

A Study to Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding Weekly Iron Folic Acid Supplementation Programme (WIFS) among School Children Studying in Selected Govt. School of Tirupathi

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ABSTRACT

The WIFS programme will be implemented in urban and rural areas and will target school adolescent boys and girls in school and out-of-school adolescent girls (both married and unmarried). The WIFS strategy involves a “fixed day” approach for IFA distribution. The aim of the study was A study to evaluate the effectiveness of structured teaching programme on knowledge regarding weekly iron folic acid supplementation programme (WIFS) among school children studying in selected govt. school of Tirupathi.”

OBJECTIVES OF STUDY:

- To assess the level of knowledge regarding on WIFS programme by pre -test.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding WIFS programme among school children by post-test.
- To find out the association between the post -test knowledge regarding WIFS programme among school children with their selected socio-demographic variables.

HYPOTHESIS:

- **H01:** There will be no significant difference between pre -test and post -test knowledge of school children regarding WIFS programme.
- **H02 :** There will be no significant association between the post -test knowledge of school children regarding WIFS programme with their selected socio demographic variables.

A quantitative approach with pre-experimental one group pretest post-test research design was adopted. Simple random sampling technique was used. Sample size was 100. The investigator evaluate knowledge of school children using of structured questionnaire regarding WIFS programme after taking consent

from sample .After conducting the pretest, the researcher provided structured teaching programme for a period of 45 minutes on the same day. After one week post test was conducted using the same research tool.

Results :

In this present study the level of knowledge scores in pre-test ,out of 100 school children majority 61(61%)were had poor knowledge followed by 39 (39%) of them had very poor knowledge and none of them were had excellent ,good, average knowledge where as in post-test majority of them 54(54%) had good knowledge followed by 32 (32%) had average knowledge ,11(11%) had poor knowledge ,very few 3(3%) of them had excellent knowledge and none of them had very poor knowledge .

Area wise effectiveness of mean % and standard deviation of the knowledge scores of school children in pre-test and post-test reveals, there was increase in the mean knowledge score of the school children regarding WIFS after STP. Comparison of area wise mean and SD of the knowledge scores in the area of “general aspects of importance about WIFS shows that the pre-test mean knowledge score was 1.4 with SD ± 0.52 and mean percentage was 35% whereas post-test mean of knowledge score in this area was 3 with SD ± 0.8 and mean percentage was 70 %.

In the area of knowledge on anemia & benefits of WIFS pre-test mean knowledge score was 2.33 with SD ± 1.7 and mean percentage was 13.7 % whereas post-test mean knowledge score was 9.31 with SD ± 2.06 and mean percentage was 54.7%.

In the area of Knowledge about importance of intake of WIFS pre-test mean knowledge score was 2.35 with SD ± 1.32 and mean percentage was 26.10% whereas post-test mean knowledge score was 6.48 with SD ± 1.36 and mean percentage was 72%.

In the area of Knowledge about treatment & prevention pre-test mean knowledge score was 2 with SD ± 0.94 and mean percentage was 33.33% whereas post-test mean knowledge score was 4.99 with SD ± 0.88 and mean percentage was 83.16 %.

The overall findings revealed that the post-test knowledge-score (23.35 ± 4.65) and 64.80% was more that compared to the pre-test knowledge score (8.08 ± 4.48) and 26.08% Hence it indicates that the STP was effective in enhancing the knowledge of school children regarding WIFS.

It was found that the calculated t value was (26.43) the hypothesis H_01 -there will not be significant difference between pre-test knowledge and post-test knowledge scores of school children about WIFS was rejected. Hence the STP is proved to be effective.

significant association was found between gender, source of information with knowledge scores of school children significant at 0.05 level and there was no significant association between age in years, socio economic status , religion ,family monthly income ,family type with knowledge scores of school children regarding WIFS .Hence H_02 -there will not be significant association between knowledge scores and socio demographic variables was **rejected**.

CONCLUSIONS:

Following conclusions were drawn from the best finding of the study

1. After structured teaching programme there was significant difference in posttest knowledge scores, it shows that exposure to structured teaching programme would increase the knowledge.
2. School children showed interest to know and involve in the WIFS programme and anemia prevention.
3. The school children gained knowledge will aid in reducing the incidence of anemia.

RECOMMENDATIONS:

Based on the findings of the study, it is recommended that

- A study can be conducted to assess the knowledge, attitude and practice regarding WIFS programme.
- A comparative study can be done between govt. school children and private school children on knowledge regarding WIFS programme.
- A study may be conducted to evaluate the effectiveness of information booklet related to knowledge on WIFS.
- Similar study can be conducted on large population involving school children from various schools.
- Similar study can be conducted using virtual platforms or innovating teaching learning medium.
- A study can be conducted to assess the knowledge among health professionals related to WIFS.

CHAPTER -I

INTRODUCTION

“Health is the greatest gift, contentment the greatest wealth, faithfulness the best relationship”

-Buddha

1.1 Background of the study

School Adolescence and young adults are a period frequently marked by increased rights and privileges for an individual. they began to spend more time with their friends and less time with their parents. It involves changes in personality as well as in physical intellectual and social development. Adolescence is facing lot of challenges irrespective of their physical school development. Most of the school adolescent suffer from anaemia. Adolescence are the period of transition from childhood to adulthood. It is characterized by rapid physical, biological and hormonal changes resulting in psycho-social, behavioural and sexual maturity in an individual. It is the second growth spurt of life and both boys and girls undergo different experiences in this phase. During this period in life there is a significant increase in nutritional requirements, especially for iron.¹

An school adolescent is defined as an individual aged 10-19 years by the United Nations. The vast majority of the world's adolescents, 88%, live in developing countries. Anaemia is a major public health problem which is preventable. Globally, anaemia affects 1.62 billion which corresponds to 24.8% of the population. The population weekly iron folic acid supplementation for school adolescent girls and boys are the initiatives taken by United Nations International Children's Emergency Fund (UNICEF) to control school Adolescent Anaemia in the year 2000 in a phased manner. It includes the components of Weekly Iron and folic acid (100 mg elemental Iron and 500 µg folic acid round the year) + Biannual Deworming (Albendazole 400 mg every six months) + Nutrition Health Education²

Anaemia, a manifestation of under-nutrition and poor dietary intake of iron is a public health problem, not only among pregnant women, infants and young children but also among school adolescents. Anaemia in India primarily occurs due to iron deficiency and is the most widespread nutritional deficiency disorders in the country today. The prevalence of anaemia in girls (Hb<13%) is high as per the reports of NFHS-3 and the national nutritional monitoring bureau survey. according to NFHS 3 data, over 55 percent of both school adolescent boys and girls are anaemic. School adolescent girls in particular are more vulnerable to anaemia due to

rapid growth of the body and loss of blood during menstruation. according to NFHS-3 almost 56% of

school adolescent girls aged 15 -19 years suffer from some form of anaemia.²

Government of India launched the universalisation of WIFS programme all over the country in 2012 targeting 108 million adolescent girls and boys both. School going Adolescent Girls and Boys (6th to 12th classes) and school Adolescent Girls who are not in school are the target groups. The adolescent girls and boys in the schools are reached by teachers and out of school adolescents by the Anganwadi workers. Iron and folic acid tablets are given on a fixed day in a week for the 52 weeks in a year to be consumed under direct supervision. The present study aimed to assess the awareness of the weekly iron and folic acid supplementation in preventing anaemia in the school going adolescents, teachers and Anganwadi workers and to assess the implementation of the weekly iron and folic acid supplementation in government schools and Anganwadi centres. The Ministry of Health and Family Welfare, Government of India has launched the Weekly Iron and Folic Acid Supplementation (WIFS) Programme to reduce the prevalence and severity of nutritional anaemia in adolescent population (10-19 years).

Under the WIFS programme for school adolescents, IFA supplements are to be distributed free of cost on a weekly basis to the target groups in categories A and B. In addition to IFA supplements, Albendazole tablets for de-worming are to be administered twice a year to the same target groups.

- Administration of Weekly Iron and Folic Acid Supplementation (WIFS). Each IFA tablet containing 100mg elemental iron and 500µg folic acid for 52 weeks in a year.
- Screening of target groups for moderate/severe anaemia and referring these cases to an appropriate health facility.
- Biannual de-worming (Albendazole 400mg), six months apart, for control of worm Infestation.
- Information and counselling for improving dietary intake and for taking actions for Prevention of intestinal worm infestation.

The WIFS programme will be implemented in urban and rural areas and will target school adolescent boys and girls in school; and out-of-school adolescent girls (both married and unmarried). The WIFS strategy involves a “fixed day” approach for IFA distribution. It is recommended that Monday be the day on which all schools and Anganwadi Centres distribute weekly IFA tablets, with one additional designated day for missed out beneficiaries. To ensure high compliance supervised consumption of the IFA tablets is recommended. The programme also encourages and provides for the consumption of IFA tablets by the frontline workers such as AWW, ASHA, and teachers to enhance the value of IFA among adolescents and community members.³

1.2 NEED FOR THE STUDY

The effects of anaemia are many, which make the school adolescents girls prone to other diseases. Thus, proper supplementation and appropriate education to the school children will definitely help in reducing the morbidity and mortality among them. The world is home to 1.2 billion individuals aged 10–19 years and India has the largest national population of adolescents (243 million), followed by China (207 million), United States (44 million), Indonesia and Pakistan (both 41 million).⁴

The world's adolescent population is facing a series of serious nutritional challenges which are not only affecting their growth and development but also their livelihood as adults. Yet, school Adolescents remain largely neglected, difficult to measure and hard –to – reach population, in which the needs of adolescent girls in particular or often ignored. The commonest causes of anaemia in developing, countries, particularly among the most vulnerable people(adolescents),are nutritional disorders and infections. Since it is difficult to influence dietary behaviour due to social reasons and poverty, it is

proposed jointly by UNICEF/WHO that in countries where anaemia prevalence exceeds 40% in pregnant women, provision of universal iron supplements for school adolescent girls (at a minimum for those aged 12 to 16 years) and women of child bearing age is necessary. Iron-folic acid supplements are cost-effective and positive results are evident in a short period of a few months.⁵

Iron–folic acid supplementation of girls during school adolescence has been demonstrated to be effective in meeting the increased iron requirements and in building iron stores before the onset of pregnancy. Weekly iron folic acid is recommended for the prevention of anaemia as weekly iron–folic acid supplementation has fewer side effects and lower costs than daily supplementation and has therefore been proposed to be more effective than daily supplementation. As school adolescent anaemia is a critical public health problem in India, the Ministry of Health and Family Welfare, Government of India, has launched the Weekly Iron and Folic Acid Supplementation (WIFS) Program to reduce the prevalence and severity of nutritional anaemia in school adolescent population (10-19 years). The WIFS program will be implemented in urban and rural areas and will target school adolescent boys and girls in school; and out-of-school adolescent girls (both married and unmarried). The WIFS program is a convergence between Health, Education and Women and Child Departments. Under the WIFS program for adolescents, IFA supplements are to be distributed free of cost on a weekly basis to the target group and in addition to weekly IFA supplements, Albendazole tablets for de-worming are to be administered twice a year to the same target groups and Information and counselling for improving dietary intake and for taking actions for prevention of intestinal worm infestation.⁴

Anaemia is the most common due to malnutrition among school adolescents today. It is public health significance in our country Adolescents (17 – 19 years) constitute > 20 % of our population in India 50% suffer from iron deficiency anaemia. Both urban, rural, suffer from anaemia and being more in girls than boys, poor economic status faulty dietary 5 pattern, lack of awareness education, urbanization, prevalence of malaria, hookworm, other infestation, repeated bacterial infection also influence the incidence, nature of anaemia growing children in adolescents. In India prevalence of anaemia among school adolescents' girls were 56% and this amount to an average 64 million girls at any point.²¹

A study was conducted to assess the effectiveness of School-Based Iron and Folic Acid Supplementation among school Adolescent Girls by two school-based weekly iron and folic acid (IFA) supplementation regimes (5-month supplementation vs. 8-month supplementation) in girls 10 to 18 years old attending school in Manica province. Haemoglobin concentration in study group 8 was significantly higher and the prevalence of anaemia was lower than in study group 5. the study concluded that school-based weekly IFA supplementation is a feasible and effective intervention to prevent seasonal drops in haemoglobin concentration and increases in anaemia prevalence.¹⁵

The various studies done in past on WIFS have focused more on comparing the effectiveness of daily Vs. weekly dose and cost effectiveness with very little data available on compliance to treatment, availability, adequacy of IFA and albendazole tablets and effectiveness of health education intervention in bringing behaviour change among target population.⁵

Hence as a researcher felt to reduce the prevalence and severity of anaemia in school adolescent population by effectively providing education about WIFS programme for school adolescents, IFA supplements are to be distributed free of cost on a weekly basis to the target groups. In addition to IFA supplements, Albendazole 500mg tablets for de-worming are to be administered twice a year to the same target group

1.3 STATEMENT OF THE PROBLEM:

“A STUDY TO EVALUATE THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING WEEKLY IRON FOLIC ACID SUPPLEMENTATION PROGRAMME {WIFS} AMONG SCHOOL CHILDREN STUDYING IN SELECTED GOVT. SCHOOL OF TIRUPATHI.”

1.4. OBJECTIVES OF STUDY:

- To assess the level of knowledge regarding on WIFS programme by pre -test.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding WIFS programme among school children by post-test.
- To find out the association between post -test knowledge regarding WIFS programme among school children with their selected socio-demographic variables.

1.5 OPERATIONAL DEFINITIONS:

1. **Evaluate** : To judge or assess weekly iron and folic acid supplementation programme
2. **Effectiveness**: effectiveness refers to change produced by structured teaching program on WIFS programme. It influences in improving the knowledge of school children regarding WIFS programme.
3. **Structured teaching programme**: It refers to systematically developed instructional and teaching plan that will give to school children to provide information regarding WIFS programme.
4. **Knowledge**: In this study knowledge refers to the response of the school children regarding WIFS programme.
5. **WIFS programme** : In this WIFS means Weekly Iron and Folic Acid Supplementation programme launched by govt of India in the year of 2012 in view of distribution of iron & folic acid tablets weekly , including Tab. Albendazole - 400mg in every 6 months.
6. **Govt. School children**: children aged 13-14 years studying in govt. school which follows state government rules.

1.6. HYPOTHESIS:

- **H01**: There will be no significant difference between pre -test and post -test knowledge of school children regarding WIFS programme.
- **H02** : There will be no significant association between the post -test knowledge of school children regarding WIFS programme with their selected socio demographic variables.

1.7. ASSUMPTIONS:

- The school children will have some knowledge regarding WIFS programme
- Educational intervention will enhance the knowledge of school children regarding WIFS programme.
- The school children will cooperate with investigator in implementation of educational intervention

1.8. LIMITATIONS:

- A study is limited to 100 school children in selected govt. high school Tirupathi.
- Study is limited to 8-9th class children in govt. high school

1.9. DELIMITATIONS:

- The study is delimited to selected govt. school in Tirupathi.

CHAPTER -II REVIEW OF LITERATURE

2.1 Review of literature :

The term review of literature refers to the activities which involved in identifying information, which helps to focus on a particular problem and lays a foundation upon with the new knowledge. A literature review is one of the major components of the research process. The purpose of review literature is to obtain scientific information which is relevant to the study.

Literature review provides basis for future investigations justifies the need for study and relates the findings from one study to another with a hope to establish a comprehensive study of scientific knowledge profession discipline from which valid and pertinent theories may be developed Reviewing the literature can also help to identify the relevant conceptual frameworks or appropriate research methods.

- Polit (2003).

This chapter presents review of literature related to the present study. A review of related literature and theory on a topic has become a standard and virtually an essential activity of scientific research projects “Literature review” is a critical summary of research on a topic of interest often prepared to put a research problem in context or as the basic for an implementation project.¹⁸

This chapter presents a review of studies done, by earlier investigators, which helps to study the problem in depth. The sources to obtain more information on the selected topic were internet search, text books, published journals, and editorials, conference proceedings published and unpublished thesis. Review of literature written following headings .

Review of literature divided into two sections :

1. Prevalence of iron deficiency anaemia and knowledge on WIFS .
2. Effectiveness of structured teaching programme on knowledge regarding WIFS

Section -I

1. Prevalence of iron deficiency anaemia and knowledge on WIFS

A study on uptake and determinants of WEEKLY IRON AND FOLIC ACID SUPPLEMENTATION prophylaxis adolescent girls at Bhuvanewar in India a semi structured questionnaire was used and results showed that WIFS uptake was 68.7% key factors influencing were child's level of education, availability of IFA tablets and awareness among adolescents. Conclude with relabel supply of IFA tablets was showed to significantly improve WIFS participation ⁶

A study on knowledge and adherence to weekly iron folic acid supplementation among adolescent girls of selected govt schools at Nepal. Study used 324 samples in Kathmandu Nepal

.data was collected by self-administer questionnaires study reveals that of the respondents (that is 47.8% had adequate adherence less than of the respondents (44.1% had adequate level of knowledge on anaemia. There was a statistically significant association between adherence and knowledge to weekly iron and folic acid supplementation with demographic variables like fathers' education status and mothers' occupation etc. thus, more awareness programme on anaemia and importance of weekly iron and folic acid supplementation programme are essential ⁷

Study on ignorance of the weekly iron and folic acid scheme among adolescents . total 3213 adolescents' boys and girls are participated study results showed that knowledge of WIFS was among girls (29.3%) as compared to boys (14.1%) study concluded that adolescence who got iron and albendazole tablets and adequate consumption of iron tablets (>4) were associated with higher knowledge of weekly iron and folic acid supplementation ⁸

A study on weekly iron and folic acid supplementation in the government school and Anganwadi centres, Hyderabad Telangana total 313 students ,21 teachers,10 Anganwadi workers are participated in

the study. Among school students, only 15% had awareness of anaemia, girls had better knowledge than boys ($p < 0.05$) the benefits of iron and folic acid tablets were known to 17% students AND 67% teachers here concluded that need of regular orientation to the teachers and Anganwadi workers and nutrition education meetings for behaviour change communication to the parents.⁹

A study conducted on factors influencing weekly iron and folic acid supplementation programme among school children at Pondicherry in Tamilnadu India total 240 school children

9th & 10th standard were participated results showed that 47.2% were consuming IFA tablets regularly stomach pain, nausea and vomiting and disliking tablets were predominant causes for IFA tablet users concluded that creating awareness regarding importance of IFA programme and careful programme is required regularly.¹⁰

In June 2000, Adolescent Anaemia Control Programme was initiated as a pilot programme in Vadodara district of Gujarat covering over 69000 girls in over 426 schools. Programme strategy was to provide once weekly fixed day (Wednesday) supervised iron folic acid (IFA) supplements to all adolescent girls in Grade 8-12. This study was undertaken to institutionalize once a week IFA supplementation in the schools for adolescent girls Baseline survey for three areas of Vadodara district, tribal, rural and urban from 10 schools each was conducted to collect data for anaemia prevalence. After approximately 17 months of intervention, impact study was conducted in the same 30 schools in November 2001 to obtain levels of anaemia and some of the paired data from the students who were part of the baseline study. Impact evaluation showed reduction in anaemia prevalence by 21.5 per cent that is, from 74.7 per cent to 53.2 per cent. Further improvement in HB was recorded among 80 per cent girls. Pre- and post-intervention also showed improvement in serum ferritin value. Supervised, once a week IFA supplementation to adolescent girls through institutions specially, schools was found to be an effective intervention to reduce anaemia and was scalable within the system.¹¹

An intervention study was conducted among 104 unmarried adolescent girls with an objective to study the effect of change in dietary behaviours and iron supplementation for reduction of Iron deficiency anaemia. The relevant information was collected with anthropometric measurements and haemoglobin estimation. Socioeconomic status was collected using pretested questionnaires. The girls were administered iron folate and calcium tablets on alternate days for 3 months. Results showed there was an increment of 19.55 g/L haemoglobin in the group of girls receiving IFA supplements whereas haemoglobin decreased slightly in girls in the control group. A significant weight gain of 2.66 kg was seen in the intervention group, whereas girls in the control group showed little weight gain.¹²

A study was conducted in urban areas of Vadodara, India to investigate the effect of IFA supplements on haemoglobin, hunger and growth in adolescent girls 10–18 y of age. Results show that there was a high demand for IFA supplements and >90% of the girls consumed 85 out of 90 tablets provided. There was an increment of 17.3 g/L haemoglobin in the group of girls receiving IFA supplements, whereas haemoglobin decreased slightly in girls in the control group. The growth increment was greater in the 10- to 14-y-old age group than in the 15- to 18-y-old group, as expected, due to rapid growth during the adolescent spurt. IFA supplementation is recommended for growth promotion among adolescents who are underweight.¹³

Study on assessment of the knowledge of “weekly iron folic supplementation” program among adolescent girls in Jamnagar district, Gujarat was conducted by Vikram Singh Agency: WIFS, Adolescent Girls, SABLA Taaleem Centre, Iron Tablet, and Folic Acid. an analytical study. The study was carried out from February, 2014 to April, 2014 in Jamnagar. A total of 200 adolescent girls (aged

between 11-19 years) both school going and out of school were interviewed from 10 Taluka. Out of 172 girls, 83% knew the right way of taking the tablet and 21% said that there were no proper instructions given and no feedback taken (36%).¹⁴

A Systematic review on evidence-based adolescent nutrition interventions was conducted by Lassi ZS, Moin A, Das JK, Salam RA, Bhutta ZA . A comprehensive review all published systematic reviews (through October 2016) on adolescents (10 19 years) and women of reproductive age, including pregnant women, which targeted interventions related to nutrition. Interventions on micronutrient supplementation ,food/protein energy supplementation, nutrition education for pregnant adolescents, obesity prevention and management, and management of gestational diabetes were included. They identified a total of 35 systematic reviews, of which only five were conducted on adolescents, and 107 primary studies on adolescents. The review suggests that iron, IFA, zinc, and multiple micronutrient supplementations in adolescents can significantly improve serum haemoglobin concentration.¹⁵

A study on Iron deficiency anaemia (IDA) is a major health issue in those aged less than 18 years old with high impact on their development Systematic review and met analysis of these data would reveal a more realistic view of the prevalence of iron deficiency (ID) rates, the heterogenic index of the studies was determined using the Cochran's test (Q) and I². Then, based on the heterogenetic results, a random effects model for estimate pooled prevalence of IDA was used. Meta-regression was applied to determine heterogeneity suspected factors. The prevalence of IDA was 7.9% (95% CI: 4.1-11.7) in males and 8.5% (95% CI: 6.1- 10.8) among females aged under than 18 years.¹⁶

A study conducted on subjects – 150, 700 school going and non-school going adolescent (10 – 19 years) girls, Prevalence of anaemia – 92.6% in school going girls and 73.3% in non-school going girls Treatment - weekly iron and folic acid supplements (100 mg elemental iron and 500µg folic acid) to school going girls (supervised) and non-school going girls (non supervised), Deworming tablets (albendazole, 400 mg) at the beginning and after 6 months. Impact – Hb levels increased from 105 g / L to 117 g / L in school going girls and 113 g / L to 120 g / L in non-school going girls in 6 months. Anaemia prevalence significantly decreased from 92.6% to 58.0% in school going girls and 73.3% to 39% in non-school going girls. Conclusion – Weekly iron–folic acid supplementation.¹⁷

The study was conducted in the field practice areas of Department of Community Medicine, IGMCI, and Shimla. A total of 421 girls were studied. They were clinically examined & predesigned & pre tested proforma as were filled up. Haemoglobin assessment was done using Filter paper Cyan Metha haemoglobin technique. Out of the sample of 421 girls in our study a total of 235 (55.34%) girls were found to be anaemic (Hb less than 12 g/dl). Mean haemoglobin in the study subjects was observed to be 11.46 and median value found to be 11.6gm/dl. From the literature searches, documented in the review of this thesis, the prevalence of anaemia in adolescent girls from India varied from 46 to 88%, and mean haemoglobin values varied from 7.6 to 12.7g/dl. So, it was concluded that anaemia is prevalent in girls around menarche and Iron & folic acid supplementation is one of the most important nutritional interventions for adolescent girls.¹⁸

A cross-sectional study was conducted in a setting of urban slums of Bellary city; Karnataka state Iron deficiency anaemia is the commonest medical disorder and is a problem of serious public health condition with epidemic proportions especially among poor adolescent girls (65-90%). Objectives were to determine the prevalence and determinants of anaemia among adolescent girls living in urban slums A total of four urban slums were included in the study. Within each selected urban slum 100 adolescent girls were studied. The relevant information was collected with anthropometric measurements and

haemoglobin estimation. The overall prevalence of any anaemia was 82.5%, the prevalence of mild, moderate and severe anaemia was 37.7%, 36.2% and 8.5% respectively. Socio-demographic factors like religion, education of the girl, occupation of the father, menstrual factors like regular periods and excessive bleeding and nutritional factors like low intake of meat, vegetables and body mass index showed significant association with anaemia.¹⁹

A study on the Adolescent Girls' Anaemia Control Programme: a decade of programming experience to break the inter-generational cycle of malnutrition in India. They reviewed all articles, programme and project reports, and baseline and end line assessments published between 1995 and 2012 regarding the control of anaemia through intermittent iron and folic acid supplementation in India and the subjects were Adolescent girls. The results showed that by the end of 2011, the programme was being rolled out in thirteen states and was reaching 27.6 million adolescent girls of whom 16.3 million were school-going girls and 11.3 million were out-of-school girls. Building on the critical elements of and lessons learned from the programme, the Government of India launched in 2012 the national Weekly Iron and Folic Acid Supplementation (WIFS) programme to universalize the benefits of anaemia control to the overall population of Indian adolescents.²⁰

A free weekly iron-folic acid supplementation and regular deworming program is associated with improved haemoglobin and iron status indicators in Vietnamese women by Distribution of WIFS and deworming were integrated with routine health services and made available to 52,000 women. Demographic data and blood and stool samples were collected in baseline. A stratified multi-stage cluster sampling design was used for the baseline survey. The results of the study was that the mean Hb increased by 9.6 g/l during the study period.²¹

A descriptive study on anaemia is common among people living in low- and middle-income countries, and alleviation of the global burden of anaemia is an essential global health target over the next decade. Estimates have attributed about half the cases of anaemia worldwide to iron deficiency; a range of other causes probably make a similar 15 overall contribution. Individuals living in low-income settings experience a simultaneous high burden of infection with inflammation and iron deficiency. At least in children, iron supplementation exacerbates the risk of infection in both malaria endemic and non-endemic low-income countries, whereas iron deficiency is protective against clinical and severe malaria.²²

Section -II

2. Effectiveness of structured teaching programme on knowledge regarding WIFS

A study conducted on evaluated the effectiveness of structured teaching programme on knowledge regarding weekly iron and folic acid programme among adolescence Karnataka NTR

.the quasi-experimental study design was adopted for study. the 60 sample were selected based on the randomisation. the result shown that in the pretest majority of the adolescent school children (68.3%) having poor knowledge on weekly iron and folic acid supplementation programme but in post-test majority of the adolescent school children having average knowledge on weekly iron and folic acid supplementation programme. The calculated t values 11.17 is greater than table value ($t(59)$)=1.96. there is a significant association between the gain knowledge score of adolescents WIFS programme among adolescents with selected demographic variable like age ($\chi^2(2) = 8.28$) sex ($\chi^2(1) = 8.13$) education of father ($\chi^2(1) = 4.36$) concluded it can be there is significance improvement in the knowledge of adolescence regarding weekly iron folic acid supplementation programme after the administration of structure teaching programme.²³

A study on evaluation weekly iron and folic acid supplementation programme for adolescent in rural Pondicherry in India total 345 sample were participated among them (100)boys and 235 girls' majority(88.5%) of the students reported to consume four tablets of iron and folic acid in post a week's significantly girls had a better knowledge about symptoms of anaemia and iron rich diet then boys' major positive factor for the programme reported by the structured .²⁴

A study was conducted to assess the effectiveness of School-Based Iron and Folic Acid Supplementation among Adolescent Girls by two school-based weekly iron and folic acid (IFA) supplementation regimes (5-month supplementation vs. 8-month supplementation) in girls 10 to 18 years old attending school in Manica province. Haemoglobin concentration in study group 8 was significantly higher and the prevalence of anaemia was lower than in study group 5.the study concluded that school-based weekly IFA supplementation is a feasible and effective intervention to prevent seasonal drops in haemoglobin concentration and increases in anaemia prevalence.²⁵

A study to assess the Efficacy of twice-weekly multiple micronutrient supplementation for improving the haemoglobin and micronutrient status of anaemic adolescent schoolgirls in Bangladesh Anaemic girls (haemoglobin< 12.0 g/dL) girls (n = 197) aged 14–18 y from rural schools in Dhaka District was selected by randomized double-blind trial and received twice-weekly supplements of iron and folic acid (IFA group) or multiple micronutrients for 12 wk. At the end of the study, although both groups benefited significantly from supplementation, mean changes in haemoglobin and serum ferritin concentrations were not significantly different between groups. Compared with the IFA group, girls in the MMN group had significantly greater increases in mean serum vitamin A, plasma vitamin C, red blood cell folic acid, and riboflavin concentrations.²⁶

A study on anaemia is a major public health problem especially in adolescent age group because of its intergenerational impact. The Ministry of Health and Family Welfare, India launched the weekly iron and folic acid supplementation programme for adolescent girls and boys. The objectives of the study were to study the awareness of the weekly iron and folic acid supplementation in preventing anaemia in the study subjects; to assess the implementation of the weekly iron and folic acid supplementation in government schools and Anganwadi centres. Methods: A cross-sectional study was carried out in the 4 government schools and 11 Anganwadi centres of the urban field practising area of a tertiary health care centre, Osmania Medical College, Hyderabad. All the students who were present at the time of study, the teachers and Anganwadi workers, who gave consent were included. The study was carried out for a period of 3 months (August to October, 2018) using a pretested schedule. Results: A total of 313 students, 21 teachers and 10 Anganwadi workers had participated in the study. Among school students, only 15% had awareness of anaemia. Girls had better knowledge than boys ($p < 0.05$). The benefits of iron folic acid tablets were known to 17% students and 67% teachers. most side effects were nausea, vomiting and stomach pain . irregular supply of tablets and poor maintenance of records was seen

. conclusion. the supply and distribution of tablets was found to be not in accordance with the guidelines of the programme. there is need of regular orientation to the teachers and Anganwadi workers and nutritional education meetings for behaviour change communication to the patients.²⁷

An experimental study was conducted to assess the efficacy of two different iron supplement administered either on a weekly basis or during menstruation, among post menarche female adolescent students in kupang. The study revealed that weekly supplementation of iron tablets continued for 16 weeks contributed a higher improvement to haemoglobin concentration compared with supplementing iron tablets for four consecutive days during menstruation for four menstruation cycles. This suggests

that weekly iron supplement is preferable.²⁸

A study to evaluate the efficacy of weekly iron supplementation in the treatment of iron deficiency anaemia. 267 school children, 6-14 years of age group were randomized into two treatment groups. One group (144) received 200 mg iron sulphate alone, with 40 mg of elemental iron, while the other group (123) received the same iron supplementation dose plus 10,000 IU of vitamin A. Finally, anaemia prevalence was reduced from 48.4% to 17.7% (p) in the group receiving iron supplementation alone and 58.1% to 14.3%.²⁹

A true experimental study to compare the effectiveness of honey mixed gooseberry juice with honey mixed ripen guava juice on the level of haemoglobin among anaemic adolescent girls studying in selected schools at Dharmapuri dist., Tamil Nadu. 30 adolescent girls were selected; sample were divided into 3 groups by simple random sampling. The mean Hb was found to be 9.83 gms. Group I was given honey mixed 30 ml of gooseberry juice. Group II was given 30 ml of honey mixed ripen guava juice. The post-test Hb level was monitored for the samples after 45 days. The mean Hb increased to 11.4 grams. Paired t-test had been applied to compare the pre and post test haemoglobin levels and to decide whether it had been statistically significant.³⁰

A study was conducted to Evaluate the effectiveness of Weekly Iron and Folic Acid Supplementation program for adolescents in rural Pondicherry, India mixed-methods study design, where quantitative (survey of students) and qualitative (key informant interviews of teacher in charge of WIFS, health assistants, and auxiliary nurse midwife) methods were used. The results showed that Out of the 345 participants of quantitative survey, there were 110 boys and 235 girls. Majority (85.8%) of the students reported to consume four tablets of Iron folic acid (IFA) in the past 4 weeks. The study concluded that there was good compliance to IFA tablet consumption.³¹

2.2 CONCEPTUAL FRAME WORK

Conceptual Frame Work is a theoretical approach to the study of problems that are scientifically based and emphasizes the selection, arrangement and classification of its concepts. A conceptual frame work helps to explain the relationship between concepts selected from several theories, from previous research results or from the researchers own experience. Conceptualization refers to the process of developing and refining abstract. A conceptual model provides logical thinking, for systematic observation and interpreting the observed data. The model also gives direction for relevant questions on phenomena and point out solutions to practical problem

The conceptual Frame work is based on **Ludwig Von Bertalanffy's general system Theory**. According to the General system model, a system is a set of interacting elements, all contributing to the overall goal of system. This theory includes three important components; Input, Throughput and Output. This study aims at developing and evaluating a structured teaching programmed for school children regarding **WIFS**.

The process of structured teaching programmed includes preparatory phase as the input, the implementation phase as the throughput, and evaluation phase as the output.

INPUT:

According to the author 'input' refers to energy, matter and information.

In the present study input it includes the preparation of questionnaire on personal factors

i.e. the socio-demographic factors of the subjects under study that can have influence on their knowledge related to WIFS of school children.

THROUGHPUT:

According to author 'throughput' refers to the process by which the system processes input and release an output.

In the present study, throughput is considered as the processing of the input. It is conceptualized as the steps of implementation processing of administration of structured questionnaire for pre-test and into assess the knowledge regarding WIFS among school children. After seven days, the implementation of structured teaching programme and administration of Post-test with same structured questionnaire to assess the knowledge of school children regarding WIFS.

OUTPUT:

According to the theorist output refers to energy, matter and information that leave a system. It includes the outcome of the structured teaching programme and post-test knowledge level of school children can be categories into excellent, good, average, poor and very poor.

FEEDBACK:

According to the author output refers to output that is returned to the system that allows it to monitor itself over time in attempt to come closer to the steady state known as equilibrium.

The present study feedback is considered to be the knowledge regarding WIFS among school children , after intervention which may vary from excellent to very poor. The feedback may be positive or negative. It is considered that the feedback can be obtained through the comparison of difference between pre and post-test of knowledge regarding WIFS among school children which depicting the effectiveness of the structured teaching programme.

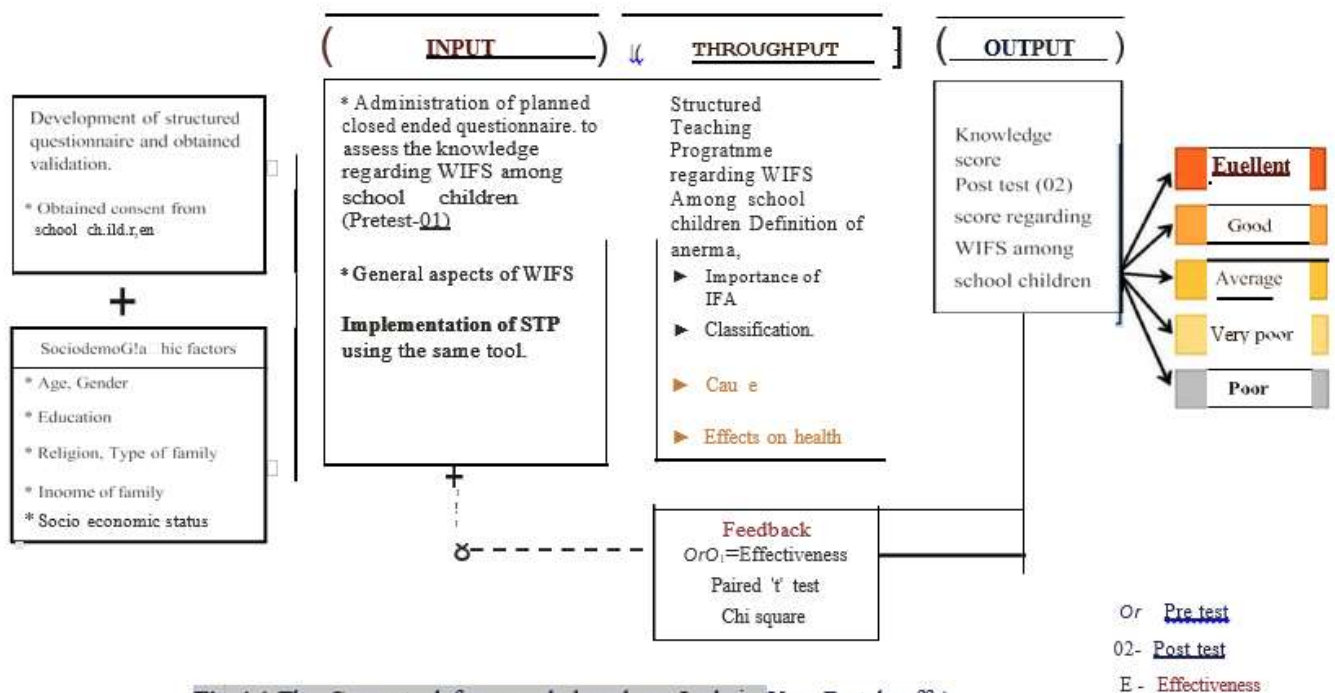


Fig.1.1 The Conceptual framework based on Ludwig Von Bertalanffy's, General System

CHAPTER -III METHODOLOGY

Research methodology deals with the method of investigation adapted by the investigator. This chapter deals with the steps adopted by the present study it includes research approach, Research design, Setting, Population, Sample, Sample size, Sample technique, Criteria for sample selection Data collection tool,

Pilot study, Data collection procedure for data collection and plan for Data analysis.

Methodology occupies a key position in research documentation. It may be understood as a science of studying how research is done. Research methodology involves the systematic proceeding by which the researcher starts from the time of initial identification of the problem to its final conclusion. Research methodology is the way to systematically solve the research problem. It may be understood as a science studying how research is done scientifically.

-C.M. C. Chaudhary 1991.

The present study was aimed to assess the knowledge levels and find the effectiveness of structured teaching programme regarding WIFS among school children

3.1 RESEARCH APPROACH:

The research approach is broad based procedure of studying problem and drawing conclusions. the research approach refers to the general set of orderly disciplined procedure used to acquire dependable and useful information.

- Kothari, 2006

Research approach for the present study is "Quantitative research approach". It is an appropriate method to assess the effectiveness of structured teaching programme on knowledge regarding weekly iron and folic acid supplementation programme among school children studying in selected govt. school of Tirupati.

3.2 RESEARCH DESIGN:

The research design is concerned with the overall blueprint for conducting the study.

-Nancy Burns, 1993.

In this study pre-experimental one group pretest post-test design was used to assess the knowledge regarding WIFS.

01-x-02

01= Pretest for the assessment of knowledge regarding WIFS among school children

X = Implementation of structured teaching programme about WIFS among school children

02 = Post test to assess the effectiveness of structured teaching programme regarding WIFS among school children.

E = Effectiveness of structured teaching programme.

3.3.SETTING FOR THE STUDY:

The selection of an appropriate setting for conducting a study is crucial to its successful completion.

-Nancy Burns, 1993.

The type of setting selected depends on the research problem and purpose. Setting for the present study is Selected govt. School of Tirupati. [Kodanda Ramaswamy high school.]

3.4.POPULATION:

A population is the entire set of individuals or objects that have same characteristics.

- Polit and Hungler, 1989.

Population for the present study is school children in selected govt. school of Tirupathi.

3.5 SAMPLE:

Sample is a sub group of the target population that the researcher plans to study for generalizing about the target population.

- Creswell, 2012.

Sample for the present study is Students studying 8th and 9th class studying in selected govt. school of Tirupathi.

3.6 SAMPLE SIZE:

Sample size refers to the number of individuals or items that are included in a study's sample. It is a crucial aspect of research design as it directly impacts the accuracy and reliability of the study's findings. An appropriate sample size is essential to ensure that the results obtained from the sample can be reasonably generalized to the entire population from which the sample was drawn. The sample size was determined using the single proportion formula:

$$n = (Z^2 \cdot p(1 - p)) / d^2 \text{ where:}$$

n = the required minimum sample size

Z = the standard normal deviate at the desired confidence level (1.96 for a 95% confidence level) p = the proportion of WIFS among school children (assumed to be 6.97% or 0.0697 in decimal form)

d = the desired degree of accuracy (taken as 0.05 or 5% in decimal form)

The formula allows to calculate the minimum sample size needed to estimate the proportion of WIFS among school children with a given level of confidence and accuracy.

Let's break down the calculation step-by-step based on the provided values: $n = (1.962^2 \cdot 0.0697 (1 - 0.0697)) / (0.052)$

$$n = (3.8416 \cdot 0.0697 \cdot 0.9303) / 0.0025$$

$$n = 0.24909 / 0.0025$$

$$n = 99.636$$

It is usually rounded up to the nearest whole number to ensure an adequate sample size for the study. Therefore, the required minimum sample size would be 100.

3.7. SAMPLE AND SAMPLE SIZE :

Sample consist of 100 school children

3.8 .SAMPLING TECHNIQUE:

Sampling as the process of selecting representative elements from a given population that will form the sample.

-**KothariandGarg,2014.** simple random sampling technique was used to select 100 school children with the help of lottery method.

3.9 . CRITERIA FOR SAMPLE SELECTION:

- **Inclusion criteria:** The study includes, Who are,
- studying in selected govt-school
- available at the time of data collection.
- willing to participate in the study.

- **exclusion criteria:**

The study excludes Who are,

- not available at the time of data collection.
- not interested in the study.
- studying other than selected govt. school.

3.10. DESCRIPTION OF VARIABLES:

Variable is an attribute of a person or object that varies, that is, takes on different values.

Polit, 2001.

Independent Variable:

According to Polit (2001) the variable that is believed to cause of influence the dependent variable.

The independent variable in the study was the structured teaching programme on weekly iron folic supplementation programme.

Dependent Variable:

According to Polit (2001) the variable that is hypothesized to depend on or be caused by the independent variable is dependent variable.

The dependent variable in the present study was the knowledge of the school children regarding weekly iron folic acid supplementation programme.

METHOD OF DATA COLLECTION:

The method of data collection is the method of gathering information from respondents in a standardized fashion.

In the present study, the investigator intended to collect the data by using the structured questionnaire. The investigator uses a structured questionnaire which consists of 30 questions to assess the effectiveness of structured teaching programme on knowledge regarding weekly iron folic acid supplementation programme among school children in selected govt. schools of Tirupati. Sample size of 100 was selected by simple random sampling technique. Data was collected through self administered Questionnaire and structured Teaching Programme was carried out for all students for about 45 minutes, for pre-test and post test data collection 45 minutes time was allotted .

3.11. DEVELOPMENT OF THE TOOL :

A structured questionnaire was prepared by investigator with aim to assess knowledge of school children regarding WIFS.

The blue print was prepared for making sub -part in topic . the tool was prepared with guidance of literature the tool was sent for content validity to 10 experts in the field of community health nursing and community medicine. The suggestion of experts was considered in preparation of the final tool.

3.12 DESCRIPTION OF THE TOOL :

The instrument was divided into following parts,

PART-1: It consists of 7 items regarding the socio-demographic variables of school children.

PART-2: It includes total 30 items regarding knowledge about WIFS programme in 30 items 5 items about general information, 5 items about causes and deficiency of IFA anaemia,15 items about importance of intake of WIFS ,5 items about treatment & prevention among school children

These items were closed ended multiple choice question. Each correct response has been scored with one mark. Total score was 30.

Table- 1

The knowledge level of respondent was classified into 5 categories as follows.

GRADE	IN PERCENTAGE	SCORE
Excellent	81-100%	24-30
Good	61-80%	17-23

Average	41-60%	11-16
Poor	21-40%	5-10
Very poor	0-20%	0-4

3.13 CONTENT VALIDITY OF TOOL:

The structured questionnaire was validated by experts from Community health nursing and Community medicine and the tool was modified according to the suggestion of the experts.

DEVELOPMENT OF STRUCTURED TEACHING PROGRAMME:

The structured teaching programme was developed by the researcher with the help of current literature consists of general information ,causes and deficiency of IFA anaemia, importance to intake of WIFS, treatment & prevention.

The structured teaching programme was aimed to improve the knowledge on WIFS among school children.

3.14.RELIABILITY OF TOOL:

Reliability of the tool was established by using test-retest method.10 children were selected from Malwaji govt high school and tool was administered.

Karl Pearson's correlation coefficient test was used, found to be significant.

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n\sum x^2 - (\sum x)^2] [n\sum y^2 - (\sum y)^2]}}$$

The reliability of the whole test was then estimated using

$$r = \frac{2r}{1 + r}$$

The obtained value of 'r = 0.933, indicating that the tool was highly reliable for the final study.

3.15. PILOT STUDY:

The permission was obtained from concerned authorities. Pilot study was conducted from 10-03-2026 to 17-03-2026 to find the feasibility and practicability of the study design. 10 students were selected by using simple random technique. Duration of the study was one week. on the first day pre-test was conducted with the help of structured questionnaire the same day STP was intervened after the seven days of pre-test, the post-test was conducted with the same structured questionnaire to assess the effectiveness of structured teaching programme. The result of study showed that the tool was feasible and practicable.

3.16 DATA COLLECTION PROCEDURE

Data collection was carried out in two phases with the help of self-administered questionnaire.

The investigator obtained prior permission from the school Headmaster and consent from the school children as follows.

- **First phase:** A pre-test was conducted among the specified group of 100 students by using structured closed ended questionnaire and on same day structured teaching programme was intervened on WIFS.
- Data was collected through self administered questionnaire and when school children raised doubts researcher has clarified it .
- **Second phase:** A post-test was conducted after seven days of structured teaching programme to evaluate the effectiveness.

The period of data collection was 7 days i.e.7 -04-2026 to13 -04-2026.

3.17 PLAN FOR DATA ANALYSIS:

The data were analyzed by using both the Descriptive and Inferential statistics.

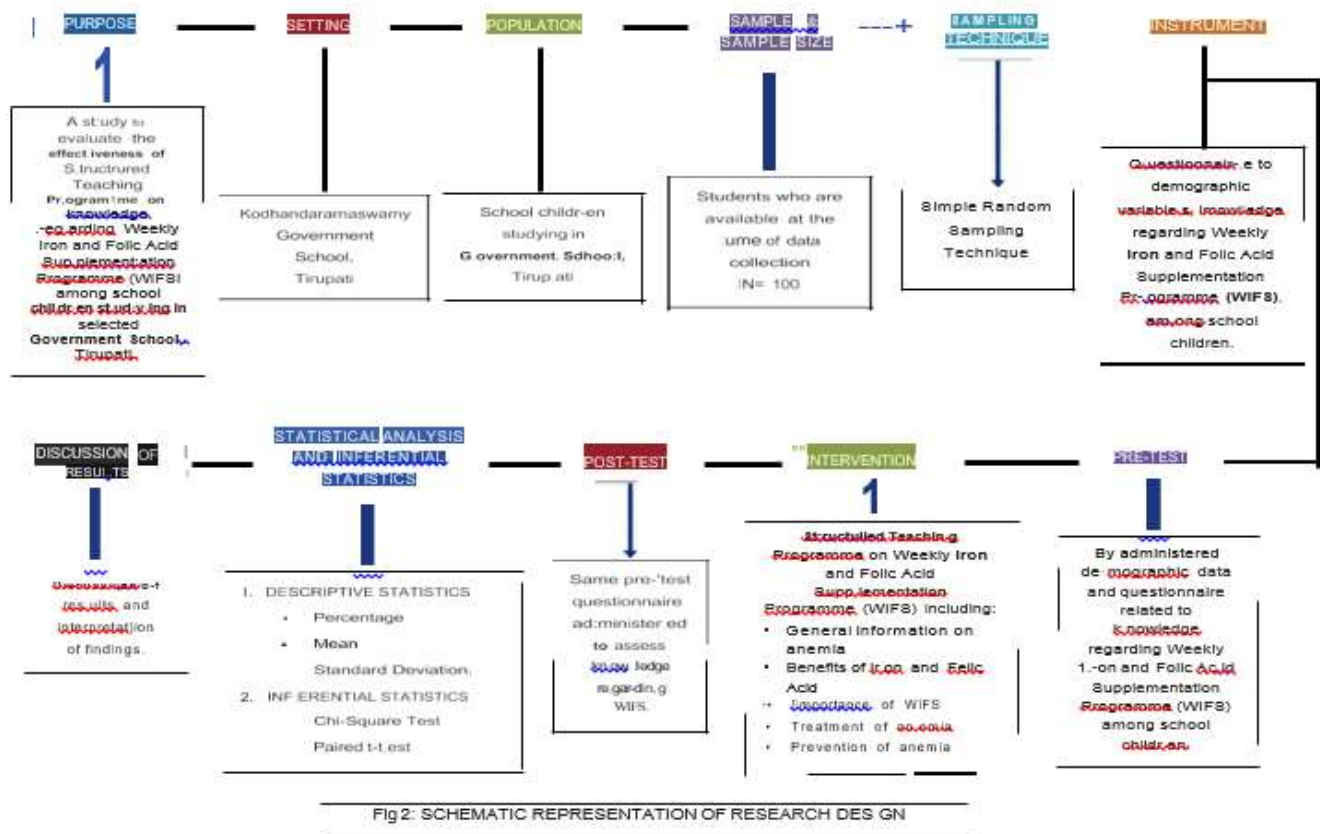
- Demographic data were analysed by using frequency and percentage distribution.
- Mean, Standard deviation, and paired 't' test will be used to find the difference between pre-test and post-test assessment scores of school children regarding knowledge on WIFS
- Chi-square test was used to find association between selected socio demographic variables of children with their post-test knowledge scores.

3.18 ETHICAL CONSIDERATION:

- The permission was obtained from the nursing college research committee.
- The permission was obtained from the govt. school headmaster
- Consent was obtained from all the participants.

3.19 SUMMARY:

This chapter describes the general pattern of organizing the procedure of gathering valid and reliable data for the problem under the investigation. A pre-experimental one group pretest post-test design was used to assess the knowledge of school children . The study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding WIFS among school children of govt school .sample were selected by simple random sampling technique and the tool was prepared on the basis of review of literature. Pilot study was conducted to find out the feasibility of the study. Reliability of the tool was tested by karl Pearsons correlation coefficient method and validity was ensured in consultation with experts. The collected data from the respondents has been analysed using descriptive and inferential statistics and presented in the form of tables, graphs and diagrams



CHAPTER -IV

DATA ANALYSIS AND INTERPRETATION

Analysis as the process of categorizing, ordering, manipulating and summarizing of data to obtain answers to research question.

-Bhaskar (2018) The purpose of analysing is to reduce the data into interpretable form so that relations of research problem can be studied and tested. Interpretation is the process of making sense of the results and of examining their implications.

Analysis and interpretation of data for the present study is based on data collected from 100 school children's in kodanda rama swamy high school.

The data collected were tabulated, analyzed and interpreted by using descriptive and inferential statistics. The data is analyzed on the basis of the objectives and hypothesis of the study.

ORGANISATION OF FINDINGS:

The collected information was organized and presented in 4 sections as follows:

Section I: Description of socio-demographic characteristics of school children. **Section-II:** Assessment of knowledge levels regarding WIFS among school children. **Section III:** Evaluation of the effectiveness of the STP on knowledge regarding WIFS among school children.

PART-A : Area wise and total knowledge mean, S.D , mean percentage in pre- test and post test.

PART-B : Significant difference between pre and post-test knowledge score of school children regarding WIFS.

Section IV: Association between posttest knowledge score of school children with their selected socio-

demographic variables.

SECTION I: SOCIODEMOGRAPHIC DATA

Table-2: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO AGE GROUP.

N=100

SI.NO	AGE IN YEARS	FREQUENCY	PERCENTAGE
1.	11-12	90	90%
2.	12-13	10	10%
3.	above 13 years	0	0%
	Total	100	100%

Above table depicts that out of 100 school children , 90 (90%) of school children were from the age group of 11-12 years, followed by 10 (10%) belongs to the age group of 12-13 years, No children in the age group of above 13 years .

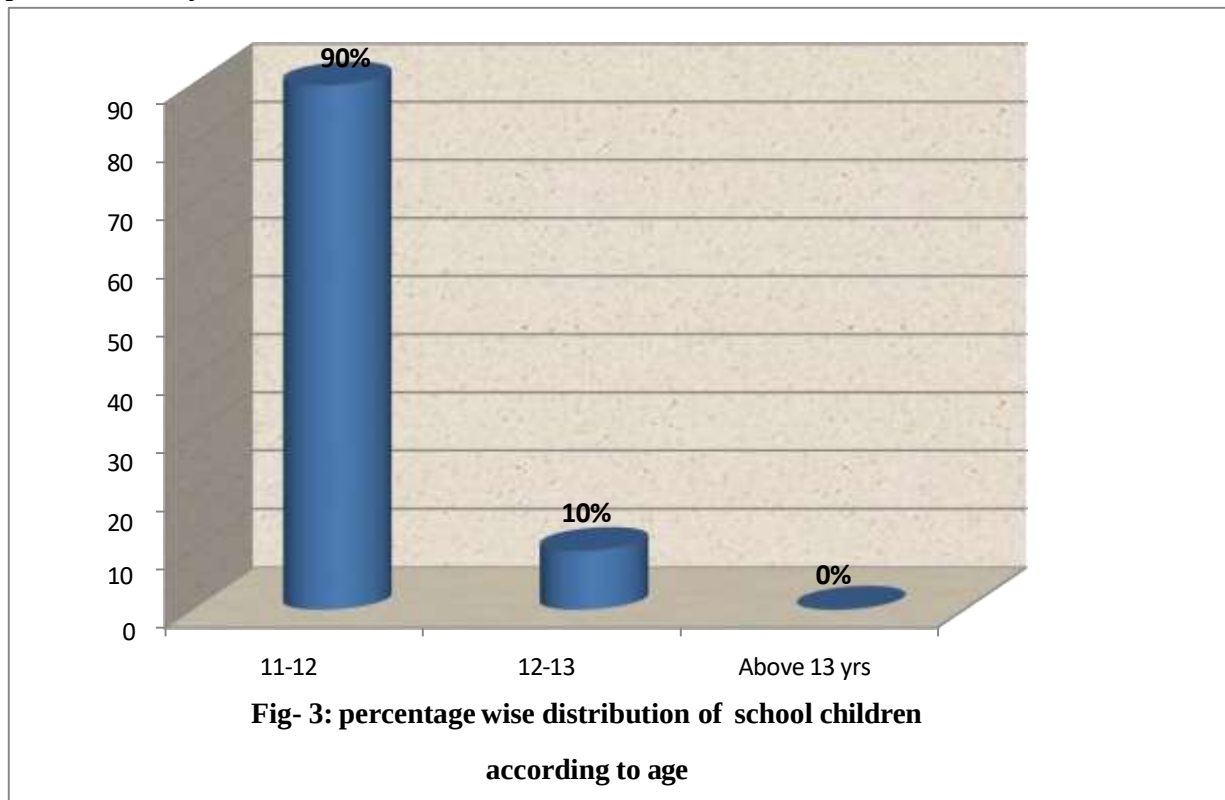


Table -3 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO GENDER.

N=100

SI.NO	GENDER	FREQUENCY	PERCENTAGE
1	Male	40	40%
2	Female	60	60%
	Total	100	100%

Above table explained that, out of 100 school children, 60(60%) of the school children were girls and 40(40%) were boys.

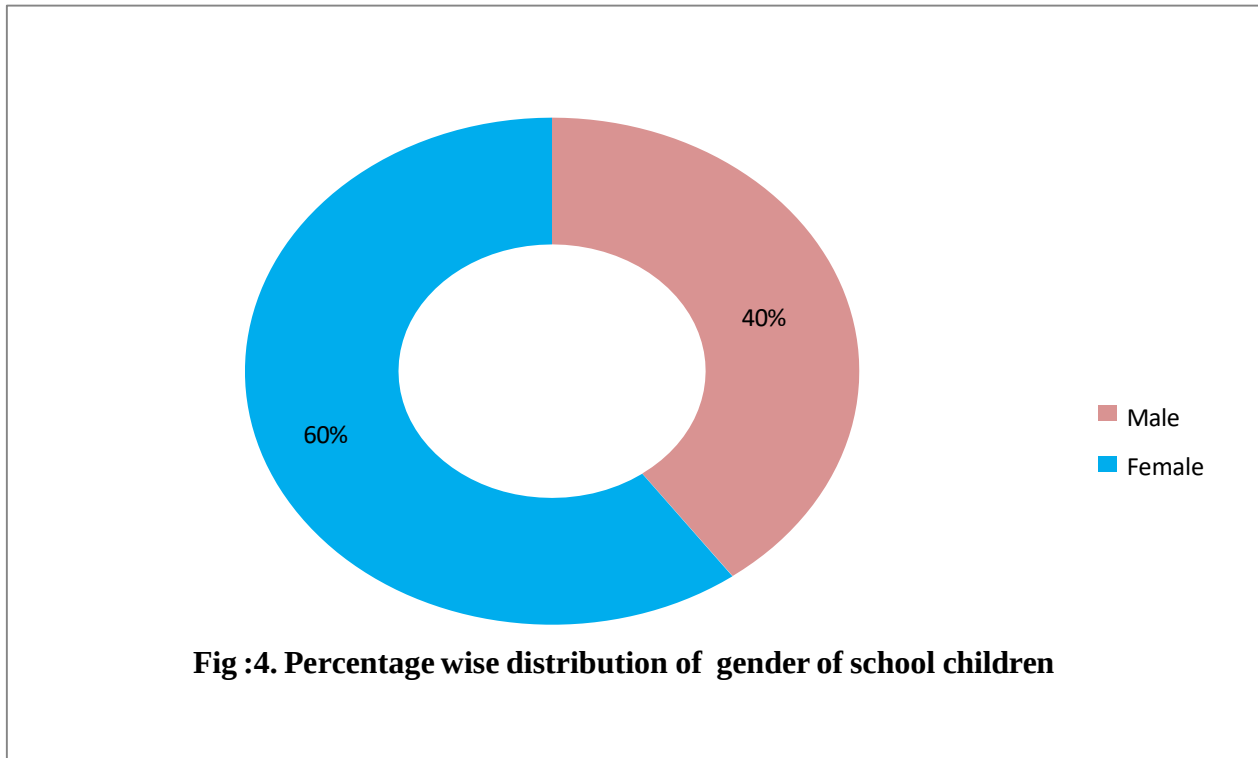


Table-4 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO SOCIO ECONOMIC STATUS

N=100

Sl.NO	SOCIO-ECONOMIC STATUS	FREQUENCY	PERCENTAGE
1	Upper class	0	0%
2	Upper middle	12	12%
3	Lower middle	40	40%
4	Upper lower	48	48%
5	Lower class	0	0%
	Total	100	100%

The Table described that according to socio -economic status majority 48(48%) of school children belongs to upper lower class, followed by 40(40%) were belongs to lower middle class, least 12(12%) were living with upper middle class and no one belongs to upper class and lower class.

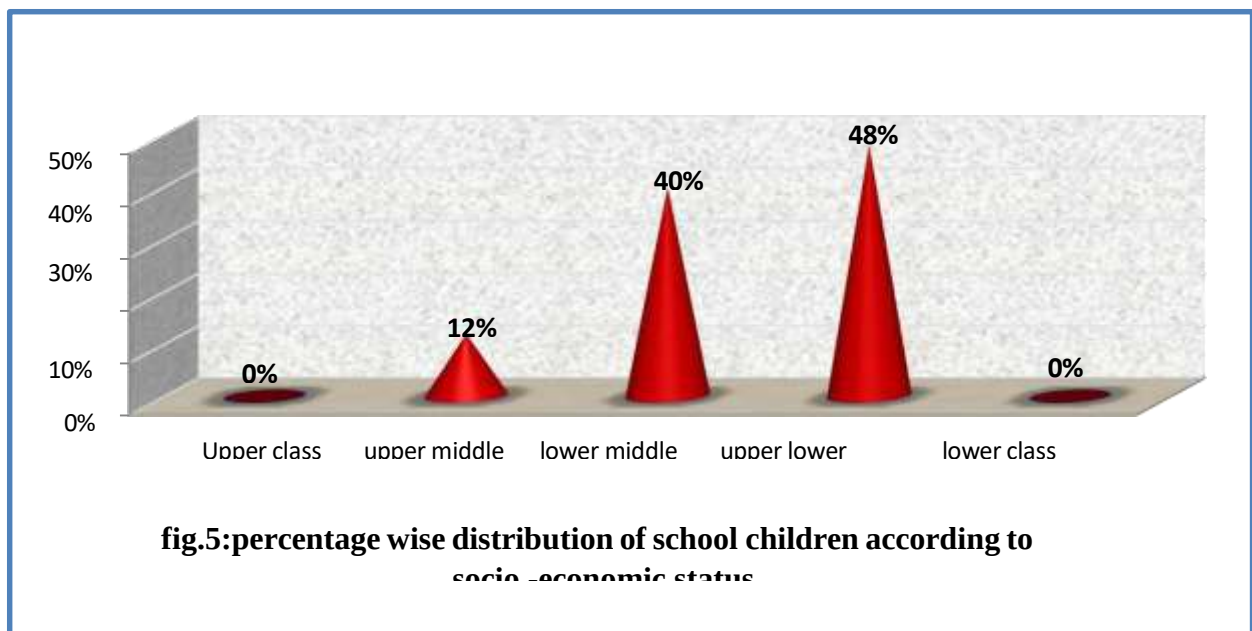


Table -5 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO RELIGION.

N=100

Sl.NO	RELIGION	FREQUENCY	PERCENTAGE
1.	Hindu	60	60%
2	Muslim	26	26%
3	Christian	14	14%
	Total	100	100%

Above table explained that out of 100 school children majority 60 (60%) were belongs to Hindu, 26(26%) of them were from Muslim community and remaining 14 (14%) of them were Christian.

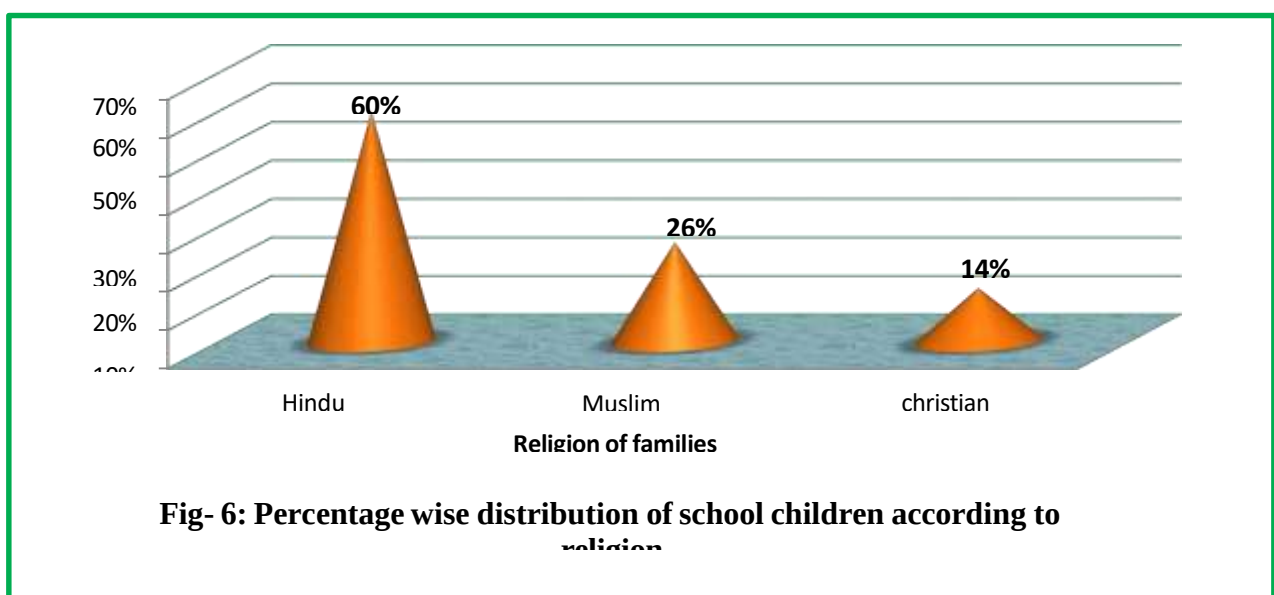


Table -6 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO FAMILY MONTHLY INCOME.

N=100

Sl.NO	FAMILY MONTHLY INCOME	FREQUENCY	PERCENTAGE
1	BELOW 5000	3	3%
2	50001-10000	24	24%
3	100001-15000	14	14%
4	150001-20000	17	17%
5	20000-above	15	15%
	Total	100	100%

Above table depicts that out of 100 school children majority 14(14%) were had family monthly income of Rs. 10001-15000 followed by 24 (24%) were had income of 5000-10000,17 (17%) were had the income of Rs. 15000-20,000,15 (15%) were had the income of 20001&above and few that is only 3 (3%) of school children were had the family income of 5000.

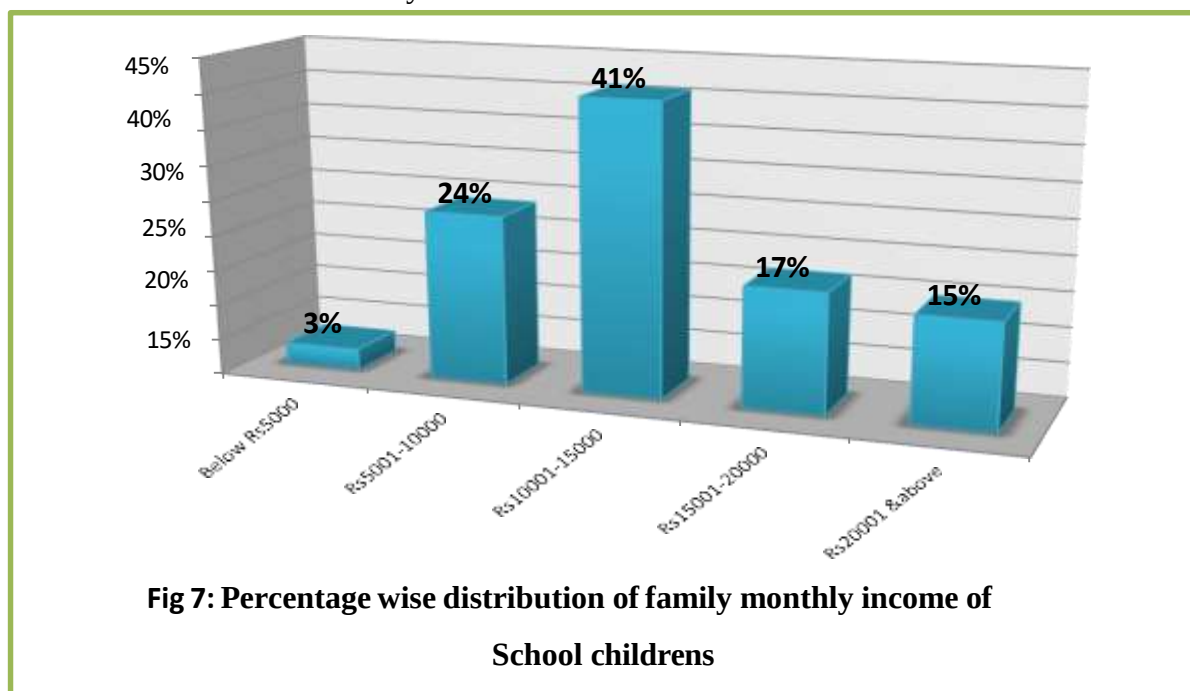


Table -7: FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO FAMILY TYPE.

N=100

Sl.NO	FAMILY TYPE	FREQUENCY	PERCENTAGE
1.	Nuclear	47	47%
2.	Joint	53	53 %
	Total	100	100%

Above table explained that out of 100 school children majority 53(53%) of them belongs to joint family and remaining 47 (47%) were from nuclear family.

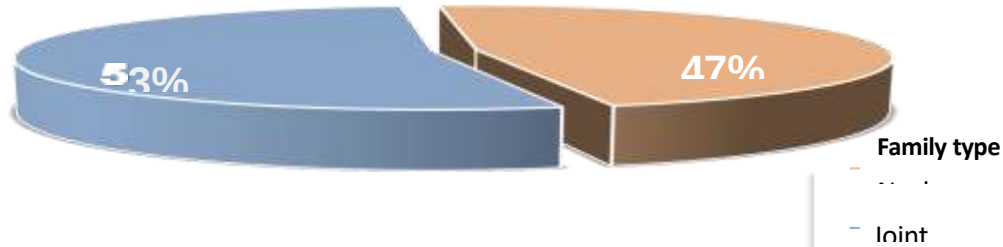


Fig.8: Percentage wise distribution of school children according to family type.

Table -8 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF SCHOOL CHILDREN ACCORDING TO SOURCE OF INFORMATION.

N=100

Sl.NO	SOURCE OF INFORMATION	FREQUENCY	PERCENTAGE
1	Mass media	48	48%
2	Health professionals	35	35%
3	Relatives/friend	17	17%
	total	100	100%

Above table depicts that out of 100 school children majority 48(48%) relies mainly on mass media (T.V, radio, new papers) , followed by 35 (35%) were depends on health professionals remaining 17(17%)of them got information through relatives /friends.

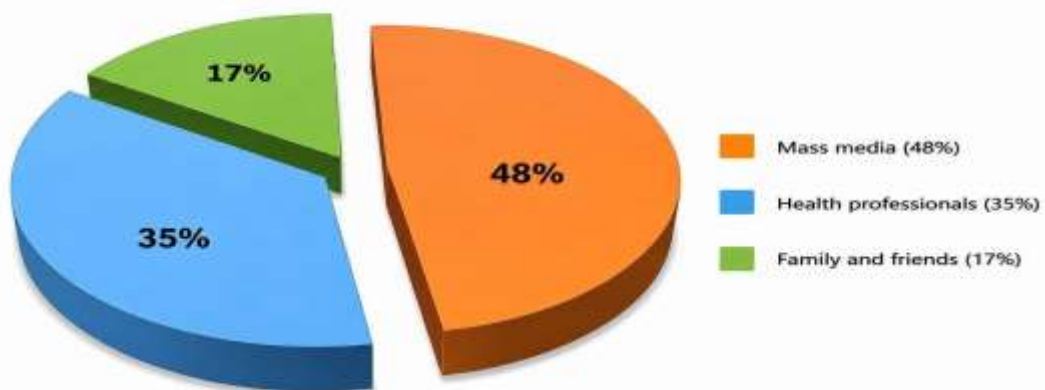


Fig 8: Percentage wise distribution of students source of information of knowledge. (N = 100)

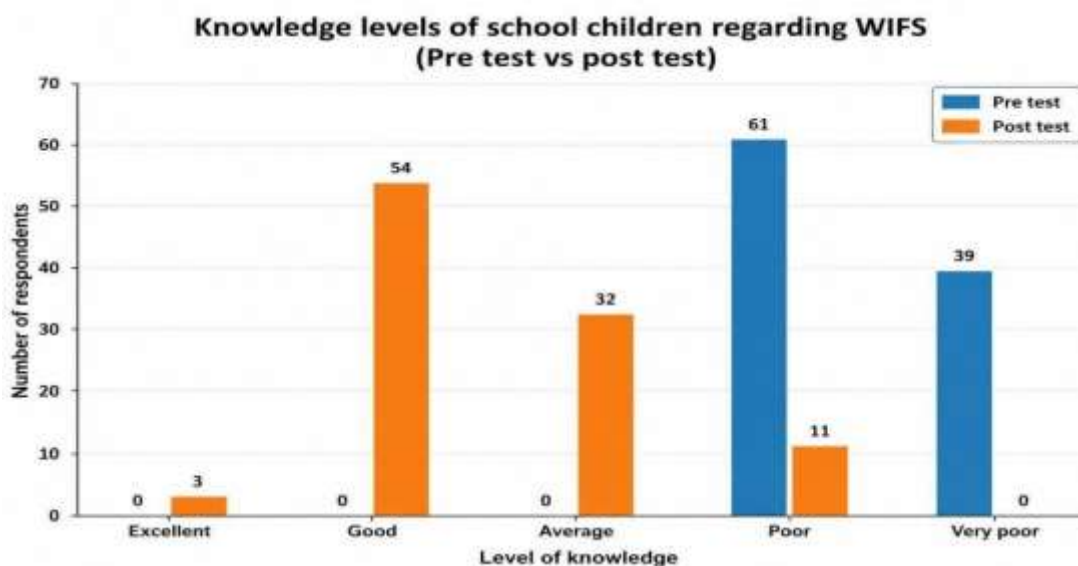
SECTION-II: ASSESSMENT OF KNOWLEDGE REGARDING WIFS AMONG SCHOOL CHILDREN.

Table -9 : FREQUENCY AND PERCENTAGE DISTRIBUTION OF KNOWLEDGE LEVELS AMONG SCHOOL CHILDREN REGARDING WIFS IN PRE AND POST TEST

N=100

Level of knowledge	Pre - test		Post-test	
	No. of respondents	Percentage	No. of respondents	Percentage
Excellent	0	0	3	3%
Good	0	0	54	54%
Average	0	0	32	32%
Poor	61	61%	11	11%
Very poor	39	39%	0	0
Total	100	100	100	100

Above table explains that in pretest, out of 100 school children majority 61(61%) were had poor knowledge followed by 39 (39%) of them had very poor knowledge and none of them were had excellent , good , average knowledge where as in post-test majority of them 54(54%) had good knowledge followed by 32(32%) had average knowledge ,11(11%) had poor knowledge ,very few 3(3%) of them had excellent knowledge and none of them had very poor knowledge.



SECTION III: EVALUATION OF EFFECTIVENESS OF STP ON KNOWLEDGE REGARDING WIFS AMONG SCHOOL CHILDREN.

PART-A: AREA WISE AND TOTAL KNOWLEDGE MEAN, S.D AND MEAN PERCENTAGE IN PRE- TEST AND POST TEST.

Table -10 : AREA WISE AND TOTAL KNOWLEDGE MEAN, S.D AND MEAN PERCENTAGE IN PRE- TEST AND POST TEST.

N=100

Knowledge area	Max. score	Pre-test (O1)		Post-test (O2)		Effectiveness (O2-O1)	
		Mean $\pm$ SD	Mean %	Mean $\pm$ SD	Mean %	Mean $\pm$ SD	Mean %
General aspects of information about WIFS	5	1.4 $\pm$ 0.52	35	3 $\pm$ 0.8	70	1.6 $\pm$ 0.28	35
Anemia & Benefits of WIFS	5	2.33 $\pm$ 1.7	13.70	9.31 $\pm$ 2.06	54.76	6.98 $\pm$ 0.36	41.06
Importance of intake of WIFS	15	2.35 $\pm$ 1.32	26.11	6.48 $\pm$ 1.36	72	4.13 $\pm$ 0.04	45.89
Treatment and prevention	5	2 $\pm$ 0.94	33.33	4.99 $\pm$ 0.88	83.16	2.99 $\pm$ 0.06	49.83
Total	30	8.08$\pm$4.48	26.08	23.35$\pm$4.65	64.86	15.7$\pm$0.74	42.94

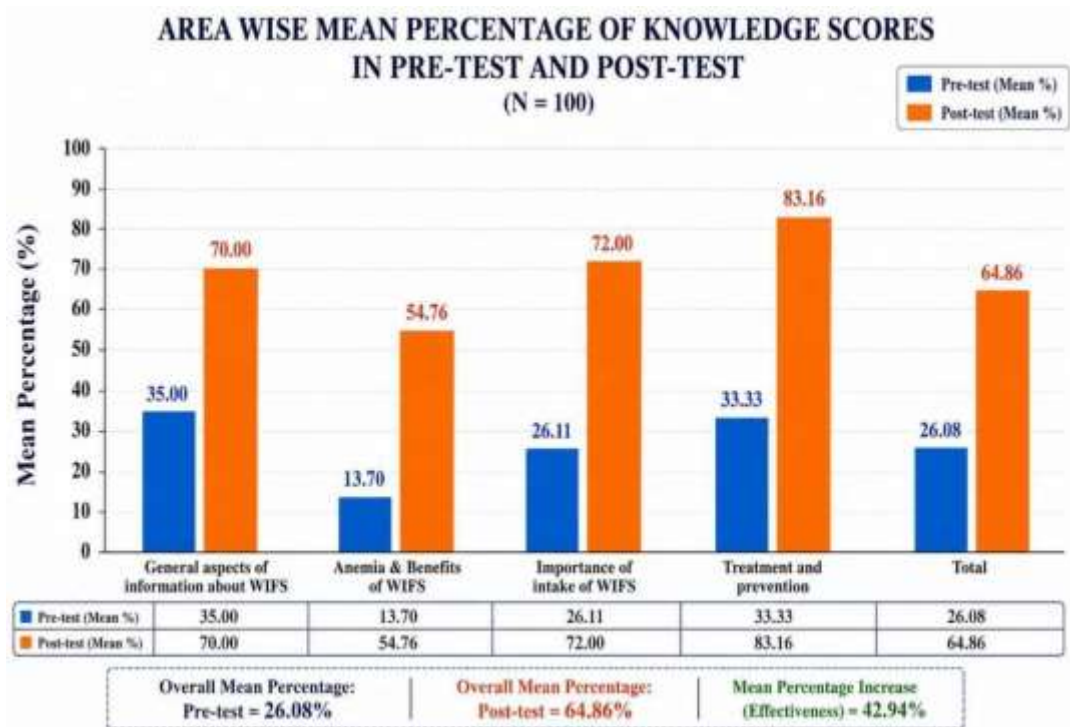
Above table shows that, Area wise comparison of mean % and standard deviation of the knowledge scores of school children in pre-test and post-test reveals there was increase in the mean knowledge score of the school children regarding WIFS after STP. Comparison of area wise mean and SD of the knowledge scores in the area of “general aspects of importance about WIFS shows that the pre-test mean knowledge score was 1.4 with SD $\pm$ 0.52 and mean percentage was 35% whereas post-test mean of knowledge score in this area was 3 with SD $\pm$ 0.8 and mean percentage was 70 %.

In the area of knowledge on anemia & benefits of WIFS pre-test mean knowledge score was 2.33 with SD $\pm$ 1.7 and mean percentage was 13.70 %. whereas post-test mean knowledge score s 9.31 with SD $\pm$ 2.06 and mean percentage was 54.76%.

In the area of Knowledge about importance of intake of WIFS pre-test mean knowledge score was 2.35 with SD $\pm$ 1.32 and mean percentage was 26.11 % whereas post-test mean knowledge score was 6.48 with SD $\pm$ 1.36 and mean percentage was 72%.

In the area of Knowledge about treatment & prevention pre-test mean knowledge score was 2 with SD $\pm$ 0.94 and mean percentage was 33.33% whereas post-test mean knowledge score was 4.99 with SD $\pm$ 0.88 and mean percentage was 83.16%.

The overall findings revealed that the post-test knowledge-score (23.35 $\pm$ 4.65) and 64.86 was more that compared to the pre-test knowledge score (8.08 $\pm$ 4.48) and 26.08 Hence it indicates that the STP was effective in enhancing the knowledge of school children regarding WIFS.



PART -B : SIGNIFICANT DIFFERENCE BETWEEN OVERALL PRE -TEST AND POST TEST KNOWLEDGE SCORES OF SCHOLL CHILDREN BY PAIRED T-TEST.

Table -11 : SIGNIFICANT DIFFERENCE BETWEEN OVERALL PRE - TEST AND POST TEST KNOWLEDGE SCORES.

N=100

Test	Mean	Std. Error	Mean Diff.	SD Diff	Paired t-value	Table Value
Pre-test (x1)	7.08	0.44	15.7	0.74	26.43	1.98
Post-test(x2)	24.35	0.46				

The table described that the calculated **t** -value was (26.43) the hypothesis H₀₁ -there will not be significant difference between pretest knowledge and post-test knowledge scores of school children regarding WIFS was rejected. Hence the STP was proved to be effective.

SECTION IV: ASSOCIATION BETWEEN POST TEST KNOWLEDGE SCORES AND SELECTED SOCIO DEMOGRAPHIC VARIABLES.

Table -12: ASSOCIATION BETWEEN POST TEST SCORES WITH SELECTED SOCIO DEMOGRAPHIC VARIABLES.

N=100

SL. NO	Socio demographic variables	Df	Chi square value	Table value	Level of significance	Inference
1.	Age in years	3	3.04	7.78	0.05	Not significant
2.	Gender	1	1.43	5.880 *	0.05	significant

3.	Socio-economic status	1	1.14	3.84	0.05	Not significant
4.	Religion	2	0.74	5.99	0.05	Not significant
5.	Family monthly income	3	5.02	7.82	0.05	Not significant
6	Family type	1	0.18	3.84	0.05	Not significant
7.	Sources of Health information about WIFS	2	1.33	5.250 *	0.05	significant

Above table shows that there was significant association was found between gender , source of information with knowledge scores of school children significant at 0.05 level and there was no significant association between age in years, socio economic status , religion ,family monthly income ,family type with knowledge scores of school children regarding WIFS .Hence H₀₂ -there will not be significant association between knowledge scores and socio demographic variables was rejected.

CHAPTER -V DISCUSSION

In research, the discussion is an in-depth exploration of the results, going into detail about the meaning of researcher's findings and citing relevant sources to put them in context.

The purpose of the discussion is to interpret and describe the significance of researcher's findings in relation to what was already known about the research problem being investigated and to explain any new understanding or insight that emerged as a result of the present research. The present research study was done to assess the effectiveness of structured teaching programme on knowledge regarding weekly iron and folic acid supplementation programme among school children studying in selected govt. school of Tirupathi. The discussion of the present study is in accordance with the objectives of the study, hypothesis, and effectiveness of structured teaching programme. which was assisted by descriptive and inferential statistical

analysis of collected data, and it is classified into 4 sections.

Section I: Description of socio-demographic characteristics of school children.

Section-II: Assessment of knowledge levels regarding WIFS among school children.

Section III: Evaluation of the effectiveness of the STP on knowledge regarding WIFS among school children.

PART-A : Area wise and total knowledge mean, S.D , mean percentage in pre- test and Post test

PART-B :Significant difference between pre and post-test knowledge score of school children regarding WIFS.

Section IV: Association between post-test knowledge score of school children with their selected socio-demographic variables.

SECTION -I : DESCRIPTION OF SOCIO-DEMOGRAPHIC CHARACTERISTICS OF SCHOOL CHILDREN.

In the present study majority, 90 (90%) of school children were from the age group of 11-12 years, followed by 10 (10%) belongs to the age group of 12-13 years, No children in the age group of above 13

years.

In respect to the gender, out of 100 school children, 60(60%) of the school children were girls and 40(40%) were boys.

In respect to socio-economic status, majority 48(48%) of school children belongs to upper lower class; followed by 40(40%) were belongs to lower middle class, few i.e 12(12%) were living with upper middle class and no one belongs to upper class and lower class.

In regard to religion, majority 60 (60%) were belongs to Hindu, 26(26%) of them were from Muslim community and remaining 14 (14%) of them were Christian.

Related to family monthly income, majority 41(41%) were had family monthly income of Rs. 10001-15000 followed by 24 (24%) were had income of 5000-10000, 17 (17%) were had the income of Rs. 15000-20,000, 15 (15%) were had the income of 20001&above and very few

i.e only 3 (3%) of school children were had the family income of 5000.

Pertaining to family type, out of 100 school children majority 53(53%) of them belongs to joint family and remaining 47 (47%) were from nuclear family.

Regard to source of information, majority 48(48%) relies mainly on mass media (T.V, radio, newspapers), followed by 35 (35%) were depends on health professionals remaining 17(17%) of them got information through relatives /friends.

The First objective was the level of knowledge regarding WIFS programme.

SECTION -II : ASSESSMENT OF KNOWLEDGE LEVELS REGARDING WIFS AMONG SCHOOL CHILDREN.

The level of knowledge scores, in pre-test, out of 100 school children majority 61(61%) were had poor knowledge followed by 39 (39%) of them had very poor knowledge and none of them were had excellent , good , average knowledge where as in post-test majority of them 54(54%) had good knowledge followed by 32(32%) had average knowledge ,11(11%) had poor knowledge ,very few 3(3%) of them had excellent knowledge and none of them had very poor knowledge.

A study conducted by Jyothi Lakshmi et.al in 2019 on WIFS in the government school and Anganwadi centres . Hyderabad, Telangana. The results of the study shown that out of 313 students, only 15% had awareness of anaemia and 17% known the benefits of WIFS .Girls had better knowledge than boys ($p<0.05$). These results are supporting the present study findings.³¹

The second objective was evaluate the effectiveness of STP on knowledge regarding WIFS programme .

SECTION III: DEALS WITH EVALUATION OF THE EFFECTIVENESS OF THE STP ON KNOWLEDGE REGARDING WIFS AMONG SCHOOL CHILDREN.

PART-A :Area wise and total knowledge mean, S.D , mean percentage in pre- test and post-test:

Area wise effectiveness of mean % and standard deviation of the knowledge scores of school children in pre-test and post-test reveals, there was increase in the mean knowledge score of the school children regarding WIFS after STP. Comparison of knowledge scores in the area of “general aspects of information about WIFS shows that the pre-test mean knowledge score was 1.4 with SD ± 0.52 and mean percentage was 35% whereas post-test mean of knowledge score in this area was 3 with SD ± 0.8 and mean percentage was 70 %.

In the area of knowledge on anemia & benefits of WIFS pre-test mean knowledge score was 2.33 with SD ± 1.7 and mean percentage was 13.70 %. whereas post-test mean knowledge score was 9.31 with SD ± 2.06 and mean percentage was 54.76%.

In the area of Knowledge about importance of intake of WIFS pre-test mean knowledge score was 2.35 with SD ± 1.32 and mean percentage was 26.11 % whereas post-test mean knowledge score was 6.48 with SD ± 1.36 and mean percentage was 72%.

In the area of Knowledge about treatment & prevention pre-test mean knowledge score was 2 with SD ± 0.94 and mean percentage was 33.33% whereas post-test mean knowledge score was 4.99 with SD ± 0.88 and mean percentage was 83.16%.

The overall findings revealed that the post-test knowledge-score (23.35 ± 4.65) and 64.86% was more than compared to the pre-test knowledge score (8.08 ± 4.48) and 26.08% Hence it indicates that the STP was effective in enhancing the knowledge of school children regarding WIFS.

PART -B: Significant difference between overall pre -test and post test knowledge scores of school children by paired t-test.

The calculated t value was (26.43) the hypothesis H₀₁ -there will not be significant difference between pre-test knowledge and post-test knowledge scores of school children about WIFS was rejected. Hence the STP is proved to be effective.

A study conducted on evaluate the effectiveness of STP on knowledge regarding WIFS programme in selected schools by Vinaykumar G, in 2024 at Chamarajanagar .Results shown that in pretest ,most of the adolescent school children (68.3%) had poor knowledge . Mean percentage of the post test score $M=14.75$,SD=4.25 were higher than the mean of the pretest level of knowledge score that is $M= 7.57$ (28.3%) SD =4.19 . The paired t-test value was 11.17 significant at 0.05 level .These findings of the study were matching with the present study.³²

The third objective was to find association between the post-test knowledge regarding WIFS programme with the selected socio demographic variables.

SECTION -IV : ASSOCIATION BETWEEN POSTTEST KNOWLEDGE SCORES AND SELECTED SOCIO DEMOGRAPHIC VARIABLES.

significant association was found between gender , source of information with knowledge scores of school children significant at 0.05 level and there was no significant association between age in years, socio economic status , religion ,family monthly income ,family type with knowledge scores of school children regarding WIFS .Hence H₀₂ -there will not be significant association between knowledge scores and socio demographic variables was rejected.

There was a study conducted on prevalence of anaemia, knowledge and attitude regarding WIFS among school children by Surendra Kumar et.al in 2023 New Delhi ,India . The study shown association between gender, source of information with knowledge levels significant at 0.05 level. These results are correlating with present study.³³

SUMMARY:

CHAPTER -IV

SUMMARY, CONCLUSION,IMPLICATIONS AND RECOMMENDATIONS

Anaemia is a major public health problem especially in adolescent age group because of its intergenerational impact. The Ministry of Health and Family Welfare, India launched the weekly iron and folic acid supplementation programme for adolescent girls and boys.

OBJECTIVES OF THE STUDY:

- To assess the level of knowledge regarding on WIFS programme by pre -test.
- To evaluate the effectiveness of structured teaching programme on knowledge regarding WIFS programme among school children by post-test.
- To find out the association between the post -test knowledge regarding WIFS programme among school children with their selected socio-demographic variables.

HYPOTHESIS:

- **H01:** There will be no significant difference between pre -test and post -test knowledge of school children regarding WIFS programme.
- **H02 :** There will be no significant association between the post -test knowledge of school children regarding WIFS programme with their selected socio demographic variables.

METHODOLOGY :

Conceptual frame work for the study was based on Ludwig Von Bertalanffy's general system theory. According to literature has helped the researcher to get on insight into the present study to gain in depth knowledge about content , and to the structured teaching questionnaire for data collection .

The research approach for present study was non experimental. one group pre-test post-test design was used. Setting for the study was kodhanda Ramaswamy gov. school Tirupathi. Data collection was done among 100 school children . Reliability and pilot study conducted among 10 school children probability simple random technique was used to selected the subjects from the school children .

Structured questionnaire prepared by the investigator which consist of 30 questions to assess the effectiveness of STP on knowledge regarding WIFS programme among school children in selected govt. kodhanda Ramaswamy school.

The tool consists of Two sections . Section A dealt with socio demographic variables . The selected socio -demographic variables in the present study were Age in years, gender, socio-economic status ,religion family monthly income, family type, and source of health information about WIFS. Section – B dealt with questionnaire regarding knowledge on weekly iron and folic acid supplementation . The tool was given for content validity experts in the field of community health nursing and community medicine and also tested for reliability by Karl person's correlation coefficient method .

The results showed that tool was reliable .pilot study was conducted at Malwaji high school Tirupathi. It was reliable, feasible ,practicable and appropriate . The main study was conducted from 6-4-2026 to 13-4-2026. Data was analysed with the help of descriptive and inferential statistics, frequency and percentage were used to analyse the socio -demographic variables ,mean, standard deviation and paired t-test were completed and the findings were interpreted. Association between knowledge levels regarding WIFS with socio -demographic variables were calculated by using chi-square test.

MAJOR FINDINGS OF THE STUDY :

In this present study the level of knowledge scores in pre-test ,out of 100 school children majority 61(61%)were had poor knowledge followed by 39 (39%) of them had very poor knowledge and none of them were had excellent ,good, average knowledge where as in post-test majority of them 54(54%) had good knowledge followed by 32 (32%) had average knowledge ,11(11%) had poor knowledge ,very few 3(3%) of them had excellent knowledge and none of them had very poor knowledge .

Area wise effectiveness of mean % and standard deviation of the knowledge scores of school children in pre-test and post-test reveals, there was increase in the mean knowledge score of the school children regarding WIFS after STP. Comparison of knowledge scores in the area of “general aspects of Information about WIFS shows that, the pre-test mean knowledge score was

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It was found that the calculated t value was (26.43) the hypothesis H₀₁ -there will be no significant difference between pre-test knowledge and post-test knowledge scores of school children about WIFS was rejected. Hence the STP was proved to be effective.

significant association was found between gender , source of information with knowledge scores of school children at 0.05 level and there was no significant association between age in years, socio economic status , religion ,family monthly income ,family type with knowledge scores of school children regarding WIFS .Hence H₀₂ -there will be no significant association between knowledge scores and socio demographic variables was rejected.

CONCLUSIONS:

Following conclusions were drawn from the best findings of the study

1. After structured teaching programme there was significant difference in post test knowledge scores. It shows that exposure to structured teaching programme would increase the knowledge.
2. School children shown interest to know and involve in the WIFS programme and anemia prevention.
3. The school children gained knowledge will aid reducing the incidence of anemia.

NURSING IMPLICATIONS:

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

NURSING EDUCATION:

Education is the key component to update and improve the knowledge of an individual.

Now a days much importance is given to awareness and promotion of health than the curative aspects. As the needs of society are continuously changing newer components must be incorporated in the nursing curriculum. Nursing education must emphasize on preventive and rehabilitative aspects. The nursing teachers can use the result of the study as an informative illustration for the school children. Nursing education should help in inculcating values and a sense of responsibility in the school children to educate the parents of children with such disorders and to foster the practice of health education.

In the present scenario, knowledge on weekly iron and folic acid supplementation much deficient among the school children. If the same study is conducted among the staff, teachers and health care personnel, it may contribute knowledge to them. In service education program can be conducted to upgrade the knowledge of nursing health personnel about weekly iron folic acid (WIFS) programme & anemia and its prevention. Since this topic has current importance, so this should be included in the nursing education.

NURSING ADMINISTRATION:

Nurse Administrators are the key persons to plan, organize and conduct in- service education programs. Nurse administrator's support should be necessary to conduct and evaluate health education program on knowledge regarding WIFS program. They can help to improve the knowledge of nursing professionals the staff nurses working in community departments by providing various teaching methods on WIFS programme with the help of various AV aids. They are in a key position to organize, implement and evaluate educative programs which will in turn helps to improve the knowledge as well as to meet the future needs and accelerate the standards of community services.

NURSING PRACTICE:

Nursing is an art and a science. As a science, nursing is based upon a body of knowledge that is always changing with new discoveries and innovations. When nurses integrate the science and art of nursing into their practice, the quality of care provided to clients is at a level of excellence that benefits clients in numerous ways. They are the key persons of the health team, who plays a vital role in the promotion and maintenance of health. They can provide adequate teaching to children, parents and family members. So that they will come to know about the recent changes related to WIFS. Hence the nurses should have adequate knowledge to improve the standards of community care.

NURSING RESEARCH:

The main goal of the nursing research is to improve the knowledge of nursing students through the implementation of evidence-based practice. The study provides a baseline data for conducting other research studies. The study will be a motivation for the budding researchers to conduct similar studies in large scale. The study will be a reference for the research scholars. Further research works can be conducted with every medical condition to identify most effective strategies to importing knowledge.

LIMITATIONS:

- Study is limited to 100 school children in selected govt. school of Tirupathi

- Study is limited to school children studying 8th and 9th standard .

DELIMITATIONS:

- Study is delimited to selected govt. school that is kodanda rama swamy school, Tirupathi.

RECOMMENDATIONS:

Based on the findings of the study, it is recommended that,

- A study can be conducted to assess the knowledge regarding attitude and practice regarding WIFS programme.
- A comparative study can be done between different govt school children and private school children on knowledge regarding WIFS programme.
- A study may be conducted to evaluate the effectiveness of information booklet related to knowledge on WIFS
- Similar study can be conducted on large population involving school children from various schools
- Similar study can be conducted using virtual platforms or innovating teaching learning medium
- A study can be conducted to assess the knowledge among health professionals related to WIFS.

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