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EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING WEEKLY IRON AND FOLIC ACID SUPPLEMENTATION PROGRAMME AMONG SCHOOL TEACHERS IN SELECTED SCHOOLS AT TRIVANDRUM DISTRICT

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ABSTRACT

A Quantitative study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers in selected schools at Trivandrum District. The objectives of the study were to assess the pre test knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers, to evaluate the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers, to find out the association between the pre test knowledge scores regarding Weekly Iron and Folic acid Supplementation Programme with selected socio demographic variables. Non probability- convenient sampling technique was used to select 60 school teachers for the study. The tools used for data collection were demographic data, structured knowledge questionnaire, and structured teaching programme. The mean post test knowledge score 23.4 with standard deviation 2.5 was significantly higher than the mean pre test score 15.4 with standard deviation 4.The study showed that there was improvement in the knowledge of school teachers after conducting structured teaching programme and thus structured teaching programme was statistically significant at 0.01 level (t= 16.86, p<0.00).There was no significant association between mean pre test knowledge score with sociodemographic variables. Hence the study suggested that structured teaching programme was effective in improving the knowledge of school teachers regarding Weekly Iron and Folic acid Supplementation Programme.

KEYWORDS: Weekly Iron and Folic acid Supplementation Programme; school teachers; structured teaching programme.

MATERIALS AND METHODS

The present study was aimed at evaluating the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers.

Research approach

The approach used in the study is quantitative approach and it is used to find out the effect of structured teaching programme on knowledge regarding Weekly iron and folic acid supplementation programme among school teachers.

Research design

The research design selected for the present study is Pre-experimental – one group pre test post-test design.

Dependent variable

In the present study it refers to the knowledge of school teachers regarding WIFS programme.

Independent variable

In this study it refers to the self-developed structured teaching programme regarding WIFS programme such as anaemia, etiology, signs and symptoms, clinical features, management, regarding Weekly Iron and Folic acid Supplementation Programme that is prepared for school teachers.

Extraneous variable

In the present study it refers to the selected socio demographic variables such as age, sex, Area of residence, educational status, section of teaching, and main source of information regarding WIFS.

Setting of the study

The present study was conducted in the Victory girls and Victory vocational higher secondary school Nemom at Trivandrum district.

Population
In the present study, population comprises of all teachers who are teaching in 6th-12th standards.

Sample and sampling technique
In this study, the sample consists of 60 School teachers who are teaching in 6th-12th standards of Victory Girls Higher secondary School and Victory Vocational Higher secondary school Nemom at Trivandrum .Sampling technique used is convenient sampling.

Sampling Criteria
Inclusion Criteria
Teachers who are
- Willing to participate in the study.
- Teaching children in 6th-12th standards.
- Able to follow instructions given to them.

Exclusion Criteria
Teachers who have already attended a teaching programme on Weekly Iron and Folic acid Supplementation Programme.

Tool/ instruments
To fulfill the objectives of the study a structured questionnaire was developed.
This study was aimed at evaluating the effectiveness of teaching programme on Weekly Iron folic acid Supplementation Programme followed by administration of structured questionnaire.

The following steps were adopted prior to the development of the tool:
➢ Review of literature provided adequate content for the tool preparation.
➢ Discussions with Professors and Health professionals.
➢ Opinion of experts from medicine and health department

Description of the tool
Tool 1: Socio demographic proforma
Socio demographic proforma consist of many items such as age, sex, marital status, educational status ,income ,section of teaching, area of residence, main source of information regarding Weekly Iron and Folic acid Supplementation Programme

Tool II: Structured knowledge questionnaire
It was prepared for the assessment of knowledge of the school teachers regarding Weekly Iron and Folic acid Supplementation Programme.

The items were developed, so as to cover different areas such as General aspects on WIFS, regarding anaemia, regarding administration of tablets, consumption of tablets, implementation, effectiveness, diet and contraindications. Structured knowledge questionnaire consist of 30 items of multiple choice questions. The maximum score of each item is '1'. The total score is 30.

Structured teaching programme
The structured teaching programme regarding Weekly Iron and Folic acid Supplementation Programme based on review of literature and discussion with experts.

The steps involved in the development of planned teaching programme were:
➢ Review of literature and discussion with experts.
➢ Preparation of the first draft of structured teaching programme.
➢ Content validity of structured teaching programme.
➢ Preparation of the final draft of the structured teaching programme

Content validity of the tool
The prepared data collection tools and the structured teaching programme was given to experts along with the problem statement, objectives, hypotheses, operational definitions, blue print, answer key for the structured questionnaire designed for validation.

Among the 10 expert evaluators, eight were the nursing personnel from Child Health nursing department and three are medical practitioners from Department of Paediatrics. Experts were asked to give their opinion and suggestions about the content of the tool. The structured knowledge questionnaire had 30 questions and two questions were modified as there was only 65% agreement. Some changes were made on the socio demographic proforma. Necessary modifications were done in the tool according to their suggestions.

Reliability of the tool
The reliability of the instrument is established by administering the tool to ten school teachers of Government Model Higher Secondary School Venganoor. The reliability of the structured knowledge questionnaire is obtained by calculating the coefficient of internal consistency using split half method. The reliability of the structured knowledge questionnaire is found to be 0.917 which indicates that the tools are reliable.

Pilot study
The pilot study was conducted at from Government Model Higher Secondary School Venganoor 5/01/2017– 12/01/2017 after obtaining permission from the District educational officer. The purpose of the study was explained to the sample prior to the study. Ten school teachers were selected by using convenient sampling. The researcher obtained the informed written consent from each participant prior to the studies, assured the sample, that the data collected will be given adequate confidentiality and anonymity and demographic variables were collected. The structured knowledge questionnaire was administered to ten school teachers. After assessing the pre test knowledge of school teachers, a structured teaching programme was administered. The post test was carried on 12/01/2017. The study was feasible and proceeded with the main

study.

Data collection process
Data for the main study was collected from Victory Girls Higher Secondary school and Victory Vocational Higher Secondary School Nemom for period of approximately one month from 16/01/2017 to 23/01/2017 after obtaining the permission from the District educational officer. Researcher used convenient sampling technique for the selection of the sample. The purpose of the study was clearly explained and confidentiality of the data was assured to the sample. The informed consent and the demographic data was collected from the school teachers. The knowledge of the school teachers were assessed using structured knowledge questionnaire. A self developed structured teaching programme was given to the 60 school teachers regarding WIFS programme, anaemia, effectiveness of the programme, dietary management and administration of the tablets. The average time taken was 60minutes. Post test was done after 12 days to reassess the knowledge among school teachers regarding Weekly Iron Folic acid Supplementation Programme.

All respondents cooperated with the researcher during the data collection process, which was terminated after thanking the respondents for their cooperation and patience.

Data analysis
The data obtained from 60 samples and they were organized, tabulated, and analyzed based on the objective of the study using descriptive and inferential statistics.

Descriptive analysis was done by using frequency and percentage. Qualitative data were analyzed by using paired 't' test, to find out whether there is any significant difference between the scores of the pre test and post test signifying the effect of structured teaching programme regarding Weekly Iron Folic acid Supplementation Programme. Chi-square test was used to find out the association of pre test knowledge with selected socio demographic variables.

data analysis and interpretation
The findings have been organized and presented under the following sections
Section I: Description of demographic variables of school teachers.
Section II: Description of knowledge scores of school teachers regarding Weekly Iron Folic acid Supplementation Programme.
Section III: Effect of structured teaching programme on knowledge of school teachers regarding Weekly Iron Folic acid Supplementation Programme.
Section VI: Association between pre test knowledge scores with selected demographic variables

SECTION I
Description of demographic variables of school teachers
This section deals with the description of the demographic variables which includes age, sex, educational status, marital status, income ,section of teaching ,area of residence and main source of information regarding Weekly Iron Folic acid Supplementation Programme.
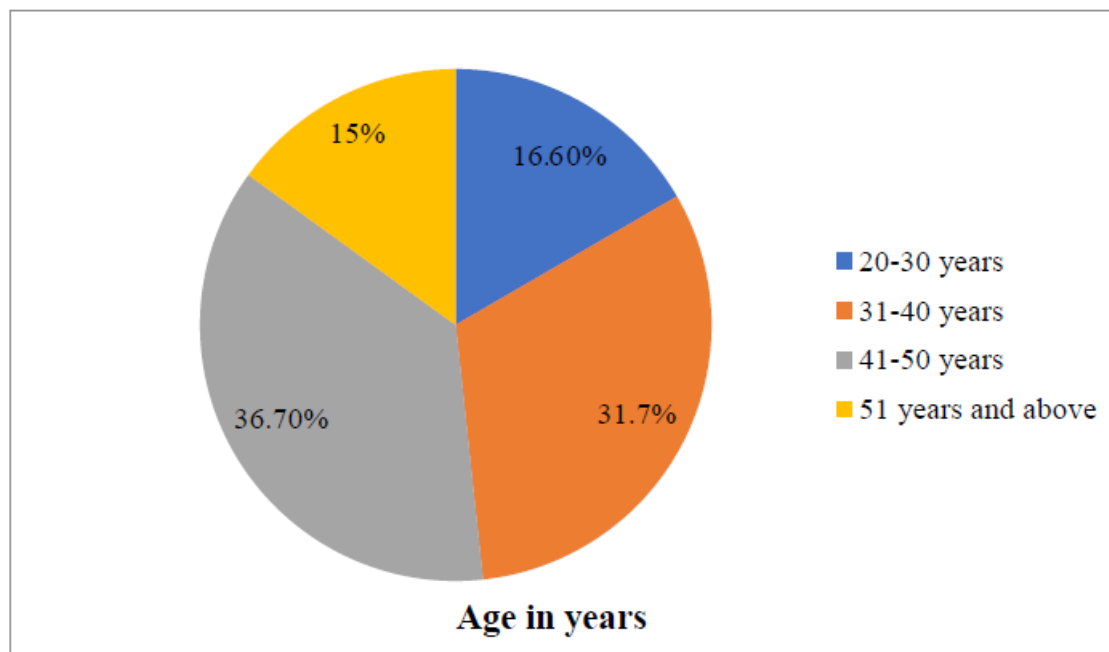

Figure 3: Pie diagram showing percentage distribution of the sample according to age (n=60).
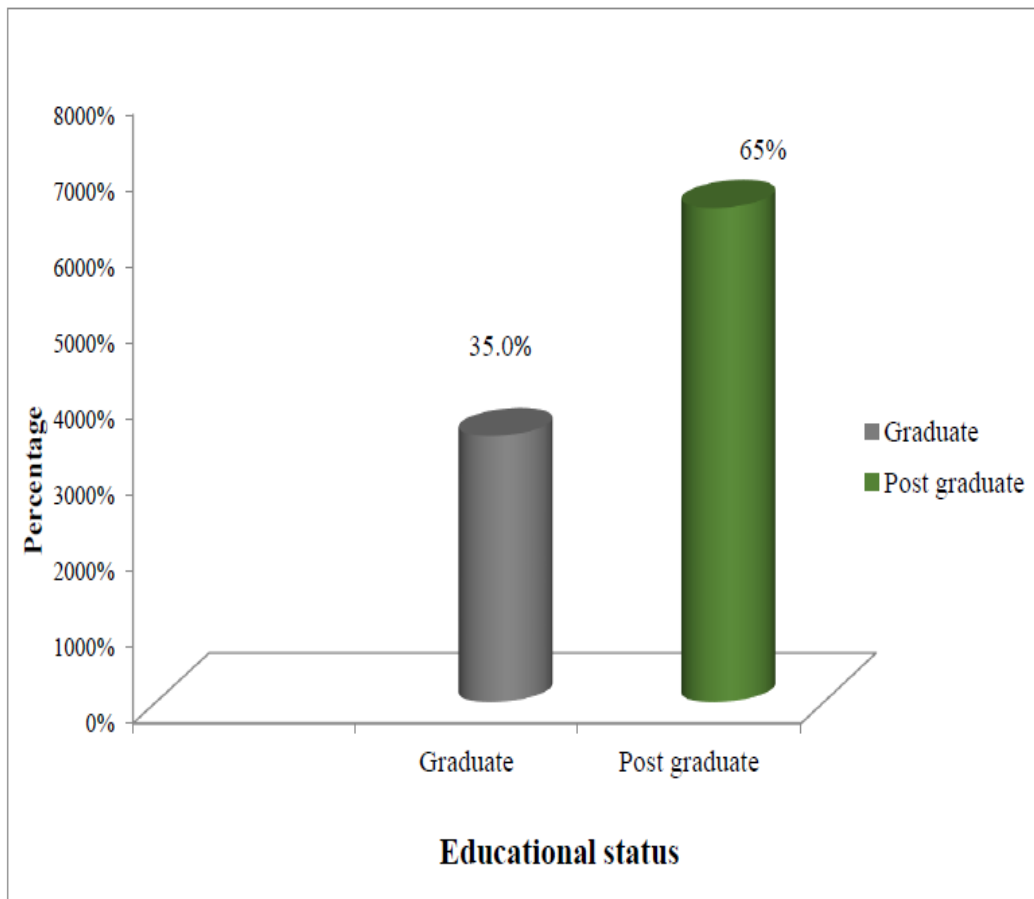
The figure 3 shows that 36.7% school teachers belongs to the age group of 41-50 years, 31.7% of 31-40 years, 16.6% of 20-30 years and 15% of 51 years and above respectively.

Table 1: Frequency and percentage distribution of sample based on gender (n=60)

Frequency	Percentage (f)	(%)
Male	17	28.3
Female	43	71.7

Table 1 Shows that among 60 samples 71.7% were female and 28.3% were males.

Figure 4: Cylindrical diagram showing percentage distribution of sample according to educational status (n=60)

The figure 4 shows that 35% of the school teachers were graduates and 65% of school teachers were post graduates.

Table 2 illustrates that 95% of the sample were married and 5% among them are unmarried.

Figure 5: Bar diagram showing percentage distribution of the sample according Income (n=60)

Table 2: Frequency and percentage distribution of sample according to the Marital status (n=60)

Marital Status	Frequency (f)	Percentage %
Married	57	95%
Unmarried	3	5%

The figure 5 shows that 66.7% samples have 40001 and above income 18.30% have 31000-40000 income and 15% have 20001-30000 income.

Table 3: Frequency and percentage distribution of sample according to the section of teaching (n=60).

Section of teaching	Frequency (f)	Percentage %
Upper Primary	11	18.3
High School	35	58.4
Higher Secondary	14	23.3

The table 3 shows that 58.4% of the samples are teaching in highschool, 23.3% are teaching in Higher secondary and 18.3% are teaching in upper primary.
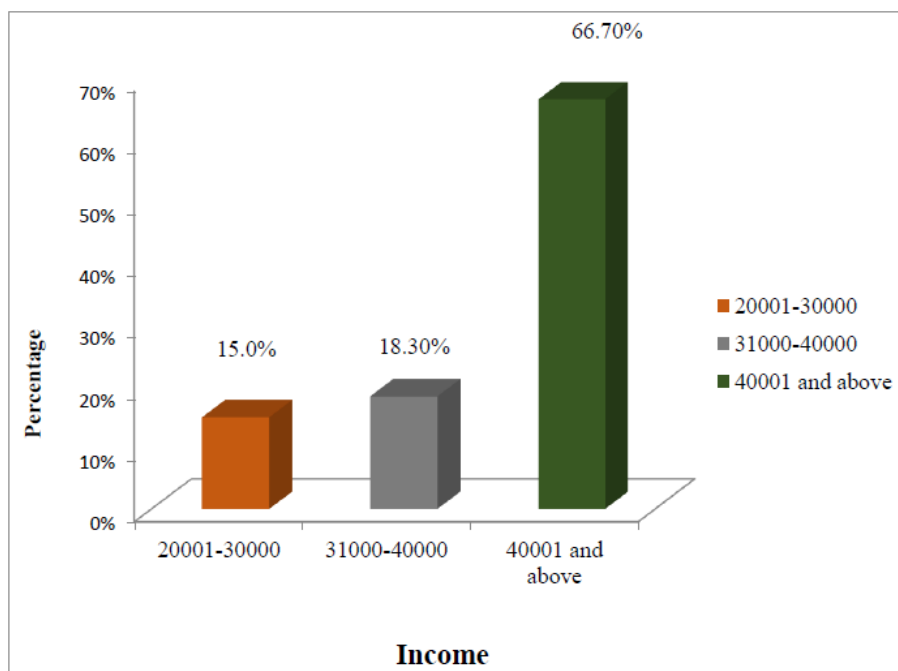
Figure 6: Cone diagram shows that percentage distribution of the sample according Area of residence (n=60).

Figure 6 shows that 40% of the samples are residing at Panchayath, 38.3% of the samples are residing at corporation and 21.70% are residing at Muncipality.

Table 4: Frequency and percentage distribution of sample according to the Main source of information regarding WIFS (n=60).

Main source of information regarding WIFS	Frequency (f)	Percentage %
Mass Media	16	26.7
Health Professionals	10	16.7
Friends	16	26.6
Nil	18	30.0

Table 4 shows that 30% samples were not heard about WIFS, 26.7% knows from mass media, 16.7% knows from health professionals, and 26.6% knows from friends.

SECTION II
Description of knowledge score of school teachers regarding Weekly Iron Folic acid Supplementation Programme
This section deals with the knowledge scores of school teachers regarding Weekly Iron Folic acid Supplementation Programme. Knowledge of 60 school teachers were assessed using structured knowledge questionnaire and were analyzed using descriptive statistics.
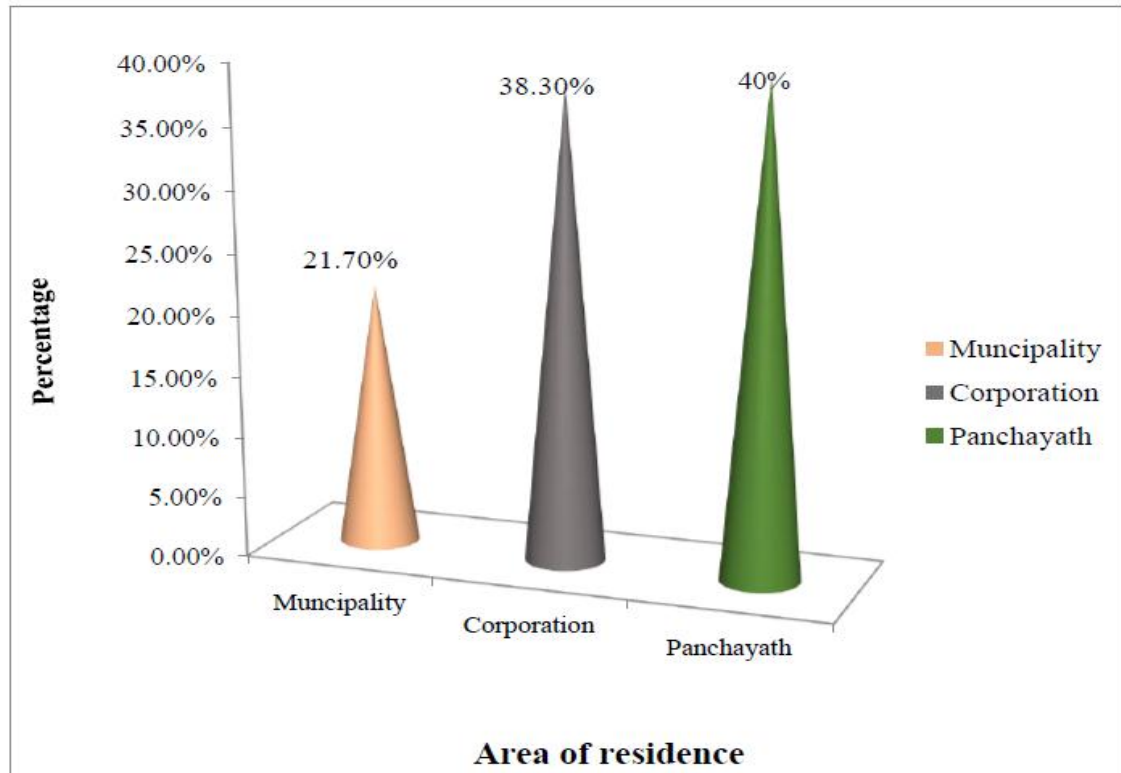
Figure 7: Cylindrical diagram showing percentage distribution of pre test level of knowledge among school teachers.

Figure 7 shows that before conducting structured teaching programme, more than half of the samples had moderate knowledge (66.7%), less than half of the subjects had poor knowledge (33.3%) and none of the samples had high knowledge.
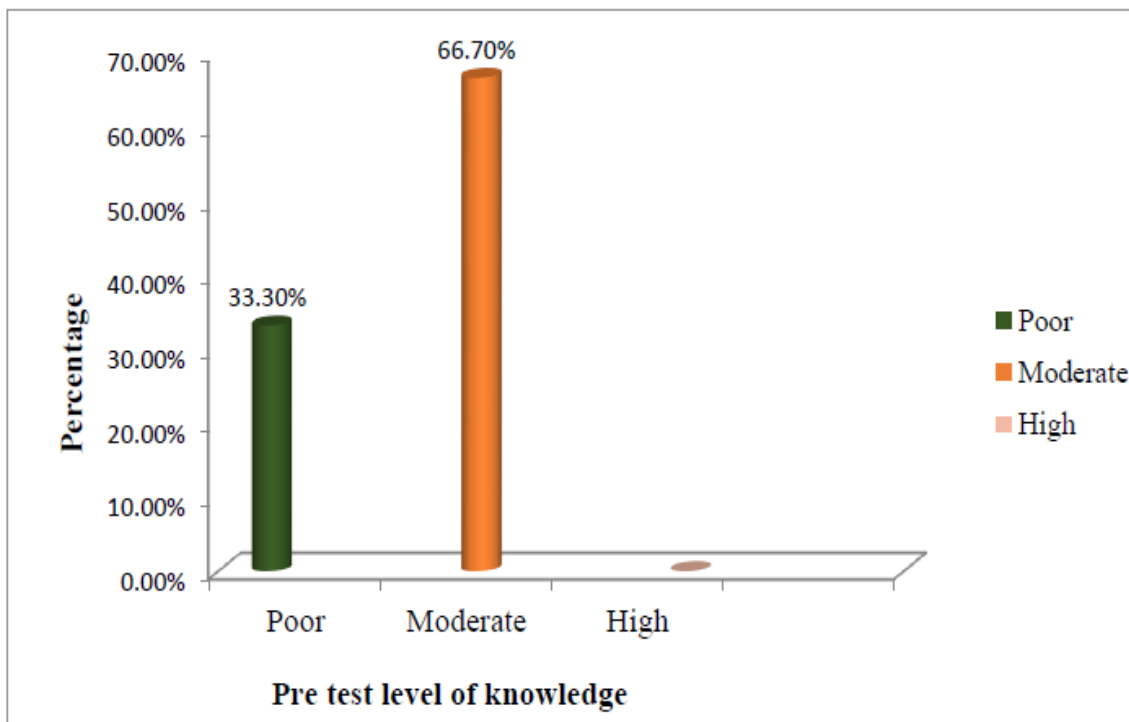

Figure 8: Bar diagram showing percentage distribution of post test level of knowledge among school teachers.

Figure 8shows that after conducting structured teaching programme, more than half of the samples had high knowledge (58.3%), less than half of the subjects had moderate knowledge (41.7%) and none of the samples had poor knowledge.
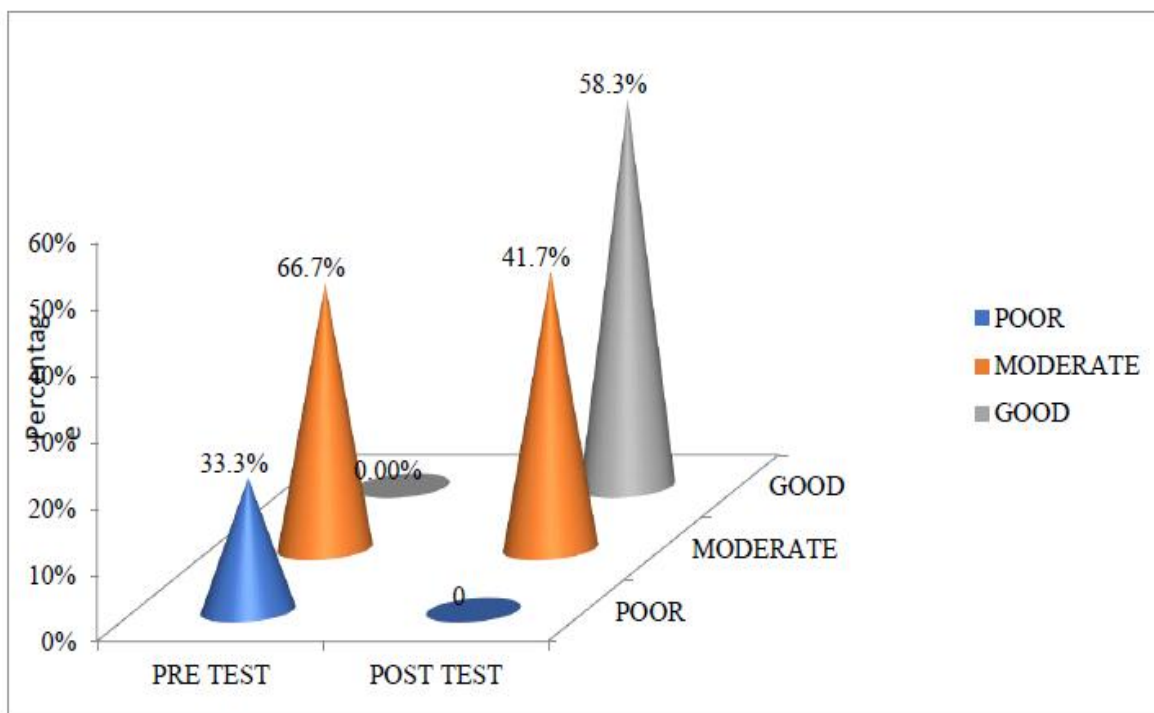

Figure 9: Cone diagrm showing percentage distribution of the sample according to their Pre test and Post test knowledge scores

The figure 9 shows that In pre test 0% of the school teachers had good knowledge, 66.7% had moderate knowledge and 33.3% had poor knowledge. But in post test 58.3% had good knowledge, 41.7% had moderate knowledge and 0% had poor knowledge.

RESULTS

The results of the study were presented under the following sections:

Section 1: Description of socio demographic variables of 60 school teachers who attended structured teaching programme
➢ In this study, according to the age 36.7% teachers belongs to 41-50 years,31.7% belongs to 31-40 years, 16.6% teachers belongs to 20-30 years and 15% teachers belongs to 51 years and above.
➢ According to the gender 71.7% were females and 28.3% were males
➢ Based on educational status 65% were Post graduate and 35% were Graduate
➢ According to marital status 95% were married and 5% were un married
➢ In the view of Income 66.7% had 40,001 and above income, 18.3% had income between 30001-40000 and 15% had income between 20001-30000.
➢ Considering the section of teaching 58.3% are teaching in high school section, 23.3% were

teaching in Higher secondary section and 18.3% were teaching in Upper primary section.
➢ As per area of residence 40% were residing in Panchayath, 38.3% were residing in Corporation and 21.7% were residing in Municipality.
➢ Considering the main source of information regarding WIFS 30% had not heard about WIFS, 26.7 % heard from mass medias, 16.7% knew from health professionals, and 26.6% were heard from friends.

Section II
Assessment findings of knowledge score of school teachers regarding Weekly Iron and Folic acid Supplementation Programme before structured teaching programme
The findings of the study indicates that 33.3% had poor knowledge, 66.7% had moderate knowledge scores in the pre test. The pre test knowledge score of school teachers showed range of 16 with mean 15.4 and standard deviation 4.0.

Section III: Effectiveness of structured teaching programme on knowledge of school teachers regarding Weekly Iron and Folic acid Supplementation Programme
The findings of the study reveals that 58.3% had high knowledge, 41.7% showed moderate knowledge and 0% had poor knowledge in the post test. The post test

knowledge score ranged from 10 with mean of 23.4 and standard deviation 2.5. The study results demonstrated a significant increase in post test knowledge score with 't' value of (t = 16.86) at 0.01 level of significance. The null hypothesis (H0) was rejected and research hypothesis was accepted. Hence, the structured teaching programme was effective in increasing the knowledge of school teachers.

Section IV: Association between pre test knowledge scores with selected demographic variables
Findings of the present study showed that the chi-square value reveals that the calculated chi- square values were lesser than the table values. Hence null hypothesis was accepted and research hypothesis was rejected. Findings showed that there was no significant association between the pre test level of knowledge and selected socio demographic variables. Hence it can be concluded that the level of knowledge was not influenced by any of the socio demographic variables such as Age, Sex, Marital status, Educational status, Income, Section of teaching, Area of residence and Main source of information.

Section III
Table 5: Effect of structured teaching programme on knowledge of school teachers regarding Weekly Iron Folic acid Supplementation Programme (n=60).

Knowledge	Mean	SD	N	Mean Difference	Paired t	p
Pre test	15.4	4.0	60			
				8.0	16.86**	0.00
Post test	23.4	2.5	60			

** Significance at the level 0.01

The above table shows that the calculated paired 't' value for the pre test and post test knowledge score is 16.86 which is greater than the table value at 0.01 level of significance and there is significant difference in the mean post test knowledge score. The research hypothesis is accepted. Hence, this indicate that the structured teaching programme is effective in improving the knowledge of school teachers.

SECTION IV
Table 7: Association between pre test knowledge scores with selected sociodemographic variables.

Demographic variables	χ^2	df	p value	Inference
Age	0.97	3	0.61	NS
Sex	0.16	1	0.685	NS
Educational status	0.33	1	0.16	NS
Marital status	0	1	1.00	NS
Income	0.06	2	0.971	NS
Section of teaching	0.23	2	0.891	NS
Area of residence	3.85	2	0.146	NS
Main source of information	7.13	3	0.068	NS

** NS – Not Significance at 0.01 level

Data represented in table 7 reveals that the calculated chi-square values were lesser than the table values. Hence null hypothesis was accepted and research hypothesis was rejected. Findings showed that there was no significant association between the pre test level of knowledge and selected socio demographic variables. Hence it can be concluded that the level of knowledge was not influenced by any of the socio demographic variables such as Age, Sex, Marital status, Educational status, Income, Section of teaching, Area of residence and Main source of information.

Summary
The findings of the research study shows that structured teaching programme was effective in improving the knowledge of school teachers regarding Weekly Iron Folic acid Supplementation Programme.

DISCUSSION, SUMMARY AND CONCLUSION

Discussion

The present study was intended to assess the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers in selected schools at Trivandrum District.

The current study utilizes a pre experimental one group pre test post test design as the research design. The study findings reveals that school teachers have improved in their knowledge regarding Weekly Iron and Folic acid Supplementation Programme. Therefore they can act as to prevent Iron deficiency anaemia in future generations.

Discussion of findings with other studies based on objectives

Assess the knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers

The finding of the present study showed that before conducting structured teaching programme 66.7% had moderate knowledge and 33.3% had poor knowledge regarding Weekly Iron and Folic acid Supplementation Programme. Based on the in depth categorical review regarding the Weekly Iron and Folic acid Supplementation Programme a study done by Dr. Arkaprabha Sau et al regarding the assessing the involvement of teachers into the programme the researcher found that only 80% among them are know about this programme but not indepthly, only 40% of them correctly knew the composition of the Iron folic acid tablet. Only 28% of the teachers encourage the students to take food rich in vitamin-c like lemon, amla, orange etc and only 18% of them discourage the students to drink tea or coffee within an hour of consuming main meals and IFA tablet. While comparing the percentage in present study tool was developed based on the administration, effectiveness, and knowledge. Here it is revealed that the indepth knowledge is lacking regarding the Weekly Iron and Folic acid Supplementation Programme in pre test.

Assess the effectiveness regarding Weekly Iron and Folic acid Supplementation Programme after a training

The finding of the present study revealed that after structured teaching programme the knowledge level of teachers improved as 58.3% had high knowledge, 41.7% had moderate knowledge and 0% had poor knowledge. A study done by Vir et al from Public Health Nutrition and Development Centre reveals that Weekly iron-folic acidsupplementation in small-scale research trials and as administered in institutions has been demonstrated to be effective in reducing anaemia in adolescent girls with counselling held in the institutions. After counselling the overall prevalence of anaemia was reduced from 73.3% to 25.4%. Counseling on the positive effects of regular weekly iron-folic acid intake contributed to a high compliance rate of over 85%. So it can reduce the prevalence of anaemia by giving counselling to the students by the teachers regarding effectiveness of Weekly Iron Folic acid Supplementation and implementing the programme. Because teachers are the implementers of this programme.

Association between the pre test knowledge scores regarding Weekly Iron and Folic acid Supplementation Programme with selected socio demographic variables

The finding of the present study showed that the calculated chi-square values were lesser than the table values. Hence null hypothesis was accepted and research hypothesis was rejected. Findings showed that there was no significant association between the pre test level of knowledge and selected socio demographic variables. Hence it can be concluded that the level of knowledge was not influenced by any of the socio demographic variables such as Age, Sex, Marital status, Educational status, Income, Section of teaching, Area of residence and Main source of information.

For supporting the findings related to the association of pre test knowledge with the selected socio demographic variables, a comparative study done by Vinod to assess the knowledge of urban and rural school girls regarding anaemia in shimla which also assess the knowledge of school teachers regarding anaemia reveals that there was no significant association between the mean pre test knowledge score with demographic variables such as source of knowledge.

Summary

Weekly iron folic acid supplementation programme will ensure to decrease the prevalence of anaemia among school going adolescents. In school the main role models are teachers. Teachers should establish awareness regarding the programme and therefore implement this programme in schools by giving immense support to the adolescents.

A Quantitative study was conducted to assess the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers in selected schools at Trivandrum District. The objectives of the study were to assess the pre test knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers, to evaluate the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers, to find out the association between the pre test knowledge scores regarding Weekly Iron and Folic acid Supplementation Programme with selected socio demographic variables. Non probability- convenient sampling technique was used to select 60 school teachers for the study. The tools used for data collection were demographic data, structured knowledge questionnaire, and structured teaching programme. The mean post test

knowledge score 23.4 with standard deviation 2.5 was significantly higher than the mean pre test score 15.4 with standard deviation 4.The study showed that there was improvement in the knowledge of school teachers after conducting structured teaching programme and thus structured teaching programme was statistically significant at 0.01 level (t= 16.86, p<0.00). There was no significant association between mean pre test knowledge score with sociodemographic variables. Hence the study suggested that structured teaching programme was effective in improving the knowledge of school teachers regarding Weekly Iron and Folic acid Supplementation Programme.

CONCLUSION
The study related to WIFS programme was very innovative because it mainly focuses on the future aspects. The knowledge regarding school teachers regarding WIFS programme was very much needed to enhance the reduction of iron deficiency anaemia among school going childrens. Now a days the childrens are following new life styles and new food strategies that will cause deficiency of iron. In school teachers should counsel the students regarding the WIFS programme in order to implement the programme. So in this study structured teaching programme were very much effective among school teachers in order to health educate the students.

Nursing implications
The present study findings provided evidence for the effectiveness of structured teaching programme on knowledge regarding Weekly Iron and Folic acid Supplementation Programme among school teachers The findings of the study have implications in the field of nursing practice, nursing education, nursing administration, and nursing research

Nursing Practice
• Prevention of Iron deficiency anaemia is a common problem in adolescents in order to decrease the effects of anaemia WIFS programme had more significance.
• Study recommends ongoing education for teachers will improve the consumption of iron tablets in order to decrease the prevalence of anaemia among adolescents
• Majority of school teachers are not aware about the implementation of theprogramme.
• But after the structured teaching programme teachers were well knowledgeble to handle the situation.
• Nurse have an expanded role of teacher and as a teacher nurse can help the people to learn about health and they need to restore to maintain health.

Nursing Administration
The present study findings can help the nurse administrators to plan various health education programmes to make the school teachers aware regarding the WIFS programme in order to reduce the prevalence

of anaemia.

Nursing Education
Nurse educators should prepare the strategies which will help to improve the knowledge of school teachers regarding WIFS programme by using various methods of audio visual aids in order to early detection and prompt management of anaemia among adolescents.

Nursing Research
• The findings of this study can be a background for future research activities.
• More studies can be conducted in this area to determine the effectiveness regarding WIFS programme.

Limitations
• The study was limited to selected schools at Trivandrum.
• Generalization of the study was limited because of small sample size.

Recommendations
• A similar study can be conducted comparitavely by the government and public aspects also related to the academic aspects.
• A self instructional module can be developed based on learning needs of teachers.
• A study can be conducted on peer to peer education in similar settings.
• An experimental study can be conducted with a control group

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