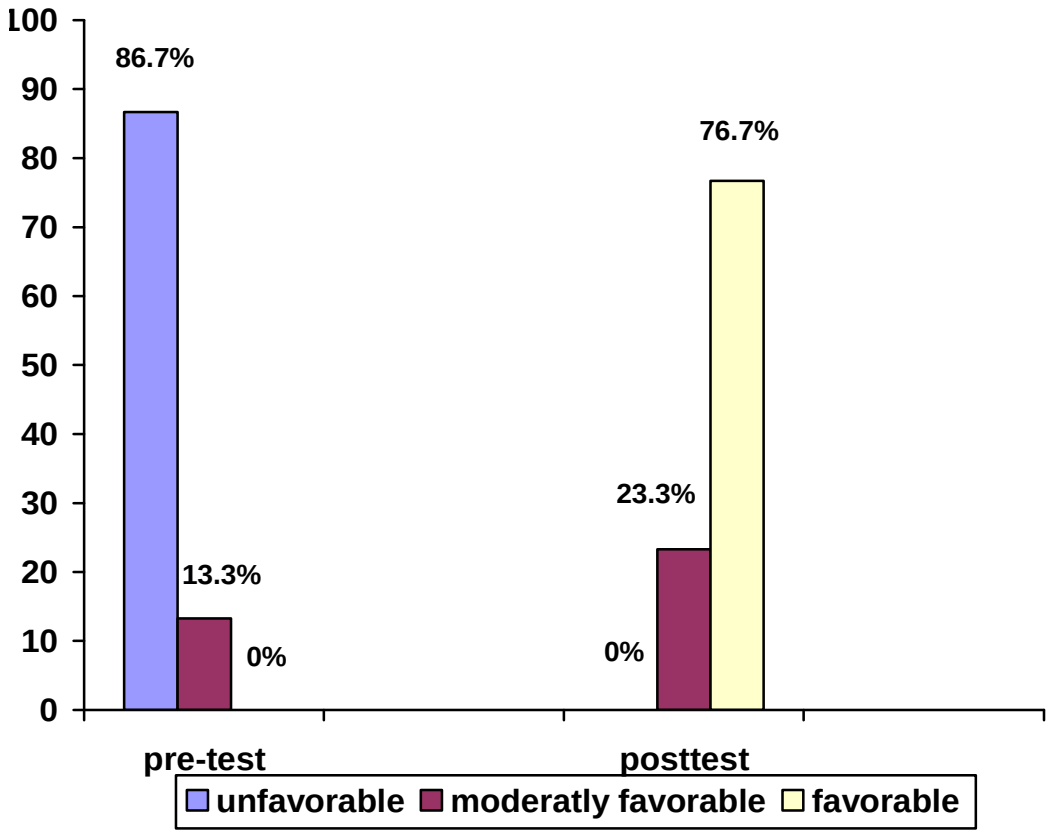

Figure 3

Percentage distribution of expressed practice scores of blind adolescent girls before and after IEC package administration.

Figure 3 describes percentage distribution of expressed practice scores of blind adolescent girls before and after IEC package administration. The level of expressed practice during pretest was unfavorable among 26(86.7%) subjects, moderately favorable among 4(13.3%) subjects. Where as during post test the level of expressed was favorable among 23(76.7%) subjects, moderately favorable among 7(23.3%) subjects.

SECTION IV

This section deals with correlation between knowledge and expressed practice scores of the posttest.

Table 5

Correlation between knowledge and expressed practice scores of the posttest.

Component	Correlation 'r'
Knowledge Expressed practice	0.874**

**p < 0.01

Table 5 describes the correlation between knowledge and expressed practice scores of the post-test. There was a significant correlation (r=0.874) between the post-test knowledge and post-test expressed practice. Hence the stated hypothesis H3 was accepted.

SECTION V

This section deal with the association between the selected background variable of the sample and the post test knowledge and expressed practice.

Table 6

Association between the selected background variable of the sample and post test knowledge.

S. No.	Demographic Variable	Moderately Adequate	Adequate	χ^2
1.	Age			
	a. 12 to 14 years	3	9	
	b. 15 to 18 years	4	14	0.31
2.	Father's occupation			
	a. Unemployed	7	8	
	b. Business	0	13	
	c. Employee	0	2	9.130**
3.	Mother's education			
	a. Illiterate	7	9	
	b. Secondary education	0	12	
	c. Under graduate	0	2	7.989**
4.	Father's education			
	a. Illiterate	5	1	
	b. Secondary education	2	20	
	c. Under graduate	0	2	15.178**
5.	Type of family			
	a. Nuclear	3	9	
	b. Joint	4	14	0.31
6.	Family monthly income			
	a. <Rs.3000/-	3	8	
	b. Rs.3000/- to 8000/-	4	13	
	c. >Rs.8000/-	0	2	0.704

**$p < 0.01$

Table 6 describes association between selected demographic variables and post-test knowledge. Significant association was found between the post level of knowledge and selected demographic variable of blind adolescent girls such as father's occupation (χ^2 - 9.130), mother's education (χ^2 - 7.989), father's education (χ^2 - 15.178). So the hypothesis H4 was accepted for father's education, mother's education, father's occupation. The other demographic variables (age, type of family, family monthly income) were independent on the post-test knowledge.

Table 7

Association between the selected demographic variables and post expressed practice.

S. No.	Demographic Variable	Moderately Adequate	Adequate	χ^2
1.	Age			
	a)12 to 14 years	3	9	
	b)15 to 18 years	4	14	0.31
2.	Father's occupation			
	a. Unemployed	7	8	
	b. Business	0	13	
	c. Employee	0	2	9.130**
3.	Mother's education			
	a. Illiterate	7	8	
	b. Secondary education	0	12	
	c. Under graduate	0	2	7.989**
4.	Father's education			
	a. Illiterate	5	1	
	b. Secondary education	2	20	
	c. Under graduate	0	2	15.178**
5.	Type of family			
	a. Nuclear	3	9	
	b. Joint	4	14	0.31
6.	Family monthly income			
	a. < Rs.3000/-	3	8	
	b. Rs.3000/- to 8000/-	4	13	
	c. > Rs.8000/-	0	2	0.704

**$p < 0.01$

Table 7 describes the association between selected demographic variables and post-test expressed practice. Significant association was found between the post test level of expressed practice and selected demographic variables of blind adolescent girls such as father's occupation (χ^2 - 9.130), mother's education (χ^2 - 7.989), father's education (χ^2 - 15.178). So the hypothesis H5 was accepted for father's occupation, mother's education, father's education. The other demographic variables (age, type of family, family monthly income) were independent on the post expressed practice.

CHAPTER V
DISCUSSION

This chapter presents the interpretation of the statistical findings. It has been discussed based on the objectives of the study. The study was done to evaluate the effectiveness of Information Education Communication package on iron deficiency anemia among blind adolescent girls at Rovers Hr. Sec. School, Perambalur.

A pre-experimental design was used to conduct the study. Knowledge and expressed practice were assessed by using questionnaire. Non-probability convenience sampling technique was used. The study sample consisted of 30 blind adolescent girls, between 12-18 years of age. Using the above tool, data were collected, grouped and analyzed through descriptive analysis and inferential statistics. The study findings revealed the following.

The aim of the study was to evaluate the effectiveness of Information Education Communication package on iron deficiency anemia among blind adolescent girls.

Majority of blind adolescent girls (60%) were between 15 to18 and (40%) were between 12 to 14 years. Regarding father's occupation majority of them (50%) were unemployed, (43.3%) were doing business, (6.7%) were employed. Regarding mother's education most of them (53.3%) where illiterate, (40%) where secondary educated and (6.7%) were under graduated. Regarding father's education, most of them (73.3%) were secondary educated, (20%) were illiterate and (6.7%) were under graduated. Regarding type of family most of them (60%) were belonged to joint family and (40%) were belonged to nuclear family. Regarding family monthly income majority of them (56.7%) have family income between Rs.3000/- to 8000/-, (36.7%) have family income below Rs.3000/- and (6.7%) have family income above Rs.8000/-.

Majority of them were belongs to low socioeconomic status because most of their parents were uneducated and unemployed and there family monthly income is between Rs.3000/- to 8000/-. This findings were supported by, Asha Gandhi et al. (2009), Malhotra et al. (2004).

The first objective of the study was to assess the knowledge of blind adolescent girls regarding iron deficiency anemia before IEC package.

The results of this study showed that most of the blind adolescent girls lacks knowledge, some of them had fairly poor knowledge regarding iron deficiency anemia. They were not aware about importance of iron and complication of iron deficiency anemia because most of their parents were uneducated and unemployed and this blind adolescent girls were not exposed to this educational environment. By identifying this, I planned to educate them, the information education communication package was prepared according to the need and understanding capacity of the blind adolescent girls. The teaching was given by using hand-out and models.

The second objective of this study was to assess the expressed practice of blind adolescent girls regarding iron deficiency anemia before IEC package.

The level of expressed practice during pretest was unfavorable among most of the subjects because they were unaware. A represented study finding indicates that the nurse can identify the task to improve the practice through health education. Work on a series of small steps to behavioral change which are manageable, achievable and results in recognizable health benefits. The essence of development is to empower people to take change of their own health, and to foster a spirit of self- reliance. This findings were supported by Sampath Kumar (2001).

The third objective of this study was to evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia among blind adolescent girls.

It was surprising to see improvement in the girl's knowledge and practice after the IEC package. They wanted to learn the health aspects, related to iron deficiency anemia. They showed interest in learning from health personnel to obtain necessary information to maintain healthy life. So the investigator concluded that the IEC package was much effective to improve the adolescent girl's knowledge and practice. This study was supported by Ms. Kala et al. (2010), Prakash V. Kotecha (2005), Saibaba A. et al. (2002), Dinesh Paul, Sulochana (2009).

The fourth objective of this study was to determine the relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.

Achieving health literacy implies that health education not only relays information, but also enhances a person's ability to think about healthy behaviors, seek and use information and motivate people to take action to improve health (Raquiba A. Jahan, 2006).

Results from this study indicate that health programs are doing enough to raise health literacy and improve health outcomes, or if they are merely increasing awareness related issues. The concept of health literacy as an outcome of health education, going further than the simple dissemination of messages and enhancement of people's ability to think about healthy behaviors, to seek and use information and motivate people to take action to improve health. This findings was supported by Jose. O. Mora (2002) who stated that information education communication programmes could help to modify consumer behavior in some cases.

The fifth objective of the study was to determine the association between the knowledge of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

The present study shows that there was a significant association which was found between the post test level of knowledge and selected demographic variables of blind adolescent girls such as father's occupation mother's education and father's education. The educated parents were aware about the causes and consequences of iron deficiency anemia, so their children have little amount of knowledge regarding iron deficiency anemia.

In this study the association between the demographic variable and blind adolescent girls knowledge may proportionately be influenced by their father's occupation, education and mother's education. This study was supported by C.M.S. Rewat et al. (2001), Malhotra et al. (2004), Kala et al. (2010) Saibaba A. et al. (2002). There was no significant association found between the post test level of knowledge and selected demographic variables of blind adolescent girls such as age, type of family, family monthly income.

The sixth objective of the study was to determine the association between the expressed practice of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

The present study shows that there was a significant association which was found between the posttest level of expressed practice and selected demographic variables of blind adolescent girls such as father's occupation, mother's education, father's education. In this the parents who are having knowledge regarding iron deficiency will apply that in their practical life and try to modify their practice.

There was no association between the post test level of expressed practice and selected demographic variables of blind adolescent girls such as

age, type of family, family monthly income. The demographic variables of this study indicate that blind adolescent girl's expressed practice may directly be influenced by their father's education, father's occupation, mother's education. This study was supported by Saibaba A. et al. (2002).

CHAPTER VI
SUMMARY, CONCLUSION, LIMITATIONS, IMPLICATIONS AND RECOMMENDATIONS

This chapter presents the summary of the study, conclusion and implications for different areas like Nursing practice, Nursing education, Nursing administration and Nursing research and recommendations for further study.

SUMMARY OF THE STUDY

The purpose of the study was to evaluate the effectiveness of information education, communication package on knowledge and expressed practice regarding iron deficiency anemia among blind adolescent girls at Rovers Hr. Sec. School, Perambalur, 2011.

THE FOLLOWING OBJECTIVES WERE SET FOR THE STUDY

1. To assess the knowledge of blind adolescent girls regarding iron deficiency anemia before IEC package.
2. To assess the expressed practice of blind adolescent girls regarding iron deficiency anemia before IEC package.
3. To evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia among blind adolescent girls.
4. To determine the relationship between the knowledge and expressed practice of blind adolescent girls regarding iron deficiency anemia.
5. To determine the association between the knowledge of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.
6. To determine the association between the expressed practice of blind adolescent girls regarding iron deficiency anemia with selected demographic variables.

The conceptual model of the study was based on Rosen Stock's and Becker's health belief model. The study was conducted by using pre experimental one group pre-test post-test design. The sample size used of the study was 30 blind adolescent girls. Non-probability convenience sampling technique was used to select study samples. The instruments used for the data collection were knowledge and expressed practice questionnaire regarding iron deficiency anemia among blind adolescent girls.

The data were analyzed and interpreted in terms of objectives and research hypothesis. Descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (paired - 't' Test, correlation co-efficient and chi-square) were used to test the hypothesis.

MAJOR FINDINGS WERE AS FOLLOWS

Regarding percentage distribution of sample according to demographic variables, most of the subjects were at the age group of above 15 years. Mostly their fathers were unemployed and secondary educated. Majority of their mothers were illiterate. Most of them belong to joint family and their family monthly income was between Rs.3000 to Rs.8000.

In the present study the level of knowledge during the pre-test was inadequate among 29(96.7%) subjects and moderately adequate among 1(3.3%) subject where as the post-test was adequate among 23(76.7%) subjects, moderately adequate among 7(23.3%) subjects.

In the present study the level of expressed practice during pretest was infavorable among 26(86.7%) subjects, moderately favorable among 4(13.3%) subjects. Where as during post test the level of expressed was favorable among 23(76.7%) subjects, moderately favorable among 7(23.3%) subjects.

The paired 't' test shows the mean posttest knowledge (78.00) was higher than the mean pretest knowledge (43.33) with standard deviation (1.145)

and the obtained ‘t’-valve (t-33.494) was significant at $p < 0.01$. Where as the mean posttest expressed practice (78.00) was higher than the mean pretest expressed practice (43.33) with the standard deviation (1.253) and obtained ‘t’- valve (t-15.305) was significant at $p < 0.01$.

The investigator found that there was a significant correlation ($r = 0.874$) between the post level of knowledge (mean =78.00), standard deviation (0.889) and post level of expressed practice mean (78.00), standard deviation (0.465) significant at $p < 0.01$.

Significant association was found between the post level of knowledge and selected demographic variable of blind adolescent girls such as father’s occupation, mother’s education, father’s education. There was no significant association found between the post test level of knowledge and selected demographic variable of blind adolescent girls such as age, type of family, family monthly income.

Significant association was found between the post test level of expressed practice and selected demographic variables of blind adolescent girls such as father’s occupation, mother’s education, father’s education. There was no significant association found between the post test level of expressed practice and selected demographic variable of blind adolescent girls such as age, type of family, family monthly income.

CONCLUSION

The following are the conclusions based on the study findings.

The knowledge of blind adolescent girls toward iron deficiency anemia were deficient, also their mother’s and father’s education have effect on knowledge of blind adolescent girl’s knowledge. There is need for educational program for blind adolescent girls about iron deficiency anemia.

The expressed practice of blind adolescent girls regarding iron deficiency anemia were inadequate also their demographic variables such as their father's education, occupation and mother's education were significantly in relation with blind adolescent girl's expressed practice regarding iron deficiency. There was a relationship between knowledge and expressed practices of iron deficiency anemia. Therefore, if the knowledge of the girl's increased, simultaneously the expressed practice also increased.

The overall findings of the study showed that there is effectiveness in improving the health of adolescent girls by means of teaching, thus preventing mortality and morbidity rate due to anemia and improve the nutritional status of adolescent girls and motivating a healthy practice.

IMPLICATIONS FOR NURSING PRACTICE

The findings of the study have several implications on nursing practice, education and nursing administration.

NURSING PRACTICE

The findings create awareness that IEC package is an effective tool for teaching. In-service education needs to be provided to all nurses, to update their knowledge regarding Iron deficiency anemia. The nurse must develop a self instructional module aimed at improving knowledge on iron deficiency anemia to the adolescent girls. Repeated education or emphasize on the importance of intake of iron rich sources and other preventive measures should be stressed, as they have a direct bearing on prevention and control of iron deficiency anemia.

The nurse should train the teachers to identify the anemia among adolescent girls by the clinical science and to act as a liaison between the adolescent girls and health care agency. The nurse should create awareness among the teachers and adolescent girls regarding the programs available to prevent and control iron deficiency and other such as nutritional anemia

program. Survey can be conducted to identify the risk group girls. Screening camps can be arranged and early detection can be done through school system to treat and prevent anemia.

The result of the study will help the nurse to enlighten the knowledge on importance of health education. They could also participate in giving health education to the client and the family health education will enhance the knowledge and expressed practice of the people which is an important component in all the MCH services to reduce the mortality and morbidity.

NURSING EDUCATION

The practical knowledge of nurses depends upon the education they receive. So the nursing education should prepare the nurses to realize their responsibility as ‘nurse educator’. The nursing education should prepare the nurses to practice as ‘nurse communicator’ to render their health services in various settings like community, hospital and other areas. The nursing curriculum has to focus the nursing student to develop quality skills in providing IEC package.

All aspects of iron deficiency anemia should be given special focus in the pediatric and community nursing curriculum. In-service education should be carried out periodically to teach nurses and nursing students regarding iron deficiency anemia. Continuing education program can be planned and implement to the nurses to update their knowledge and skills with the new trends in iron deficiency anemia.

NURSING ADMINISTRATION

Studies of this nature will help the nursing administrator authorities to recognize the need for conducting in-service education and continuing education programs for the nursing personnel. The administrator should provide adequate monetary resources in their budget and educative materials

like pamphlets, posters, slides, models and cassettes that contain information on all aspects about iron deficiency anemia.

Nursing administrator should formulate policies that will include staff and students to be actively involve in health teaching. A separate health education department can be organized which can play a major role in educating the adolescents. They should arrange for mass health education campaigns using IEC package. Nurse administrator should be actively involved in initiating awareness programs that will help to bring down the mortality rate. The administrator should support the staff to conduct program in prevention and treatment of iron and folic acid deficiency anemia.

NURSING RESEARCH

The findings of the study helps to expand the body of professional knowledge upon which further researches can be conducted. The study will be a valuable reference material for further researchers. The result of the study can encourage the adolescent girls to adopt healthy life styles. The Indian literature shows that there are only very limited studies conducted so far. Hence more studies can be conducted in this area in order to strengthen the expanded role of nurses.

LIMITATION

1. The study assessed only the blind adolescent girls knowledge and expressed practice, the actual practice could not be observed.
2. There was no control on certain extraneous variables like source of information after the pre-test.
3. The blind adolescent girls were not randomly assigned. Hence the convenience sampling restricts the generalization.
4. The study was done in school set up only

RECOMMENDATIONS FOR FURTHER STUDY

1. A pre experimental study could be conducted to evaluate the effectiveness of IEC package on a large sample in different settings.
2. A pre experimental study could be conducted to evaluate the effectiveness of IEC package by administering IEC package for more days before post-test.
3. A comparative study could be conducted among early and late adolescent girls.
4. Descriptive and qualitative study can be done on iron deficiency anemia.
5. The explorative study can be done to evaluate the association of prevention and management of Iron deficiency anemia with the demographic variables of blind adolescent girls.
6. Quasi-experimental study can be done on prevention and management of iron deficiency anemia.
7. A pre experimental study could be conducted to evaluate the effectiveness of IEC package for mothers who have under 5 children in different settings.
8. A pre experimental study could be conducted to evaluate the effectiveness of IEC package for antenatal mothers in different settings.
9. A pre experimental study could be conducted to evaluate the effectiveness of IEC package with post test after 1 month, 3 months, 6 months.

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APPENDIX - A
LETTER REQUESTING FOR VALIDATION

From

A. Beula Joyce,
II year M.Sc (N),
Dr. G. Sakunthala College of Nursing,
Trichy-5.

To

Through,

The Principal,
Dr. G. Sakunthala College of Nursing,
Trichy-5

Respected Sir,

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

I am A. Beula Joyce M.Sc(N)., student of Dr. G. Sakunthala college of Nursing humbly request you to go through the tools which is to be used for data collection of my dissertation, to be submitted to Dr. M.G.R. Medical University, Guindy, Chennai, as partial fulfilment of my university requirements for the award of the degree of Masters of Science in Child Health Nursing.

The problem statement is "A pre experimental study to evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia in terms of knowledge, expressed practice among blind adolescent girls at Rovers Hr. Sec. School, Perumbalur, 2011".

With regard to his, I request you to give your valuable suggestions regarding the appropriateness of the tool, which I have enclosed. Kindly give your expert comments on the tool.

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

Thanking you,

Yours sincerely,

A. Beula Joyce

APPENDIX - B

LIST OF EXPERTS CONSULTED FOR THE CONTENT VALIDITY OF RESEARCH TOOL

1. **Mrs. S. Prabavathy, M.Sc (N).,**
   Principal,
   Kongu Vellalar College of Nursing,
   Erode.

2. **Mrs. Punithavathy, M.Sc (N).,**
   Asst. Professor,
   Sharmila College of Nursing,
   Besant Nagar,
   Chennai.

3. **Mrs. N. Saraswathy, M.Sc (N).,**
   Professor,
   Madha College of Nursing,
   Madurai.

4. **M. Vani Chitra Devi, M.Sc (N).,**
   Vice Principal,
   Karpaga College of Nursing,
   Pudukottai.

5. **Dr. V. Kanagaraj, M.D., D.C.H., D.L.O.,**
   Paediatrician & ENT Surgeon,
   Dr. G. Viswanathan Speciality Hospitals,
   Trichy.

APPENDIX - C

RESEARCH INSTRUMENT (ENGLISH)

QUESTIONNAIRE ON IRON DEFICIENCY ANEMIA

Introduction

Good morning, I am A. Beula Joyce, II year, M.Sc nursing student of Dr. G. Sakunthala College of Nursing, Trichy. I will ask you a few questions regarding iron deficiency anemia. This is only for educational purpose. The confidentiality will be strictly maintained. Interview schedule to assess the knowledge of blind adolescent girls regarding iron deficiency anemia.

PART A

Instruction

I will read every question please listen carefully and choose the response and answer me.

Demographic Data

1) Age
   - a) 12 to 14 years ( )
   - b) 15 to 18 years ( )

2) Father's education
   - a) Illiterate ( )
   - b) Secondary educated ( )
   - c) Under graduated ( )

3) Mother's education
   - a) Illiterate ( )
   - b) Secondary educated ( )
   - c) Under graduated ( )

4) Father's occupation
   - a) Unemployed ( )
   - b) Business ( )
   - c) Employee ( )

5) Type of family

a) Nuclear ( )

b) Joint ( )

6) Family monthly income

a) < Rs.3000/- ( )

b) Rs.3000/- to 8000/- ( )

c) > Rs.8000/- ( )

PART B

Knowledge Questionnaire

1) What is iron deficiency anemia?
   a) Deficiency of calcium in blood
   b) Deficiency of Iodine in blood
   c) Deficiency of hemoglobin in the blood
   d) Deficiency of Potassium in the blood
2) What is the important cause of Iron Deficiency Anemia?
   a) Inadequate intake of Iron
   b) Inadequate intake of Carbohydrate
   c) Inadequate intake of Calcium
   d) Inadequate intake of Fat
3) What are the common clinical manifestation of anemia?
   a) Abdominal pain and swelling
   b) Pallor and irritability
   c) Nausea and vomiting
   d) Fever and diarrhea
4) How will be the academic performance of adolescent girls affected by Iron deficiency anemia?
   a) Concentration decreases
   b) Concentration increases
   c) Activity increases
   d) Play activity decreases
5) How is the Iron deficiency anemia diagnosed?
   a) Blood test
   b) Stool test
   c) Sputum test
   d) Urine test

6) What is the normal Hb level of adolescent girl?

a) 5 to 7 gms/dl

b) 7 to 10 gms/dl

c) 10 to 12 gms/dl

d) 12 to 13 gms/dl

7) What is the dietary manifestation to prevent Iron deficiency Anemia?

a) Intake of iron rich foods

b) Intake of fatty foods

c) Intake of Iodine rich foods

d) Intake of calcium rich food

8) Which Vitamin should be taken orally along with Iron rich foods?

a) Vitamin C

b) Vitamin B

c) Vitamin D

d) Vitamin A

9) What are the common side effects of oral iron supplementation?

a) Fever and Chills

b) Discoloration of stool and constipation

c) Insomnia and Anorexia

d) Palpitation and Oliguria

10) What should be kept in mind while taking oral iron supplementation?

a) Avoid coffee or tea for 30 mts. Before and after iron intake

b) Avoid fatty meals for 30 mts. Before and after iron intake

c) Avoid protein for 30 mts. Before and after iron intake

d) Avoid Carbohydrate for 30 mts. Before and after iron intake

11) What among the following is the richest source of Iron?

a) Liver

b) Brain

c) Egg

d) Fish

12) Which among the following are the richest source of Vitamin C?

a) Drumstick leaves

b) Coriander leaves

c) Amaranth

d) Fenugreek leaves

13) Which among following fruits is the richest source of Vitamin C?

a) Apple

b) Orange

c) Amla

d) Guava

14) What is the complication of severe Iron deficiency anemia?

a) Diabetic mellitus

b) Hypertension

c) Cardiac failure

d) Asthma

15) What are the important measures to prevent Iron deficiency anemia?

a) De-worming and intake of iron rich food

b) Intake of fat and Calcium rich food

c) Intake of protein and Iodine rich food

d) Intake of Carbohydrate and Sodium rich food

16) What is the commonly used Iron preparation?

a) Ferrous sulphate

b) Calcium

c) Phosphate

d) Sodium

17) Regular de-worming must be done once in

a) 6 months

b) 10 months

c) 1 year

d) 3 years

18) Management of severe anemia is

a) Blood transfusion

b) Antibiotic administration

c) Proper nutrition

d) Immunization

19) Iron deficiency anemia will be resolved within

a) 8 to 12 weeks

b) 10 to 14 weeks

c) 1 to 3 months

d) 6 to 12 months

20) Usual amount of Iron intake per day is

a) 180 mg

b) 150 mg

c) 160 mg

d) 200 mg

PART – C

Expressed Practice Questionnaire

S. No.	Questionnaire	Yes	No
1	Do you eat more green leafy vegetables		
2	Do you eat more citrus fruits		
3	Does your mother add asafetida in diet		
4	Do you eat food 3 times daily		
5	Does your mother use Iron vessels to cook		
6	Do you wear chapels while going out		
7	Do you take treatment periodically to de-worm		
8	Do you defecate in open field		
9	Do you take excess tea or coffee		
10	Do you seek medical advice if there is excessive menstrual bleeding		

நேர்முகத்தேர்வின் வடிவமைப்பு – தமிழாக்கம்

பகுதி-1: வழித்திறன் இழந்த வளரிளம் பெண்களைப் பற்றிய விவரம்

குறிப்பு : நான் விவரங்களை கேட்கும்போது நன்றாகக் கவனித்துச் சரியாக பதிலளிக்கவும்.

1. வயது
   - அ) 12ல் இருந்து 14 வயது ( )
   - ஆ) 15ல் இருந்து 18 வயது ( )

2. தந்தையின் கல்வித்தகுதி
   - அ) கல்லாதவர் ( )
   - ஆ) இடைநிலைக்கல்வி கற்றோர் ( )
   - இ) இளங்கலை பட்டதாரி ( )

3. தாயின் கல்வித்தகுதி
   - அ) கல்லாதவர் ( )
   - ஆ) இடைநிலைக்கல்வி கற்றோர் ( )
   - இ) இளங்கலை பட்டதாரி ( )

4. தந்தையின் தொழில்
   - அ) வேலை இல்லாதவர் ( )
   - ஆ) வியாபாரம் ( )
   - இ) பணியாளர் ( )

5. எந்த வகைக் குடும்பத்தைச் சேர்ந்தவர்
   - அ) தனிக்குடும்பம் ( )
   - ஆ) கூட்டுக்குடும்பம் ( )

6. குடும்ப மாத வருமானம்
   - அ) ரூ.3,000/-க்குக் குறைவு ( )
   - ஆ) ரூ.3,000/- - ரூ.8,000/- ( )
   - இ) ரூ.8,000/-க்கு மேல் ( )

பகுதி – 2

முன்னுரை

வணக்கம்,

ஆ. பியூலா ஜாயிஸ் என்கிற நான் டாக்டர் ஜி. சகுந்தலா செவிலியர் கல்லூரியில் படிக்கும் மாணவி. நான் வளரிளம் பெண்களுக்கு இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை பற்றி, உங்களுக்குத் தெரிந்திருக்கும் தகவல்களை அறிய விரும்புகிறேன். அதனால் உங்களை இந்த ஆய்வில் பங்கெடுத்துக் கொள்ளுமாறு வேண்டிக் கொள்கிறேன். உங்களுடைய பதில்கள் இரகசியமாக வைத்துக்கொள்ளப்படும் என்று உறுதியளிக்கிறேன்.

அறிவு சார்ந்த மதிப்பீட்டுமுறை

தயவு செய்து கீழ்க்கண்ட வாக்கியங்களை கவனமாக கேட்கவும். நீங்கள் இதில் நான்கு விதமான பதில்களை தேர்ந்தெடுக்கலாம். இந்த கேள்விகள் இரும்புச்சத்துக் குறைபாட்டினால் ஏற்படும் இரத்தசோகை பற்றிய உங்களது எண்ணங்களை நாங்கள் தெரிந்துகொள்ள உதவுமே தவிர வேறு எதற்காகவும் இல்லை. எல்லா கேள்விகளுக்கும் பதில் சொல்ல முயற்சி செய்யுங்கள்.

1. இரத்தசோகை என்றால் என்ன?
   அ) இரத்தத்தில் கால்சியம் குறைதல்
   ஆ) இரத்தத்தில் அயோடின் குறைதல்
   இ) இரத்தத்தில் ஹீமோகுளோபின் குறைதல்
   ஈ) இரத்தத்தில் பொட்டாசியம் குறைதல்

2. வளரிளம் பெண்களுக்கு இரத்தசோகை ஏற்பட முக்கிய காரணம்?
   அ) இரும்புச்சத்துள்ள உணவை போதுமான அளவு உட்கொள்ளாததால்
   ஆ) மாவுச்சத்து (கார்போஹைட்ரேட்) உள்ள உணவை போதுமான அளவு உட்கொள்ளாததால்
   இ) (கால்சியம்) சுண்ணாம்புச்சத்துள்ள உணவை போதுமான அளவு உட்கொள்ளாததால்
   ஈ) கொழுப்புச்சத்துள்ள உணவை போதுமான அளவு உட்கொள்ளாததால்

3. இரும்புச்சத்து குறைவினால் ஏற்படும் இர்தசோகையின் பொதுவான அறிகுறிகள் யாவை?

அ) வயிற்றுவலி மற்றும் வீக்கம்

ஆ) வெளிறியிருத்தல் மற்றும் சோர்வு

இ) வாந்தி எடுப்பது போன்ற உணர்வு மற்றும் வாந்தி

ஈ) காய்ச்சல் மற்றும் சளி

4. இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்த சோகையினால் பாதிக்கப்பட்ட வளரிளம் பெண்ணின் கல்வித்திறன் எவ்வாறு இருக்கும்?

அ) கவனக் குறைபாடு ஏற்படுதல்

ஆ) கவனிக்கும் திறன் அதிகரித்தல்

இ) சுறுசுறுப்பு அதிகமாக இருத்தல்

ஈ) விளையாடும் திறன் குறைதல்

5. இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்தசோகையை எவ்வாறு கண்டறியலாம்?

அ) இரத்தப் பரிசோதனை

ஆ) மலம் பரிசோதனை

இ) சளி பரிசோதனை

ஈ) சிறுநீர் பரிசோதனை

6. வளரிளம் பெண்களுக்கு சாதாரணமாக இருக்க வேண்டிய (ஹீமோகுளோபின்) இரத்த நிறமியின் அளவு என்ன?

அ) 5-7 கி/டெசிலிட்டர்

ஆ) 7-10 கி/டெசிலிட்டர்

இ) 10-12 கி/டெசிலிட்டர்

ஈ) 12 கி/டெசிலிட்டருக்கு மேல்

7. இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை வராமல் தடுக்க என்ன செய்யலாம்?

அ) இரும்புச்சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

ஆ) கொழுப்புச்சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

இ) அயோடின் சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

ஈ) கால்சியம் சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

8. இரும்புச்சத்து அதிகமுள்ள உணவுடன் எந்த வைட்டமின் எடுத்துக்கொள்ள வேண்டும்?

அ) வைட்டமின் சி

ஆ) வைட்டமின் டி

இ) வைட்டமின் ஏ

ஈ) வைட்டமின் ஈ

9. இரும்புச்சத்து மாத்திரைகள் சாப்பிடும்போது என்னென்ன பிரச்சனைகள் ஏற்படலாம்?

அ) காய்ச்சல் மற்றும் நடுக்கம்

ஆ) மலத்தின் நிறம் மாறுதல் மற்றும் மலச்சிக்கல்

இ) தூக்கமின்மை

ஈ) படபடப்பு மற்றும் சிறுநீர் கழிப்பதில் பிரச்சனை

10. இரும்புச்சத்து மாத்திரை சாப்பிடும்போது கவனத்தில் கொள்ள வேண்டியவை என்னென்ன?

அ) 30 நிமிடத்திற்கு முன்னும் பின்னும் காபி (அ) டீ குடிக்கக்கூடாது

ஆ) 30 நிமிடத்திற்கு முன்னும் பின்னும் கொழுப்புச்சத்துள்ள உணவை உட்கொள்ளக்கூடாது

இ) 30 நிமிடத்திற்கு முன்னும் பின்னும் புரதச்சத்துள்ள உணவை உட்கொள்ளக்கூடாது

ஈ) 30 நிமிடத்திற்கு முன்னும் பின்னும் மாவுச்சத்துள்ள உணவை உட்கொள்ளக்கூடாது

11. கீழ்க்கண்டவற்றுள் எதில் இரும்புச்சத்து அதிகமுள்ளது?

அ) ஈரல்

ஆ) மூளை

இ) முட்டை

ஈ) மீன்

12. கீழ்க்கண்ட கீரை வகைகளில் எதில் இரும்புச்சத்து அதிகமுள்ளது?

அ) முருங்கைக்கீரை

ஆ) பருப்புக்கீரை

இ) முளைக்கீரை

ஈ) வெந்தயக்கீரை

13. கீழ்க்கண்ட பழங்களில் எதில் வைட்டமின் சி அதிகமுள்ளது?

அ) ஆப்பிள்

ஆ) ஆரஞ்சு

இ) நெல்லிக்கனி

ஈ) கொய்யா

14. இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் பின்விளைவுகள் யாவை?

அ) சர்க்கரை வியாதி

ஆ) இரத்தக்கொதிப்பு

இ) இதயக்கோளாறு

ஈ) ஆஸ்த்துமா

15. இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையினை தடுக்கும் செயல்முறைகள் யாவை?

அ) வயிற்றுப் புழுக்களை நீக்கும் சிகிச்சை மற்றும் இரும்புச்சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

ஆ) கொழுப்புச்சத்து மற்றும் கால்சியம் சத்து அதிகமுள்ள உணவை உட்கொள்ளுதல்

இ) அயோடின் சத்து மற்றும் வைட்டமின் அதிகமுள்ள உணவை உட்கொள்ளுதல்

ஈ) மாவுச்சத்து மற்றும் வைட்டமின் ஏ அதிகமுள்ள உணவை உட்கொள்ளுதல்

16. பொதுவாக பயன்படுத்தப்படும் இரும்புச்சத்து எது?

அ) பெரஸ் சல்பேட்

ஆ) சுண்ணாம்புச்சத்து

இ) பாஸ்பேட்

ஈ) சோடியம்

17. எந்த கால இடைவெளியில் வயிற்றுப்புழு நீக்கத்திற்கான மருந்து உட்கொள்ள வேண்டும்?

அ) 6 மாதம்

ஆ) 10 மாதம்

இ) 1 வருடம்

ஈ) 3 வருடங்கள்

18. கடுமையான இரத்தசோகைக்கு எந்த சிகிச்சை முறையை பயன்படுத்தலாம்?

அ) இரத்தம் ஏற்றுதல்

ஆ) மாத்திரைகள் உட்கொள்ளுதல்

இ) சரியாக உணவு உட்கொள்ளுதல்

ஈ) தடுப்பூசி செலுத்துதல்

19. இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்த சோகையை எந்த கால இடைவெளியில் சரிசெய்யலாம்?

அ) 8ல் இருந்து 12 வாரங்கள்

ஆ) 10ல் இருந்து 14 வாரங்கள்

இ) 1ல் இருந்து 6 மாதங்கள்

ஈ) 6ல் இருந்து 12 மாதங்கள்

20. ஒரு நாளில் எந்த அளவு இரும்புச்சத்து உட்கொள்ள வேண்டும்?

அ) 180 மி.கி.

ஆ) 150 மி.கி.

இ) 160 மி.கி.

ஈ) 200 மி.கி.

பகுதி 3

செயல்முறை பற்றிய கேள்வித்தொகுப்பு

தயவு செய்து கீழ்க்கண்ட வாக்கியங்களை கவனமாக கேட்கவும். நீங்கள் இதில் இரண்டு விதமான பதில்களை தேர்ந்தெடுக்கலாம். இந்த கேள்விக்ள இரும்புச்சத்து குறைபாட்டினால் ஏற்படும் இரத்தசோகை பற்றிய உங்களது எண்ணங்களை நாங்கள் தெரிந்து கொள்ள உதவுமே தவிர வேறு எதற்காகவும் இல்லை. எல்லா கேள்விகளுக்கும் பதில் சொல்ல முயற்சி செய்யுங்கள்.

வ. எண்	செயல்முறை பற்றிய கேள்விகள்	ஆம்	இல்லை
1.	நீங்கள் கீரை வகைகளை அதிகம் சாப்பிடுவீர்களா?		
2.	நீங்கள் புளிப்பு சுவையுள்ள பழங்களை அதிகம் சாப்பிடுவீர்களா?		
3.	உங்கள் தாய் உணவில் பெருங்காயம் சேர்ப்பார்களா?		
4.	நீங்கள் தினமும் தவறாமல் 3 வேளையும் உணவு உட்கொள்வீர்களா?		
5.	உங்கள் தாய் சமைப்பதற்கு இரும்பிலான பாத்திரங்களை பயன்படுத்துவார்களா?		
6.	நீங்கள் வெளியில் செல்லும்போது காலணிகள் அணிவீர்களா?		
7.	நீங்கள் வயிற்றுப் புழுக்களை நீக்க முறையாக சிகிச்சை பெறுவதுண்டா?		
8.	நீங்கள் திறந்த வெளியில் மலம் கழிப்பதுண்டா?		
9.	நீங்கள் காபி அல்லது டீ அதிகம் குடிப்பதுண்டா?		
10.	மாதவிடாயின் போது அதிக இரத்தப்போக்கு ஏற்பட்டால் மருத்துவ ஆலோசனை பெறுவீர்களா?		

APPENDIX – D

SCORING KEY

ITEM SCORE -1 KNOWLEDGE QUETIONNAIRE

Item No.	a	b	c	d
1	0	0	1	0
2	1	0	0	0
3	0	1	0	0
4	1	0	0	0
5	1	0	0	0
6	0	0	0	1
7	1	0	0	0
8	1	0	0	0
9	0	1	0	0
10	1	0	0	0
11	1	0	0	0
12	1	0	0	0
13	0	0	1	0
14	0	0	1	0
15	1	0	0	0
16	1	0	0	0
17	1	0	0	0
18	1	0	0	0
19	1	0	0	0
20	1	0	0	0

ITEM SCORE 2 – EXPRESSSED PRACTICE QUESTIONAIRE

ITEM NO.	YES	NO
1	1	0
2	1	0
3	1	0
4	0	0
5	0	0
6	1	0
7	1	0
8	1	1
9	1	1
10	1	0

APPENDIX E
IEC PACKAGE

TEACHING MODULE

Topic	:	Iron deficiency anemia
Group	:	Blind adolescent girls
Venue	:	Rover Girls Hr. Sec. School
Time duration	:	45 minutes
A.V. Aids	:	Models, Handouts, Fruits
Method of teaching	:	Lecture cum Discussion

GENERAL OBJECTIVES

The sample (Blind adolescent girls will be able to acquire knowledge regarding iron deficiency anemia and will apply this knowledge into the day to day practice,

SPECIFIC OBJETIVES

The sample (Blind adolescent girls) will be able to

- understand the definition of Iron deficiency anemia
- state the grading of Iron deficiency anemia
- enumerate the causes of Iron deficiency anemia
- identify the clinical manifestation of Iron deficiency anemia
- state the diagnostic evaluation of Iron deficiency anemia
- explain the management of Iron deficiency anemia
- describe the general instruction for iron intake
- enumerate Iron containing diet
- discuss the preventive measures of Iron deficiency anemia

Specific Objectives	Time	Content	Teachers activity	Learners Activity	A.V. Aids	Evaluation
	5mts	**INTRODUCTION** Nutritional deficiency is more common in our country, Among these anemia is the most common problem especially iron deficiency anemia in adolescents. They are vulnerable group who are in a state of rapid growth and development. Iron deficiency anemia caused by lack of sufficient iron for the synthesis of hemoglobin. Iron is a necessary mineral for body function and good health. Only healthy adolescents can give birth to healthy children. Anemia, especially iron deficiency anemia can be prevented by regular intake of iron rich diet.				
Understand the definition of iron deficiency anemia	2mts	**DEFINITION** **ANEMIA** A decreased amount of hemoglobin in the blood. **IRON DEFICIENCY ANEMIA** Anemia which is caused by deficiency of iron. **NORMAL HEMOGLOBIN COUNT** Adolescent girls: - 12 to 13 gms/dl.	Explaining	Listening		What do you mean by iron deficiency anemia

State the grading of iron deficiency anemia	2mts	**GRADING** **HB count** — **Grade** Below 10 gm/dl — Mild anemia Between 7 to 10 gm/dl — Moderate anemia Under 7 gm/dl — Severe anemia	Explaining	Listening		Tell any two causes of iron deficiency anemia
Enumerate the causes of iron deficiency anemia	6mts	**CAUSES** • Poor dietary intake of iron • Hook worm infestation • Excessive menstrual bleeding • Rapid growth rate • Excessive milk intake • Chronic diarrhea • Mal absorption disorders	Explaining	Listening		What are all the clinical manifestation of iron deficiency anemia
Identify the clinical manifestation of iron deficiency anemia	10mts	**CLINICAL MANIFESTATION** • Pallor (Skin, conjunctiva, tongue) • Irritability • Anorexia • Tiredness • Poor attention span • Decreased concentration • Decreased activity • Diarrhoea • Pica	Explaining	Listening		

		• Unhappiness • Atrophy of tongue papillae • Light headedness In severe cases • Spleenomegaly • Nails become thin, brittle and flat • Koilonychia (spoon shaped concave nails) • Cardiomegaly • Growth retardation				
State the diagnostic evaluation of iron deficiency anemia	2mts	**DIAGNOSTIC EVALUATAION** • Blood test • Physical examination	Explaining	Listening		
Explain the management of iron deficiency anemia	10mts	**MANAGEMENT** • Treat the cause • Oral iron therapy ✓ Ferrous sulphate ✓ Folic acid • Iron rich diet • Parental therapy If oral is not possible means Iron can be given through intramuscular or intra venous injection				

Describe the general instruction for iron intake	2mts	• Blood transfusion It is recommended for severe Anemia and in life threatening situation. **GENERAL INSTRUCTION FOR IRON INTAKE** • For better absorption of iron , administer vitamin C along with iron rich foods • Since iron can cause constipation it is advisable to drink plenty of fluids and eat raw fruits, vegetables. • Avoid the intake of coffee or tea, 30 minutes before or after the intake of iron **SIDE EFFECTS OF IRON THERAPY** • Gastric irritation • Nausea • Vomiting • Diarrhoea / constipation • Abdominal cramps • Staining of teeth • Discoloration of stool in black colour For side effects, doors can be adjusted but therapy should be continued.	Explaining Explaining	Listening Listening		What are all the side effects of iron therapy

Enumerate iron containing diet	2mts	**IRON RICH FOOD** • Rice flakes • Ragi • Cholam • Bengal gram • Soya bean • Amaranth • Fenugreek leaves • Mint • Coriander leaves • Drumstick leaves • Dates • Drumstick • Asafoetida • Cumin • Meat liver • Amla • Guava • Cabbage • Bitter guard • Pepper	Listing	Listening	Original fruits	List any 5 iron containing diet.

List the complication of iron deficiency anemia	2mts	**VITAMIN C RICH FOODS** • Amla • Drumstick leaves • Guava • Cashew fruits • Green chillies • Coriander • Cabbage • Amaranth **COMPLICATION** • hypoxemia • koilonychias • glossitis • Dysphagia • gastritis • Neurological pain or numness and tingling • Increased intra cranial pressure • Impaired immune function • Behavioural disturbance • Growth impairment	Explaining	Listening	Models	What are all the complication of iron deficiency anemia

Discuss the prevention of iron deficiency anemia	2mts	**PREVENTION** • Regular intake of iron containing food along with vit. C rich foods. • Avoid intake of coffee or tea, 30 minutes before or after iron intake • Wearing chapels while walking • Regular deworming at once in 6 months • Cooking in iron vessels • Avoid eating junk foods • Administration of prophylactic iron supplements at puberty to meet the increased needs during the period of growth spurt. • Using toilets for defecation **SUMMARY** Till now we have seen about definition, causes, grade, clinical manifestation, diagnostic evaluation, management and prevention. I hope you all have gained knowledge on Iron deficiency Anemia and you will apply this in practice.	Explaining	Listening	Handout	

இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்தசோகை

பாடம்	:	இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை
குழு	:	விழித்திறன் இழந்த வளரிளம் பெண்கள்
நேரம்	:	45 நிமிடங்கள்
இடம்	:	ரோவர் பெண்கள் உயர்நிலைப்பள்ளி, பெரம்பலூர்.
கற்பிக்கும் முறை	:	கற்பித்தல் மற்றும் கலந்துரையாடல்
கற்பிக்க உதவும் உபகரணங்கள்	:	கையேடு, மாதிரிகள், பழங்கள் மற்றும் விளக்கவுரை

பொதுவான பொருளுரை

விழித்திறன் இழந்த வளரிளம் பெண்கள் இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை பற்றிய விவரங்களை அறிந்து கொள்வார்கள். பின்பு அதை அவர்கள் கடைபிடிப்பார்கள்.

குறிப்பிட்ட பொருளுரை

- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை பற்றி கூறுக.
- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகைக்கான காரணங்களை விவரிக்கவும்.
- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகைக்கான அறிகுறிகள் யாவை.
- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் சிகிச்சை முறைகள் பற்றி விவரிக்கவும்.
- இரும்புச்சத்து நிறைந்த உணவுப்பொருட்களை வரிசைப்படுத்துக.
- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையை தடுக்கும் வழிமுறைகளை பற்றி விவரிக்கவும்.
- இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் பின்விளைவுகளை வரிசைப்படுத்துக.

குறிக்கோள்	நேரம்	பொருளடக்கம்	கற்பிப்பவர் செயல்பாடுகள்	கற்பவர் செயல்பாடுகள்	கற்பிக்க உதவும் உபகரணங்கள்	மதிப்பீடு
	2நிமி	**முன்னுரை** ஊட்டச்சத்து குறைபாடு நமது நாட்டில் மிக பொதுவானதாகக் காணப்படுகிறது. இவற்றில் சோகை, அதிலும் இரும்புச்சத்து குறைபாட்டினால் ஏற்படும் இரத்தசோகை பெரும்பான்மையான வளரிளம் பெண்களில் உள்ளது. அதிக வளர்ச்சி பருவத்தில் உள்ள அவர்களே அதிக பாதிப்புக்குள்ளாபவர்களாக உள்ளனர். இரும்புச்சத்து குறைபாட்டினால் உண்டாகும் இரத்தசோகை வளரிளம் பெண்கள் மத்தியில் அதிகம் காணப்படுகிறது. ஆரோக்கியமான வளரிளம் பெண்களால் மட்டுமே ஆரோக்கியமான குழந்தைகளைப் பெற முடியும். இரத்தசோகை குறிப்பாக இரும்புச்சத்து குறைபாட்டினால் உண்டாகும் இரத்தசோகை இரும்புச்சத்து அதிகம் உள்ள உணவை தொடர்ந்து உட்கொள்வதன் மூலம் தடுக்க முடியும்.				

இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகை பற்றிக் கூறுக.	5நிமி	**இரத்தசோகை என்பதன் பொருள்** இரத்தசோகை என்பது இரத்த சிவப்பணுக்கள் அல்லது இரத்தத்திலுள்ள இரத்த நிறமியின் அளவு, வயதிற்கேற்ற அளவு இருப்பதைவிட குறைவாக இருப்பதே ஆகும். **இரும்புச்சத்துக் குறைபாட்டினால் உண்டாகும் இரத்தசோகையின் பொருள்** இரும்புச்சத்து குறைபாட்டினால் ஏற்படும் இரத்தசோகை என்பது இரும்புச்சத்து குறைவதால் ஏற்படுகிறது. **இரத்த சிவப்பணுக்களின் எண்ணிக்கை** 14 வயதுக்கு மேல் (ஆண்)– 13கி/100மி.லி. 14 வயதுக்கு மேல் (பெண்)– 12கி/100மி.லி. **இரத்தசோகையின் நிலை** 1. 10கி/100மி.லிக்கும் குறைவாக ஹீமோகுளோபின் இருந்தால் - மிகமிதமான இரத்தசோகை 2. 7-10 கி/100மி.லி.க்கும் இடையே ஹீமோகுளோபின் இருந்தால் - மிதமான இரத்தசோகை 3. 7கி/100மி.லி.க்கும் குறைவாக ஹீமோகுளோபின் இருந்தால் - கடுமையான இரத்தசோகை	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்		இரும்புச்சத்துக் குறைபாட்டினால் ஏற்படும் இரத்தசோகை என்றால் என்ன?

இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகைக்கான காரணங்களை விவரிக்கவும்	5நிமி	**இரும்புச்சத்து குறைபாட்டினால் உண்டாகும் இரத்தசோகை ஏற்படுவதற்கான காரணங்கள்** ▪ இரும்புச்சத்துள்ள உணவை சரிவர எடுத்துக்கொள்ளாதது. ▪ அதிகமாக பால் அருந்துதல் ▪ குழந்தைக்கு இணை உணவு ஆரம்பிப்பதை தாமதப்படுத்துதல். ▪ கொக்கிப்புழுத் தொற்றால் தினமும் 0.5 மி.லி. இரத்தம் குடலிலிருந்து உறிஞ்சப்படுகிறது. ▪ மாதவிடாயின்போது அதிகமான இரத்தப்போக்கு ஏற்படுவதால். ▪ இரும்புச்சத்து வளர்சிதை மாற்றத்தில் ஏற்படும் பிழைகள். ▪ தலையில் பேன் அதிகமாக இருத்தல். ▪ ஒரு நாளுக்கு 35 மி.கி. விட குறைவாக இரும்புச்சத்து எடுத்துக்கொள்ளுதல். ▪ குறைவான அளவு இரும்புச்சத்து குடலில் உறிஞ்சப்படுதல். ▪ பானங்கள் காபி (காபின்) மற்றும் தேனீர் (டானின்) இரும்புச்சத்து உறிஞ்சப்படுவதை தடுக்கிறது. ▪ சைவ உணவு அதாவது சில காய்கறிகளில் அதிகமாக உள்ள பைட்டேட் எனப்படும் பொருளும் இரும்புச்சத்து உறிஞ்சப்படுவதை தடுக்கிறது. ▪ தொடர் வயிற்றுப்போக்கு.	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்		இரும்புச்சத்துக் குறைபாட்டினால் ஏற்படும் இரத்தசோகைக்கான காரணங்கள் யாவை?

இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகைக்கான அறிகுறிகள் யாவை?	5நிமி	**அறிகுறிகள்** ▪ வெளுப்பாக இருத்தல் (தோல், கண், நாக்கு) ▪ எரிச்சல் (அ) எளிதில் கோபமுறுதல். ▪ பசியின்மை ▪ சோர்வு ▪ தினமும் செய்யும் செயல்பாடுகளில் தொய்வு ▪ கவனிக்கும் திறன் குறைதல். ▪ வயிற்றுப்போக்கு ▪ உண்ணத்தகாத பொருள்களை உண்ண ஆசை. (களிமண், சாக்பீஸ்) ▪ உற்சாகமின்மை ▪ நாக்கில் உள்ள சுவை மொட்டுக்கள் மறைதல் அல்லது அழிதல். ▪ நீர் கோத்தல். ▪ குறை வளர்ச்சி. **இரத்தசோகை முற்றிய நிலையில்** ▪ மண்ணீரல் வீக்கம் ▪ இதயத்துடிப்பில் தகாத மாற்றம். ▪ நகங்கள் மெலிந்து உடையும் தன்மையுடையதாக மாறுதல். ▪ ஸ்பூன் வடிவ குழிந்த நகங்கள். ▪ இதய வீக்கம்	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்		இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்த சோகைக்கான அறிகுறிகளைக் கூறுக.

இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் சிகிச்சைமுறைகள் பற்றி விவரிக்கவும்.	5நிமி	**சிகிச்சை முறைகள்** ▪ இரத்தசோகை ஏற்படுத்தும் காரணிகளை சரிசெய்தல். ▪ இரும்புச்சத்து சிகிச்சை வாய் வழியாக எடுத்துக்கொள்ளுதல். ▪ கடுமையான சோகையில் இரத்தம் ஏற்றுதல் தொடரவேண்டும். எனவே உடலில் குறைவாக இரும்புச்சத்தை ஈடு செய்ய 8-12 வாரங்கள் தேவைப்படுகிறது. **வாய் வழியாக எடுத்துக்கொள்ளும் இரும்புச்சத்து சிகிச்சையால் ஏற்படும் பக்க விளைவுகள்** ▪ வயிறு எரிச்சல் (அ) உபாதை ▪ வாந்தி ▪ மலச்சிக்கல், வயிற்றுப்போக்கு ▪ வயிற்றுத் தசைபிடிப்பு ▪ பற்களில் கறைபடிதல் ▪ மலம் கருப்பாக வெளியேறுதல். மேற்கண்ட பக்க விளைவுகளுக்கு இரும்புச்சத்தின் அளவை சரி செய்து கொள்ளலாமே தவிர சிகிச்சையை நிறுத்தாமல் தொடர வேண்டும்.	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்		இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையை எவ்வாறு சரிசெய்யலாம்?

இரும்புச்சத்து நிறைந்த உணவுப்பொருட்களை வரிசைப்படுத்துக.	5நிமி	**இரும்புச்சத்து நன்றாக குடலில் உறிஞ்சப்பட செய்ய வேண்டியவை** 1. உயிர்ச்சத்து சி உள்ள உணவை இரும்பு சத்துள்ள உணவுடன் சேர்த்து உட்கொள்ளல் (எ.கா.) நெல்லிக்கனி, ஆரஞ்சு, திராட்சை, கொய்யா போன்றவை. 2. டீ (அ) காபி போன்ற பானங்கள் இரும்புச்சத்து எடுத்துக்கொள்ளும் அரைமணி நேரத்திற்கு முன்னும் பின்னும் தவிர்த்தல். 3. அதிக நீர் அருந்த வேண்டும். **இரும்புச்சத்து நிறைந்த உணவுப்பொருட்கள்** அவல், கேழ்வரகு, சோளம், துவரம்பருப்பு, சோயாபீன்ஸ், கடலைப்பருப்பு, வெந்தயக்கீரை, புதினா, கொத்தமல்லி, பேரீச்சம்பழம், முருங்கைக்காய், பெருங்காயம், சீரகம், ஆட்டுக்கல்லீரல் **உயிர்ச்சத்து அதிகமுள்ள உணவுப்பொருட்கள்** நெல்லிக்கனி, முருங்கைக்கீரை, கொய்யா, முந்திரிப்பழம், பச்சை மிளகாய், அகத்திக்கீரை, கொத்தமல்லி கீரை, முட்டைகோஸ், முளைக்கீரை, பாகற்காய்.	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்	மாதிரிகள், பழங்கள்	இரும்புச்சத்து நிறைந்த உணவுப் பொருட்களைக் கூறுக.

இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் பின்விளைவுகளை வரிசைப்படுத்துக.	2 நிமி	**பின் விளைவுகள்** ▪ இதயம் செயலிழத்தல் ▪ நோய் எதிர்ப்பு சக்தி குறைதல் ▪ வளர்ச்சி குறைபாடு ▪ நடவடிக்கைகளில் மாற்றம் ▪ கால் மரத்துப்போதல் ▪ வாய்ப்புண் ▪ வயிற்றுப்புண் ▪ இரத்தத்தில் உயிர்வாயுவின் அளவு குறைதல்	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்		இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையின் பின்விளைவுகள் யாவை?
இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையை தடுக்கும் வழிமுறைகளைப் பற்றி விவரிக்கவும்.	10நிமி	**இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்தசோகையை தடுக்கும் வழிமுறைகள்** 1. இரும்புச்சத்துள்ள உணவுடன் உயிர்ச்சத்து சி அதிகமுள்ள உணவை உட்கொள்ளுதல். 2. இரும்புச்சத்துள்ள உணவு உட்கொள்ளுவதற்கு 30 நிமிடங்களுக்கு முன்போ அல்லது பின்போ காபி அல்லது டீ அருந்தக்கூடாது. 3. வீட்டிற்கு வெளியே நடக்கும்போது காலில் செருப்பு அணிய வேண்டும். 4. 6 மாதத்திற்கு ஒருமுறை கொக்கிப்புழு தொற்று நீக்கத்திற்கான மருந்து உட்கொள்ளுதல்.	விளக்கவுரை	கலந்துரையாடல் மற்றும் பங்கேற்றல்	கையேடு	இரும்புச்சத்துக் குறைவினால் ஏற்படும் இரத்தசோகையினை எவ்வாறு தடுக்கலாம்?

		5. இரும்பிலான பாத்திரங்களில் சமைப்பது. 6. திண்பண்டங்கள் அதிகம் உட்கொள்வதைத் தவிர்த்தல். 7. வளரிளம் பருவத்தில் தேவையான இரும்புச்சத்து தேவையை சரிசெய்ய இரும்புச்சத்தை தேவையான அளவு பருவமடையும்போது எடுத்துக்கொள்ள வேண்டும். 8. மலம் கழிக்க கழிவறையை பயன்படுத்துதல். 9. தலையில் பேன்கள் வராமல் தடுத்தல். **முடிவுரை** இதுவரை நாம் இரத்தசோகை, அதன் வகைகள், இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்தசோகை, காரணங்கள், அறிகுறிகள், கண்டறியும் முறைகள், சிகிச்சை மற்றும் தடுப்பு முறைகள் பற்றி கற்றுக்கொண்டோம். நீங்கள் அனைவரும் இப்போது இரும்புச்சத்து குறைவினால் ஏற்படும் இரத்தசோகை பற்றி முழுமையாக அறிந்து கொண்டதுடன் மட்டுமின்றி அதை தடுக்கும் செய்முறைகளை உங்கள் தினசரி வாழ்விலும் கடைபிடிப்பீர்கள் என நம்புகிறேன்.				

APPENDIX-F
LETTER SEEKING PERMISSION TO CONDUCT THE RESEARCH STUDY

To

The principal,
Rovers Girls Hr. Sec. School,
Perambalur.

Respected madam,

Sub: Letter seeking permission to conduct the study.

This is to introduce Mrs. A. Beula Joyce, M.Sc. (N) II year student of Dr. G. Sakunthala College of Nursing, Trichy. She is to conduct a research project which is submitted to the Tamil Nadu Dr. M.G.R. Medical University, Chennai, as partial fulfilment of university requirement for the award of Master Degree in Nursing.

Her Topic: "A pre experimental study to evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia in terms of knowledge, expressed practice among blind adolescent girls in Rovers Girls Hr. Sec. School, Perambalur, 2011".

The student is interested in conducting her study among blind adolescent girls on iron deficiency anemia in Rovers Girls Hr. Sec. School. I should be obliged if you kindly grant permission for conducting her study in your esteemed institution.

Thanking you in anticipation.

Yours sincerely,

A. Beula Joyce

REQUISITION LETTER TO MEDICAL GUIDE

From

A. Beula Joyce,
II year M.Sc (N),
Dr.G.Sakunthala College of nursing,
T.V. Kovil,
Trichy-5.

To

Dr. V. Kanagaraj,
Paediatrician & ENT Surgeon,
Dr. G. Viswanathan Speciality Hospitals,
Trichy.

Respected madam,

Sub: Requesting permission for the guidance to conduct the study regarding iron deficiency anemia.

I am studying in II year M.Sc nursing in Dr.G.Sakunthala college of nursing, Trichy. I would like to conduct a study as a partial fulfillment for the degree of M.Sc nursing.

The statement of the problem is "A pre experimental study to evaluate the effectiveness of Information Education Communication package regarding iron deficiency anemia in terms of knowledge, expressed practice among blind adolescent girls in Rovers Girls Hr. Sec. School, Perambalur, 2011".

I humbly request you to guide me and kindly give suggestions for conducting the study, I will be thankful madam.

Thanking you in anticipation

Yours sincerely,

A. Beula Joyce

Place:

Date :