



A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AMONG MOTHER OF SCHOOL GOING CHILDREN REGARDING ANEMIA IN SELECTED RURAL AND URBAN AREA AT BANGALORE

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Background:

The Aim of The Present Study is to Assess The Effectiveness of Structured Teaching Programme on Knowledge Among Mothers of School Children Regarding Anemia in Selected Rural and Urban Area at Bangalore.

Objectives of the study:

1. To evaluate the knowledge among mothers of school children regarding Anaemia.
2. To evaluate the risk factors in relation to Anemia.
3. To compare the pre interventional and post interventional knowledge level of Anemia.

Method:

A descriptive survey approach was used to assess the knowledge on anaemia among mothers of school going children. The study was conducted in rural area at Bangalore. Non probability convenient sampling technique was used to select 60 samples. The tool used for the data collection was structured knowledge questionnaire, which comprised of 12 items on demographic data and 50 items on importance of protein, iron, calcium and vitamins. The reliability of the tool was established by Split Half technique, with 'r' = 0.74. Data gathered was analyzed by using descriptive and inferential statistics in terms of frequency, percentage, mean, standard deviation, and chi-square test.

Results:

The findings of the study includes, out of 60 respondents, 40(66.66%) had inadequate knowledge, 16(26.66%) had moderately adequate knowledge and only 04(6.66%) had adequate knowledge on importance of proteins, calcium, iron and vitamins. The mean percentage level of knowledge of mothers of school going children on importance of proteins, calcium, iron, vitamins was 48.82% and the mean level was 24.41 with

standard deviation of 5.04. In aspect wise level of knowledge, In the aspect of protein, the mean percentage was 46.45% with mean and SD of 5.11±1.53, in calcium aspect, the mean percentage was 46.66% with mean and SD of 4.2±0.93, in the aspect of iron, the mean percentage was 49.00% with mean and SD of 4.9±1.36 and vitamins mean percentage was 50.40% with mean and SD of 10.08±2.84. There was association between the chi-square value between the level of knowledge and education of the mother ($\chi^2 = 9.17, df=3, p<0.05$).

INTRODUCTION:

"Our food should be our medicine and our medicine should be our food."

-Hippocrates

Anaemia is a global public health problem affecting both developing and developed countries with major consequences for human health as well as social and economic development. It occurs at all stages of the life cycle, but is more prevalent in pregnant women and young children. In 2002, iron deficiency anaemia (IDA) was considered to be among the most important contributing factors to the global burden of disease¹. Anaemia is the result of a wide variety of causes that can be isolated, but more often coexist. Globally, the most significant contributor to the onset of anaemia is iron deficiency so that IDA and anaemia are often used synonymously, and the prevalence of anaemia has often been used as a proxy for IDA. It is generally assumed that 50% of the cases of anaemia are due to iron deficiency, but the proportion may vary among population groups and in different areas according to the local conditions. Anaemia is common among children in developing countries and is associated with decreased cognitive and physical development. Anaemia during infancy impairs neurodevelopment.

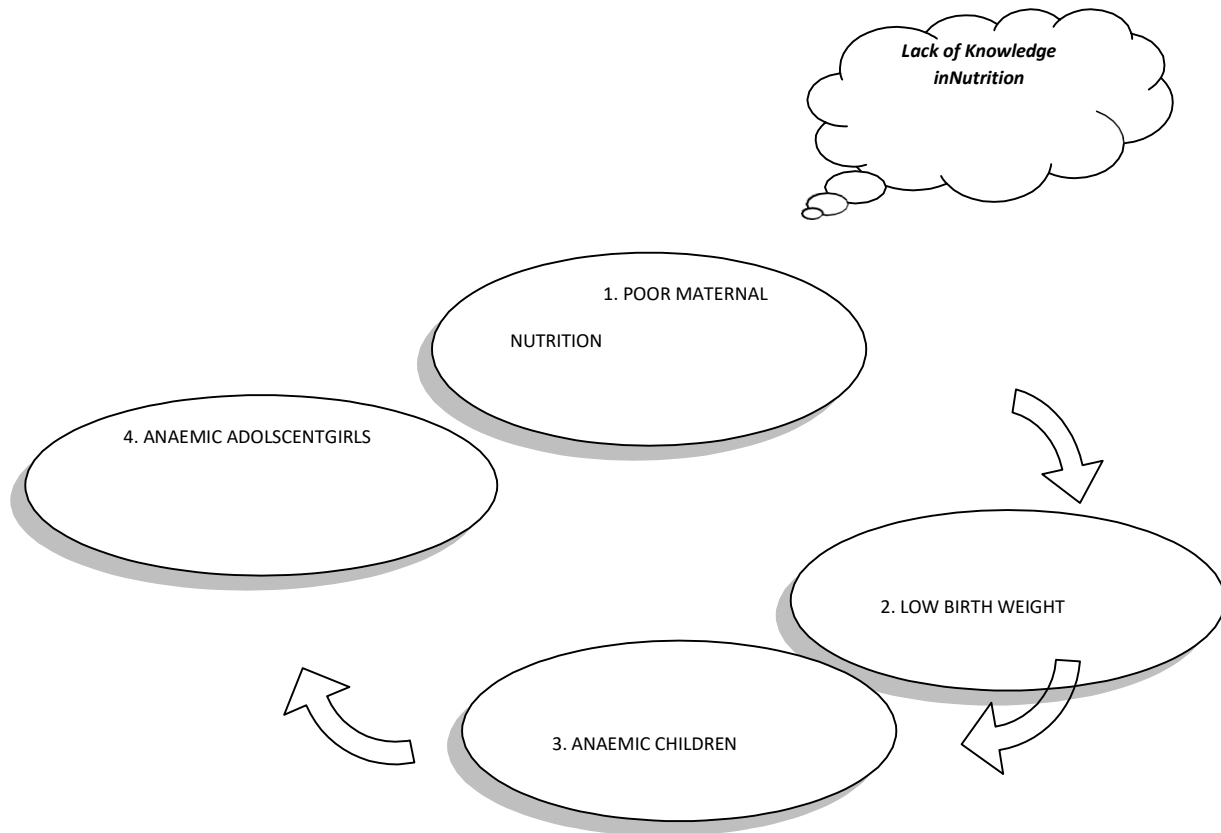
Approximately two billion people throughout the world are anaemic, the most affected of whom are preschool children, schoolchildren, women of reproductive age and pregnant women.³ Anaemia is a major public health problem in India. The prevalence of anaemia is 60 -90 % in different age groups. Anaemia in Children results in impaired cognitive performance, behavioural and language development, and scholastic achievement. Anaemia is also associated with increased morbidity and mortality from infectious diseases. Anaemia in children especially needs to be addressed because of its possible detrimental effects on development and motor skills acquisition. Anaemia is estimated to affect one-half of school-age children in developing countries. The main risk factors for Iron Deficiency Anaemia include a low intake of iron, poor absorption of iron from diets high in phytate or phenolic compounds, and period of life when iron requirements are especially high i.e. growth and pregnancy.

Nutritional anaemia is a recognized public health problem throughout the world. An estimated 30 percent of the world's population is anaemic, with the global prevalence of anaemia among 6-12 yr old children to be 36 per cent and 77 per cent in developing regions respectively. In earlier studies prevalence of anaemia among 5-14 yr old urban and rural Indian children were found to be in the range of 66.7 to 77 per cent. Recent studies on prevalence of anaemia have been on preschoolers only. There is a paucity of data on aetiology of nutritional anaemia among children with special reference to micronutrient deficiencies. Childhood anaemia continues to be a significant public health problem in school children and iron deficiency either alone or in combination is the commonest nutritional cause of anaemia.

Anaemia is a sign of illness and, at the same time, a common manifestation of many different diseases frequently seen in patients in the hospital Emergency department. Eritropoiesis is one of the possible causes of anaemia and one that particularly requires that the possible general risk factors and the hemodynamic state be controlled, as well as that the appropriate local treatment be administered. Anaemia, a common complication of chronic kidney disease,⁸ In such patients, treatment with erythropoietin has been shown to enhance the quality of life.⁹⁻¹² However, evidence suggesting that the correction of anaemia improves cardiovascular outcomes has largely been derived from observational studies and small interventional trials associating a high level of haemoglobin (>12.0 g per decilitre) with a lower rate of complications and death from cardiovascular causes.

The effects of malnutrition on human health are felt right from the commencement of life in the womb are transmitted across the generation. The poor maternal nutrition results in low birth weight infants who are at risk of growth retardation during childhood. It was estimated globally, at any one time, 2008 billion people have anaemia. (UNICEF 2001). Among the different forms of anaemia, iron deficiency anaemia is a problem of serious public health. It was estimated that more than 320 million people in India suffer from iron deficiency anaemia with high prevalence among women and children (40 -80

%) expectant women (60-70%) Children, 50% adolescent girls – Health Action May 2003. Food based approaches to increase iron intake through food fortification and dietary diversification are important, sustainable strategies for preventing IDA in the general population. In settings where iron deficiency is not the only cause of anaemia, approaches that combine iron interventions with other measures are needed.

Transgenerational cycle of malnutrition due to lack of knowledge:-

The control of anaemia among school children can be achieved through a combination of various nutritional interventions such as micronutrient supplementation, food fortification and nutrition education. Our findings emphasize the importance of a multi- sectoral approach to nutritional problems – the importance of empowering women through engagement and education and of maintaining a healthy physical environment are often peripheral concern of nutritionists. Our study highlights the importance of supporting initiatives that address these issues not only for their core benefit, but also for the potential benefit to nutrition. The school years are an opportune time to intervene, and interventions must be based on sound epidemiologic understanding of the problem in this age group. Of the common nutritional problems of public importance in the world, Anaemia is frequently encountered as a serious public health problem in Indian school children. Since 2003, simple health intervention programs such as antihelminthic treatment and vitamin A supplementation have been implemented in primary schools in the Bangalore region at Karnataka, India.

NEED FOR THE STUDY:

Anaemia is an indicator of both poor nutrition and poor health. The most dramatic health effects of anaemia, i.e., increased risk of maternal and child mortality due to severe anaemia, have been well documented.¹⁶⁻¹⁷ Given the multi factorial nature of this disease, correcting anaemia often requires an integrated approach. In order to effectively combat it, the contributing factors must be identified and addressed. In settings where iron deficiency is the most frequent cause, additional iron intake is usually provided through iron supplements to vulnerable groups; in particular pregnant women and young children. The main risk factors for IDA include a low intake of iron and poor absorption of iron from diets. Other causes of anaemia like heavy blood loss during menstruation, or parasite infections such as hookworms, ascaris, and schistosomiasis can lower blood haemoglobin (Hb) concentrations.¹⁸

Kikafunda JK, Lukwago FB, Turyashemererwa F. conducted a study on Anaemia and associated factors among school going children and their mothers in Bushenyi district, Western Uganda. Study results revealed that the overall prevalence of Fe-deficiency anaemia among children and their mothers was 26.2 % and 17.9 %, respectively. There was a significant correlation ($r = 0.5$, $P = 0.008$) between the Hb levels of the mothers and their

children. Place of birth, age of the child, factors related to complementary foods, and formal education and nutrition knowledge of the mother were major factors that were significantly associated ($r = 0.05$, $P = 0.05$) with low Hb levels among the children. The most important factors that were associated with low Hb levels of the mothers were their formal education, nutrition knowledge and health status.¹⁹

Zlotkin SH, Christofides AL, Hyder SM, Schauer CS, Tondeur MC, Sharieff W. of Department of Paediatrics, University of Toronto, Ontario, Canada conducted a study on Controlling IDA through the use of home-fortified complementary foods and found that IDA is more common in South Asian countries including India, Bangladesh and Pakistan than anywhere else in the world. During infancy and early childhood, IDA is associated with impaired psycho-motor development and cognitive function that may be irreversible. As a consequence, there is a growing awareness that IDA is one of many factors impeding socio-economic prosperity of developing nations. The burden of iron deficiency can be reduced by taking a more holistic approach that would include promotion of healthy weaning practices and use of appropriate complementary foods, together with improving the nutritional value of such foods. There is an increasing body of peer-reviewed literature to support the contention that "micronutrient Sprinkles" is an effective strategy to improve the nutritional value of home-prepared complementary foods and thus to reduce the burden of iron deficiency among children.²⁰

Anaemia is particularly prominent in south Asia. In India, for example, up to 88% of pregnant and 74% of non-pregnant women are affected. Throughout Africa, about 50% of pregnant and 40% of non-pregnant women is anaemic. West Africa is the most affected, and southern Africa the least. In Latin America and the Caribbean, prevalence of anaemia in pregnant and non-pregnant women is about 40% and 30% respectively. The highest levels are in the Caribbean, reaching 60% in pregnant women on some islands.²¹ WHO regional estimates generated for preschool-age children and pregnant and non-pregnant women indicate that the highest proportion of individuals affected are in Africa (47.5–67.6%), while the greatest number affected are in South-East Asia where 315 million (95%) individuals in these three population groups are affected.²²

Globally, anaemia affects 1.62 billion people, which corresponds to 24.8% of the population. The highest prevalence is in preschool-age children 47.4%, and the lowest prevalence is in men 12.7%. Iron deficiency anaemia would be considered a public health problem only when the prevalence of haemoglobin concentration exceeds 5.0% of the population. Among the other causes of anaemia, heavy blood loss as a result of menstruation, or parasite infections such as hookworms, ascariis, and schistosomiasis can lower blood haemoglobin (Hb) concentrations. Acute and chronic infections, including malaria, cancer, tuberculosis, and HIV can also lower blood Hb concentrations. The presence of other micronutrient deficiencies, including vitamins A and B12, folate, riboflavin, and copper can increase the risk of anaemia. Furthermore, the impact of haemoglobinopathies on anaemia prevalence needs to be considered within some populations. The present study would be undertaken to add evidence based information in the field of anaemia by determining the prevalence of anaemia among school children from rural and urban area which would help in developing a systematic basis for providing preventive, promotional and curative services.²³

A cross-sectional survey of the nutritional status of 1223 preschool-age children was carried out in a development area in the southern Indian state of Tamil Nadu. Altogether, 45% of the children were underweight (low weight-for-age), 51% were stunted (low height-for-age), and 21% were wasted (low weight-for-height). The rates of severe malnutrition using any of these criteria were low, and only 9.6% of the children were both wasted and stunted. The nature of the malnutrition strongly depended on age group. Rates of stunting increased with age, reaching 63% in the fifth year of life, whereas rates of wasting peaked at 36% in the second year of life and declined to 14% in the fifth year. Surveys that are designed to produce information on stunting and wasting are important in the planning and evaluation of nutrition intervention programmes.¹²

Poor knowledge on part of mothers can lead to disastrous results in the field of care giving. A mother has to regulate the child's behaviour, attitudes, outlook and home environment in the family since these are the basic factors that influence the growth of children. If the mothers are not acquainted with knowledge pertaining to feeding, weaning, health and nutrition including growth and behaviour of children, it might affect the rearing of their children. Providing timely education in the form of intervention to the mothers could fill these gaps in knowledge. With this objective in mind the study aimed at providing educational intervention to mothers regarding knowledge of child care and nutrition

RESEARCH METHODOLOGY:

Research methods refer to steps, procedures and strategies for gathering and analyzing data in research involved. Research methodology is a way to systematically solve the research problem. It is a science of studying how research is done scientifically.

This chapter describes the methodology adopted for evaluating the knowledge on anemia and importance of proteins, calcium, iron, vitamins among mothers of school going children. The methodology includes research approach, research design, variable, setting of the study, population, sample size, sampling technique, sampling criteria, selection and development of tool, description of blue print, description of the tool, development of criteria checklist, content validity of tool, translation of the tool, reliability of the tool, pilot study, data collection procedure, plan for data analysis, ethical

consideration, development of self instructional module.

RESEARCH APPROACH

The research approach is an overall plan or blue print chosen to carry out the study. The selection of research approach is the basic procedure for the conduction of research enquiry.

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RESEARCH DESIGN

The research design is the plan, structure and strategy of investigations of answering the research question, which is an overall plan or blueprint.

Therefore descriptive correlation design was considered as the appropriate design for this study.

VARIABLES

Variables are qualities, properties or characteristics of persons, things or situation that change or vary.

Dependent variable: knowledge on anaemia importance of proteins, calcium, iron, vitamins among mothers of school going children are the dependent variables.

Demographic variable: Age of mother, education of mother, occupation of mothers, age of father, education of father, occupation of father, type of family, number of children in family, monthly income of the family, religion of the family, number of children going to school and children between age group of 6- 12 years are the demographic variables.

SETTING OF THE STUDY

The study was conducted in, Bangalore, which is situated 15 km away from the Goldfinch College of Nursing, Bangalore. It is a rural area were the researcher was posted for field experience, the village is having 10,000

population. This setting is feasible due to geographical proximity and availability of sufficient sample i.e. 60 mothers.

SAMPLE SIZE OF ESTIMATION

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POPULATION

Population includes all possible elements that could be included in research. The requirement of defining population for a research project arises from the need to which the results of the study can be applied.

In this present study, the population includes mothers of under five children in rural areas at Bangalore.

SAMPLE AND SAMPLE SIZE

A sample is a small portion of the population selected for observation and analysis. A sample consists of the sub set of a population selected to participate in a research study.

The samples for the present study includes the mothers of school going children.

The sample size for the present study comprised of 60 mothers of school going children.

SAMPLING TECHNIQUE

Sampling technique is the procedure that the researcher adopts in selecting the sample for the study.

Non probability Purposive sampling technique was used to select the sample for this study. Purposive or judgmental sampling is based on the belief that researchers knowledge about the population can be used to handpick the cases to be included in the sample.

Results

The data themselves do not provide us with answer to our research questions. Ordinarily, the amount of data collected in a study is too extensive to be reliably described by mere personal. In order to meaningfully answer the research questions, the data must be processed and analyzed in some order.

Data analysis is described as "Categorizing ordering, manipulating and summarizing the data to obtain answer to research questions. The purpose of analysis is to reduce the data to an intelligible and interpretable form so that the relation of research problems can be studied."

A descriptive study to evaluate the knowledge on importance of proteins, calcium, iron, vitamins among mothers of school going children was conducted in selected rural areas, Bangalore.

The findings of the study includes, out of 60 respondents, 40(66.66%) had inadequate knowledge, 16(26.66%) had moderately adequate knowledge and only 04(6.66%) had adequate knowledge on importance of proteins, calcium, iron and vitamins. The mean percentage level of knowledge of mothers of school going children on importance of proteins, calcium, iron, vitamins was 48.82% and the mean level was 24.41 with

standard deviation of 5.04. In aspect wise level of knowledge, In the aspect of protein, the mean percentage was 46.45% with mean and SD of 5.11±1.53, in calcium aspect, the mean percentage was 46.66% with mean and SD of 4.2±0.93, in the aspect of iron, the mean percentage was 49.00% with mean and SD of 4.9±1.36 and vitamins mean percentage was 50.40% with mean and SD of 10.08±2.84. There was association between the chi-square value between the level of knowledge and education of the mother ($\chi^2 = 9.17$, $df=3$, $p<0.05$).

Summary

This study was undertaken to assess the knowledge on anemia and importance of proteins, calcium, iron, vitamins among mothers of school going children in selected maternity hospital, Bangalore.

A descriptive approach and descriptive correlation design was used to assess the knowledge on anemia and importance of proteins, calcium, iron, vitamins among mothers of school going children in selected rural area, Bangalore.

The 60 samples were selected by using non- probability purposive sampling technique and for data collection structured interview schedule was used.

Preparation of the tool was done based on review of literature, content validation and establishment of reliability. The content validity was established by item analysis of the tool by experts in the field of community nursing. To ensure the validity of the tool, the tool was given to 07experts in the field community nursing and 01 from statistician.

The reliability of the socio-demographic variables, structured interview schedule and practice checklist were prepared by investigator to find out

whether there was clarity of the items and also whether there was accuracy in the assessment of these tools. The reliability of the tool was tested by using split half method. Statistical test Karl Pearson correlation coefficient was used to find out the reliability, which was $r=0.89$ for knowledge tool.

The investigator conducted the pilot study from 13/01/20 to 21/01/20 to confirm the feasibility of conducting the main study. The study was conducted with 6 samples. The investigator obtained permission from the authority for the study.

The data for main study was collected from 5/03/20 to 4/04/20. The samples of 60 mothers of school going children were selected from Mallathalli. The obtained data was analyzed by using both descriptive and inferential statistics. The analysis was based on the objectives and hypothesis of the study. The level of significance for the hypothesis was at 0.05.

CONCLUSION

CONCLUSION:

The statistical analysis showed that out of 60 respondents, 40(66.66%) had inadequate knowledge, 16(26.66%) had moderately adequate knowledge and only 04(6.66%) had adequate knowledge on importance of proteins, calcium, iron and vitamins. The mean percentage level of knowledge of mothers of school going children on importance of proteins, calcium, iron, vitamins was 48.82% and the mean level was 24.41 with standard deviation of 5.04. In aspect wise level of knowledge, In the aspect of protein, the mean percentage was 46.45% with mean and SD of 5.11±1.53, in calcium aspect, the mean percentage was 46.66% with mean and SD of 4.2±0.93, in the aspect of iron, the mean percentage was 49.00% with mean and SD of 4.9±1.36 and vitamins mean percentage was 50.40% with mean and SD of 10.08±2.84. The obtained chi-square value shows that there was a significant association between the level of knowledge and education of the mother ($\chi^2 = 9.17$, $df=3$, $p<0.05$), but it didn't show any significant association with other demographic variables of mothers of school going children. Hence the stated hypothesis is that there is significant association between level of knowledge with selected demographic variables of school going children's mothers is accepted only for the demographic variable; education of the mother.

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