



REVIEW ARTICLE

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## A STUDY TO EVALUATE THE EFFECTIVENESS OF SELF INSTRUCTIONAL MODULE (SIM) ON KNOWLEDGE REGARDING SELECTED WORK-RELATED HEALTH PROBLEMS AMONG SCHOOL TEACHERS AT SELECTED SCHOOLS, VIZIANAGARAM

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### ABSTRACT

**Background and purpose of the study:** Work-related health problems are common among school teachers. There are various work-related health problems among them low back pain, hypertension and Varicose vein are most evident. School teachers should be educated regarding the health problems to prevent further complications. So the researcher found it relevant to evaluate the effectiveness of Self Instructional Module on school teachers regarding selected work-related health problems among school teachers in selected schools at Vizianagaram. **Objectives**(1) assess the existing level of knowledge regarding selected work-related health problems among school teachers. (2) evaluate the effectiveness of self-instructional module on knowledge regarding selected work-related health problems among school teachers by comparing mean pre-test and mean post-test knowledge scores. (3) determine an association between the mean pre-test knowledge scores of school teachers regarding selected work-related health problems with their selected socio-demographic variables **Design:** A quantitative, pre-experimental one group pre-test post test design was selected for the study. **Subjects:** The participants were 60 school teachers from selected schools at Vizianagaram. **Sampling Technique:** A non-probability purposive sampling technique was used to select the samples for study. **data collection tool:** A structured knowledge questionnaire was used to collect data from the participants. **Data Analysis:** The data obtained will be analyzed using both descriptive and inferential statistics on the basis of objectives and hypothesis of the study. **Results:** In the pre test, 30% school teachers had adequate knowledge, 27% had moderately adequate knowledge and 43% had inadequate knowledge. In the post test, 73% school teachers had adequate knowledge, 27% had moderately adequate knowledge and none had inadequate knowledge. The obtained "t" value is 14.32. This shows the effectiveness of SIM. **Conclusion:** In pre-test 27% had moderately adequate knowledge whereas in the post test 73% had adequate knowledge. Thus, this study indicates that the Self Instructional Module was effective in enhancing the knowledge of school teachers regarding selected work-related health problems.

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## INTRODUCTION

"It is sacred duty to attend to our health, and arouse others to their duty"

E.G. White

Every nation gives priority to their schools and the teachers. Teachers are not limited to only teaching in classes. In addition, they have to prepare for lessons, assess students' exercises, carry out guidance work, perform nonteaching

clerical duties, prepare for external school reviews, participate in continuing professional development, satisfy requests from management, etc. As a result, teachers may suffer with mental and physical health problems due to the variety of job functions. Studies have reported that teachers were subjected to heavy occupational stress that could adversely affect their mental health status. In addition to occupational stress, teachers, in the course of their careers, face physical health problems that were caused or worsened by their jobs as well as past work<sup>1</sup>. Occupational health hazards can threaten the health of many workers. In some cases, materials involved in a

person's job may result to a long term damage that appears only after many years. Teachers and researchers face a series of problems within the school and the same at homes as a result of school associated causes. Since teachers are powerful stake holders of the school, many teachers and researchers spend their life in such hazardous work environment, which causes a lot of adverse effect on their health.<sup>2</sup> Teachers have several sources of stress in the workplace. They include increased class sizes, student performance objectives, lack of control over work hours and methods, lack of student motivation, difficulty in working with parents, lack of professional recognition and inadequate salary. Although everyone reacts to stress differently, too much stress can affect mood, behaviour and physical health. Stress can lead to headaches, sleep problems, fatigue, muscle tension, upset stomach, chest pain and muscle pain. It can also cause anxiety, irritability, depression, anger, drug or alcohol abuse, social withdrawal and changes in appetite.<sup>3</sup> Millions of workers spend majority of the working day on their feet and many hours in static positions. Standing uses 20% more energy than sitting and because human bodies are not designed to stand continuously at work. Prolonged standing can lead to tiredness, loss of concentration and increased health risks. One of the most important conditions that results due to prolonged standing is varicose veins. Severe varicose veins can have an impact on the lives of the people especially the teachers, nursing staffs, flight attendants, dental staff, and traffic police, bar workers, postal workers, construction workers and bank staff.<sup>4</sup> A cross sectional study was conducted on the Subjective Health Complaints (SHC) of school teachers at Hong Kong. The result showed that most frequently reported health complaints among the teachers were shoulder pain, neck pain, lower-back pain, stress, varicose vein, tiredness, eyestrain, anxiety, sleep problems, voice disorder, headache, and cold/flu. With the exception of the category of pseudo neurological complaints, primary school teachers showed a statistically higher prevalence in reporting problems in 6 of 7 subscales.<sup>5</sup>

**Need for the Study:** The occupational health hazards are common in many occupation and occupational fields. They affect numerous numbers of workers among them, teaching occupation has got several occupational health hazards. The hazards are commonly met by all teachers. Occupational illnesses are not easily identified as injuries and many go unreported especially when the employer or worker is unable to link exposure with the symptoms the employee's exhibit.<sup>11</sup> Most teaching staff spend most of their working hours each day on their feet teaching or lecturing. Due to the seating arrangement in the classroom, on lifting and handling, working with computers, health and safety when using computers at home and inhaling certain chemicals from laboratory are also at greater risk of health problems including- varicose veins, poor circulation, corns, painful swelling in legs, foot problems, joint damage, low back pain, and specific problems in the case of pregnant women, including pre-term birth, spontaneous abortions and slower foetal growth rates.<sup>11</sup> A descriptive research using cross sectional study was conducted to examine the mental, physical, and work-related health of Flemish secondary school teachers and identify the impact on those health variables by demographic and teaching-related factors. Work-related factors such as job satisfaction, occupational stress, and absenteeism were also collected. Teachers' physical health was strongly related to their mental health ( $r=0.57$ ), and moderately related to job satisfaction ( $r=0.31$ ) and to

absenteeism ( $r=-0.28$ ). Teachers' mental health was strongly related to job satisfaction ( $r=0.52$ ) and slightly related to absenteeism ( $r=-0.22$ ). Flemish secondary school teachers have poorer perceived mental and physical health than a general healthy population. This difference is particularly evident among female teachers, who reported lower perceived health, more occupational stress, and more absent days compared to their male colleagues<sup>12</sup>.

The Musculoskeletal Disorders (MSD) represents one of the most common and important occupational health problems in the teaching profession, which although long neglected, has attracted increasing concern in recent years. The prevalence of musculoskeletal disorders among Iranian high school teachers showed symptoms causing work interference in the last 12 months and were reported by 35% male and 15% female participants at baseline. Low back symptoms were the most common cause of work impairment (male = 69%, female = 77%), followed by pain in the neck. It shows high prevalence of musculoskeletal problems which prevent teachers from doing their jobs, resulting absenteeism and may decrease work productivity.<sup>13</sup> From the above studies and statistics it is clear that musculoskeletal disorder, varicose vein, and hypertension are most common among teachers. Since teachers spend most of the time standing they are more prone to get musculoskeletal disorder and varicose vein. And stress is common among them because of the work environment. Studies show that teachers have varying impact on their health condition. So there is a need to educate the teachers regarding their physical problems in order to prevent it. This urged the investigator to take up the present study with an intention to provide SIM regarding selected work-related health problems among school teachers.

**Statement of the Problem:** "A study to evaluate the effectiveness of Self Instructional Module (SIM) on knowledge regarding selected work-related health problems among school teachers at selected schools, Vizianagaram."

## Objectives of the Study

The objectives of the study are to

- Assess the existing level of knowledge of school teachers regarding selected work-related health problems.
- Evaluate the effectiveness of self-instructional module on knowledge regarding selected work-related health problems among school teachers by comparing mean pre-test and mean post-test knowledge scores.
- Determine an association between the mean pre-test knowledge scores of school teachers regarding selected work-related health problems with their selected sociodemographic variables.

## Hypothesis

The following hypothesis will be tested at 0.05 level of significance

**H<sub>1</sub>:** The mean post-test knowledge scores of school teachers regarding selected Work-related health problems is significantly higher than their mean pre-test knowledge scores.

**H<sub>2</sub>:** There is a significant association between the mean pre-test knowledge scores of schoolteachers regarding selected work-related health problems with their selected socio demographic variables.

### Research Variables

**Independent variable:** In this study the independent variable refers to self instructional module on selected work-related health problems.

**Dependent variable:** In this study the dependent variable is knowledge of school teachers regarding selected work-related health problems.

### Operational Definition of Terms

**Evaluate:** It refers to the assessment of knowledge of school teachers regarding work-related health problems.

**Effectiveness:** It refers to the extent to which the self-instructional module produces the intended results as measured in terms of significant gain in post-test knowledge scores regarding selected work-related health problems of school teachers.

**Self-instructional modules:** It is a systematically organized instructional material prepared by the investigator to impart knowledge to school teachers regarding various aspects of work-related health problems. In this study it includes information regarding definition, causes, signs and symptoms, early detection and prevention of work related health problems.

**Knowledge:** It refers to the correct responses given to the items in the tool by the School teachers regarding selected work-related health problems.

**Work-related health problems:** In this study it refers to an illness/problems that occurs to the school teachers due to their working conditions such as musculoskeletal disorder, varicose vein and hypertension.

**School teachers:** In this study it refers to the teaching staffs both men and women working in selected primary, secondary, and higher secondary schools, Vizianagaram.

**Selected socio demographic variables:** In this study it refers to age, gender, religion, educational status, area of work, total years of experience, number of classes taken/day and source of information regarding work-related health problems among school teachers.

### Assumptions

#### The study is based on the following assumptions

- The teachers may have high risk of developing musculoskeletal disorder, varicose vein and hypertension.
- The teachers may have some knowledge regarding musculoskeletal disorder, varicose vein and hypertension.
- Adequate knowledge regarding work-related health problems will help to prevent the complications associated with work-related problems.

- Self-instructional module is an accepted teaching strategy that can improve the knowledge of school teachers regarding work-related health problems.

### Delimitations

#### The study is delimited to

- School teachers working in selected schools at Vizianagaram.
- 60 school teachers only.

### Review of Literature

The literature reviewed is organized and presented under the following headings:

**Section I:** Studies related to prevalence of selected work-related health problems

**Section II:** Studies related to causes, risk factors and signs and symptoms

**Section III:** Studies related to management and prevention

**Section IV:** Studies related to knowledge of teachers

**Section V:** Studies related to effectiveness of Self Instructional Module.

#### Section I - Studies related to prevalence of selected work-related health problems

A cross-sectional study was conducted to investigate the point prevalence of upper back pain (UBP) and lower back pain (LBP) in Jordanian school teachers and to estimate the work-related reported disability. Results showed pain with limitation was 55% for males and 49% for females. Pain without limitation was associated with female gender (odds ratio (OR) = 5.26). Among subjects with pain, limitations were associated with male gender (OR = 2.34), teaching in public school (OR = 3.18), and pain in both upper and lower back (OR = 4.64). It concluded that pain and occupational limitations are highly prevalent in schoolteachers in Jordan.<sup>24</sup> A cross-sectional study was conducted among 3100 teachers in Botswana between July and November 2012. It included low back pain information, demographic data, lifestyle, work-related characteristics and psychosocial factors. The Result showed that the 12-month prevalence of LBP was 55.7%, with 67.1% of them reporting minimal disability. The results of logistic regression analysis revealed that female gender [OR: 1.51, 95% CI: 1.14-2.00] and previous back injury [OR: 9.67, 95% CI: 4.94-18.93] were positively correlated to LBP. Awkward arm position [OR: 1.81, 95% CI: 1.24-2.62] and high psychological job demands [OR: 1.40, 95% CI: 1.02-1.93] were also significantly associated with LBP. It concluded that prevalence of LBP appears to be high among school teachers in Botswana a greater emphasis should now be placed on ergonomics education, regular physical exercise and occupational stress.<sup>25</sup>

#### Section II - Studies related to causes, risk factors and signs and symptoms:

A cross sectional study was conducted to find out the prevalence of low back pain and the associated risk factors among 260 Secondary School Teachers in the Bentong, Pahang. A modified Nordic questionnaire was used to assess the body parts with musculoskeletal disorders and their perceptions on health risks at work. The number of subjects who are included in the study were 253. Out of 253

subjects (97.3%), 158 subjects complaints of having low back pain (60.8%). Female subjects were having higher complaint of pain compare to male subjects (78.8% vs. 40.7%). The middle age group are having more pain compare to the younger age group who have lesser occurrence of pain. School teachers should take proper measures to prevent low back pain by proper back support and enough rest.<sup>31</sup> A cross sectional study was conducted to determine the prevalence of low back pain and the associated risk factors among 272 primary school teachers in the Klang Valley, Malaysia. Information on low back pain was assessed using a Nordic Questionnaire, while the General Health Questionnaire was used to determine the mental health status. Result showed that prevalence of low back pain was 40.4% among respondents. Lifting load (28.0%) was ranked as the main factor which contributed to low back pain, followed by prolonged sitting (25.2%). Poor mental health (OR 1.11, 95% CI 1.06-1.15) was the risk factor to low back pain. Teachers with poor mental health status had higher risk of developing low back pain. Emphasis should be given for maintaining correct posture and adequate rest among the school teachers.<sup>33</sup>

**Section III- Studies related to management and prevention:** A cross sectional study was done on prevention and management of Musculoskeletal Pain (MSP) among 250 school teachers in Egypt. Tools for data collection included anthropometric measurements, a self-administered bio psychosocial MP assessment questionnaire. Results revealed high prevalence of MSP as reported by teachers were Low back pain (41%) followed, by neck (20%) and shoulder pain (15%). Meanwhile, 84% of teachers believed that the experience of MSP have affected their profession. Pain among teachers was associated with personal factors such as age, education, body mass index and smoking respectively. Significant relationships were also found between occupational variables such as, job demands, job duration and job satisfaction respectively. The findings draw attention toward the need to adopt public policies to improve the working conditions and alleviate suffering of teachers and to test the recommended intervention.<sup>42</sup> A self-controlled longitudinal study was done to assess the effects of an educational program for the prevention of work-related musculoskeletal disorders among school teachers. 350 (70.0%) of teachers from four schools were assigned to receive eight weeks of intervention. Two post-tests were then administered to the participants to identify changes at six and 12 months after intervention. The follow-up rate was 93.7% (328/350) at six months after intervention, and 90.9% (319/350) at 12 months after intervention. The awareness rate, attitude and health behaviour improved. The prevalence of work-related musculoskeletal disorders for neck, shoulder, upper and lower back pain, or discomfort were lower than before intervention ( $P < 0.05$ ). Occupational health education lectures, on-site ergonomics training, publicity brochures and posters showed a positive effect on prevention and control of the occurrence of work-related musculoskeletal disorders in teachers.<sup>43</sup>

**Section IV- Studies related to knowledge of teachers:** A prospective cross sectional descriptive study design was used to determine the knowledge, attitudes and practices of 130 hypertensive patients with respect to importance of lifestyle modification in the management of hypertension. Result showed out of the 130 participants, majority (57.7%) were females. 80% of participants said they avoid salt in their diet and 15% of them drink alcohol. 59.2% know the ideal blood

pressure and 67.7% believe the fact that exercise reduces blood pressure. Only 1.5% of them were smoking and large majority (94.6%) were having salt restriction. Majority (90.7%) of them reported that health care provider taught them about danger of too much salt. The results of this study indicates that although patients do receive advice on lifestyle modification, it was not enough and effective in changing patient behaviour, knowledge and practice. Therefore, clinicians should give adequate time to provide relevant information on the value of life style modification in the control of their blood pressure.<sup>47</sup> A cross-sectional study was conducted to know the knowledge of controlled and uncontrolled hypertension among inpatients and outpatients in Pakistan, aged > 18 years were included. Patients were categorized into 2 groups: controlled and uncontrolled hypertension based on their initial BP readings. A total of 650 participants were approached and consented 447 were found eligible. Controlled hypertension was present in 323(72.3) and uncontrolled hypertension was present in 124(27.4). On comparison of knowledge as a composite score between uncontrolled and controlled hypertensive; Mean (SD) score was 21.85(4.74) v18.67 (4.70) ( $p$  value: < 0.001). Knowledge about hypertension in hypertensive patients is not adequate and is alarmingly poor in patients with uncontrolled hypertension. More emphasis needs to be made on target blood pressure and need for taking antihypertensives for life to patients by physicians.<sup>48</sup>

**Section V- Studies related to effectiveness of Self Instructional Module:** A quantitative pre experimental study was done in on effectiveness of Self Instructional Module (SIM) on knowledge regarding the prevention and management of varicose veins among teachers in selected schools of Udupi District, Karnataka. The study results showed that life time prevalence of varicose veins which was 18% for men and 32% for women. About 25% of men and 41% of women who reported varicose veins had received treatment. The study concluded that prevalence of varicose veins was high in the subjects and knowledge and preventive measures were required because treatment alone seems to be inadequate in control of varicose veins.<sup>4</sup> A study was conducted to evaluate the effectiveness of SIM (Self- instructional module) on knowledge about endotracheal tube suctioning among 50 staff nurses in selected hospitals, Jalandar, Punjab. The findings of the study revealed that the pre test mean knowledge score of  $w16.92 \pm 3.47$  &  $15.56 \pm 3.13$  respectively. The mean post test knowledge score in experimental & control group were  $20.52 \pm 3.29$  &  $16.16 \pm 2.83$ . It is indicated that there was significant difference in pre and post test interventional knowledge score and skills score among staff nurses working in neonatal intensive care at 0.05% level of significance. So, the study concluded that self instructional module had significant effect on knowledge and skills regarding endotracheal suctioning among staff nurses working in neonatal intensive care unit.<sup>51</sup>

## METHODOLOGY

The steps which were undertaken to conduct the study include: research approach, research design, research setting, population, sample and sampling technique, development and description of tool, procedure and technique of data collection, pilot study and a plan for data analysis.

**Research Approach:** It helps the researcher to know what data to collect and how to analyse it. It also suggests the

possible conclusions to be drawn from the data. In view of the nature of the problem selected for the present study and the objectives to be accomplished, a quantitative, evaluative approach was considered appropriate for the present study, since the investigator has aimed to evaluate the effectiveness of SIM on knowledge regarding selected work-related health problems among schoolteachers.

**Research Design:** The research design used for study was pre-experimental one group pre testpost test design

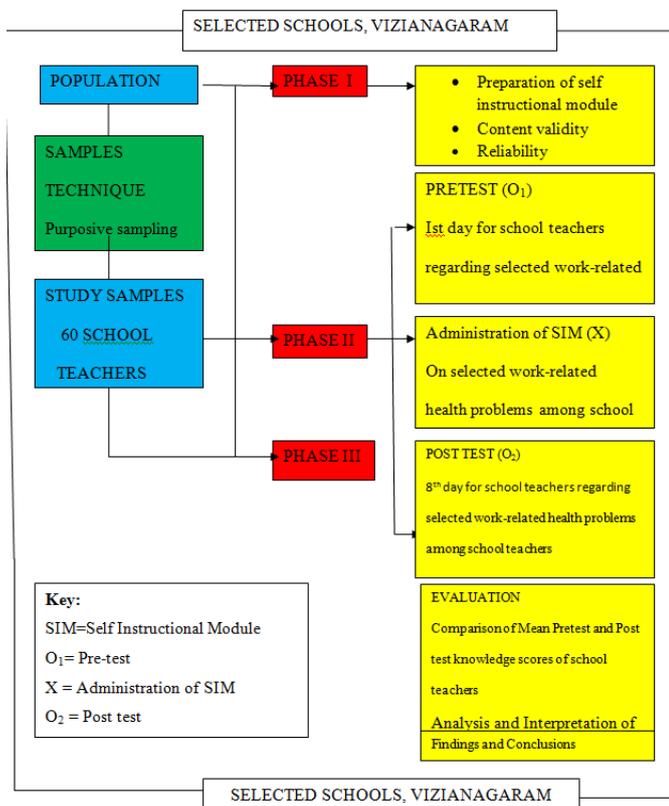


Fig. 2. Schematic representation of study design

**Variables:** Variables are qualities, properties or characteristics of the person, things or situation that change or vary. The variables included in this study are independent and dependent variables.

**Independent variable:** Independent variable is believed to cause or influence the dependent variable. In this study, the independent variable refers to the administration of Self Instructional Module to improve the knowledge of School teachers regarding selected work-related health problems.

**Dependent variable:** It is the outcome or response due to the effect of the independent variable, which the researcher wants to predict or explain. In this study, the dependent variable is the knowledge scores of school teachers regarding selected work-related health problems.

**Attribute variable:** Attribute variables are the characteristic or elements of human subjects that are used to control the decided sample. These variables are also referred as socio-demographic variables. In the present study, the attribute variables or socio-demographic variables are age in years, gender, religion, educational qualification, area of work, total years of teaching experience and source of information related to work-related health problem.

**Setting of the Study:** The setting is the general location and condition in which data collection takes place in the study. The study was conducted in schools. The reason for selecting these school was the investigator's interest in imparting knowledge to school teachers. Availability of the required sample was also considered while selecting the study group.

**Population:** The population of the present study includes school teachers who are working in selected schools, in Vizianagaram.

**Sample and Sample size:** The sample used for this study was 60 school teachers who fulfil the inclusion and exclusion criteria.

**Sampling Technique:** The investigator had utilized a non probability purposive sampling technique. The rationale for selecting this sampling technique is based on the availability of the samples.

### Criteria for the Selection of Sample

#### Inclusion Criteria

The study includes "school teachers" who are:

- Available at the time of data collection.
- Willing to participate in the study.
- Working in primary and secondary schools

#### Exclusion Criteria

The study excludes "school teachers" who

- Have attended any workshop/In-service education programme regarding work-related health problems within a period of six months.
- Have been diagnosed and under the treatment for musculoskeletal disorder, varicose vein and hypertension.

**Description of the Tool:** To meet the objectives of the study, the investigator had prepared a structured knowledge questionnaire to identify the knowledge of school teachers regarding selected work-related health problems among school teachers.

**Description of the Tool:** The tool was organized in two parts:

**Part I: Socio-demographic proforma:** This section consist of 8 items such as age in years, gender, religion, educational qualification, area of work, total years of experience, number of classes taken/day and source of information related to work-related health problems.

**Part II: structured knowledge questionnaire:** A structured knowledge questionnaire was prepared, based on the review of the literature and in consultation with experts to assess the knowledge regarding selected work-related health problems among school teachers. The structured knowledge questionnaire consisted of 32 multiple choice questions in 4 areas to assess the knowledge of school teachers regarding selected work-related health problems.

#### There are 4 subsections for this part

**Section A:** It consists of 5 items related to general information about selected work-related health problems.

**Section B:** It consists of 9 items related to Causes, risk factors and clinical manifestations about selected work-related health problems.

**Section C:** It consists of 6 items related to diagnostic evaluation and complications about selected work-related health problems.

**Section D:** It consists of 12 items related to prevention of selected work-related health problems.

**Scoring and Interpretation:** The questions were phrased in a multiple choice form with 4 options, three as distracters and one as correct response. The correct response was given a score of one and incorrect response as zero score. The maximum possible score is 32. The resulting knowledge score is graded as.

- |                                 |       |        |
|---------------------------------|-------|--------|
| • Adequate knowledge            | 25-32 | ≥75%   |
| • Moderately adequate knowledge | 17-24 | 51-75% |
| • Inadequate knowledge          | 0-16  | <50%   |

**Validity of the Tool and Sim:** Content validity refers to the degree to which an instrument measures what it is intended to measure.

Content validity refers to the degree to which an instrument measures what it is intended to measure. Content validity of the tool was ensured by 10 experts. The experts included 1 occupational specialist and 1 consultant physician and 8 nursing experts specialized in Medical Surgical Nursing. In the original tool there were 38 items, following the expert's opinions and suggestions, the items which had less than 70% agreements were deleted (6 items). The remaining items which had more than 70% agreements were modified. Items which had 100% agreements were maintained in the tool as it was originally stated.

**Reliability of the Tool:** The reliability of the measuring instrument is a major criterion for assessing quality and adequacy. The reliability of a research instrument is the degree of consistency with which it measures the attribute, it is supposed to measure the extent to which the same results are obtained at repeated administration of the instrument. In order to establish the reliability of the tool, it was administered to 6 school teachers in Lowry memorial high school, Vizianagaram. Split half method was used to test the reliability of the tool. The test was first divided into two equivalent halves and correlation for the half test was found by using Karl Pearson's correlation co-efficient formula and significance of correlation was tested. The reliability of the tool was observed and reliability was found, 'r' = 0.85. Hence the tool was found to be highly reliable.

**Pilot Study:** The pilot study is a smaller version of the proposed study conducted to refine the methodology. It is developed similar to the proposed study, using similar subjects, settings, treatment, method of data collection and analysis technique as used in main study. Pilot study was done to check the clarity of items in the tool and the feasibility in conducting the study. Pilot study was conducted from 1st to 8th February, 2017 in Lowry memorial high school, Vizianagaram. This was conducted after obtaining permission from the school principal. About 6 samples who fulfilled the inclusion criteria were selected by purposive sampling technique. At first complete instructions were given to the samples. A written consent was obtained from the samples for their participation in the study and Confidentiality was assured to the entire

samples. A pre test was conducted using the structured knowledge questionnaire, after the completion, SIM was distributed. On the 8th day a post test was conducted using the same structured knowledge questionnaire. The completed questionnaire was collected after an average time of 30 to 45 min.

- The collected data were analysed by using descriptive and inferential statistics. The significance of difference between pre test and post test scores was found by paired 't' test, the difference was found to be significant. This study was found to be feasible to conduct the main study. Following were the observation made and are presented as the findings of the pilot study.
- Majority of the respondents 1 (16.6%) were in age group in 21-30 years, 2 (33%) were in group of 31-40 years, 3(50%) were in the age group of 41-50 years respectively and there was none in the age group of above 50 years.
- In regard to gender, majority of the participants 6 (100%) were females and none was male.
- In regard to religion, 1 (16.6%) of the respondents were Hindus, 4 (66.6%) were Christian, none was Muslim and 1(16.6%) were other's specify.
- In regard to educational qualification, 3 (50%) of the participants held D.Ed, 2(33.3%) held B.Ed, none was M.Ed and 1(16.6%) were other's specify.
- In regard to area of work, majority of the respondents 4 (66.6%) were working in Primary school, 1(16.6%) were working in Middle school, 1(16.6%) were working in High school and none working in Higher secondary school.
- In regard to total years of teaching experience, majority 4 (66.6%) had 11 years and above experience, 2 (33.3%) had 6-10 year of experience, and none had 1-5 years and less then one year of experience
- In regard to number of classes taken/day majority 4(66.6%) had 8 hours, 2 (33.3%) had 7 hours and none of them worked for 6 and 5 hours.
- With regard to source of information majority 3(50%) got from friends, 1(16.6%) got from mass media, 2(33.3%) got from family members and none from in-service education.
- Based on overall mean of the pre-test knowledge scores of the school teachers regarding selected work-related health problems, it shows that participants had highest mean scores (46.6%) in the area of general information, followed by (43%) in the area of prevention followed by (42.55%) in the area of causes, risk factors and clinical manifestations. A mean percentage knowledge score (25%) was observed regarding diagnostic evaluation and complications of selected work-related health problems. Mean percentage aspect wise pretest knowledge shows that the respondents had inadequate knowledge in all the aspects regarding selected work-related health problems.
- With regard to post test knowledge level 6 (100%) of the respondents had adequate knowledge regarding selected work-related health problems. Based on overall mean of the post test knowledge scores of school teachers regarding selected work-related

health problems, it shows that participants had higher mean score (73.58%) in the area of prevention of selected work-related health problems, followed by (66.6%) in the area of general information about selected work-related health problems,

- Followed by (58.33%) in the area of diagnostic evaluation and complications and (55.55%) in the area of causes, risk factors and clinical manifestations. Mean percentage aspect wise post test knowledge scores shows that the respondents had adequate knowledge in all aspects regarding selected work-related health problems.
- To evaluate the effectiveness of Self Instructional Module for school teachers regarding selected work-related health problems, a paired 't' test was done. The obtained 't' value was 2.71 which is more than the table value 2.571 at  $p < 0.05$  level of significance. From this it can be inferred that SIM was effective in enhancing the knowledge of school teachers regarding selected work-related health problems

**RESULTS**

**Organization of Study Findings:** Both descriptive and inferential statistics were used to analyze the data. Analysis is organized under the following headings.

**Section I:** Description of socio-demographic variables in frequency and percentage.

**Section II:** Analysis and interpretation of Pre-test knowledge level of school teachers regarding selected work-related health problems.

**Section III:** Analysis and interpretation of Post-test knowledge scores of school teachers regarding selected work-related health problems.

**Section IV:** Analysis and interpretation of effectiveness of SIM by comparing mean pre-test and post-test knowledge scores regarding selected work-related health problems.

**Section V:** Analysis and interpretation of association between the mean pre-test knowledge scores of school teachers with their selected socio-demographic variables.

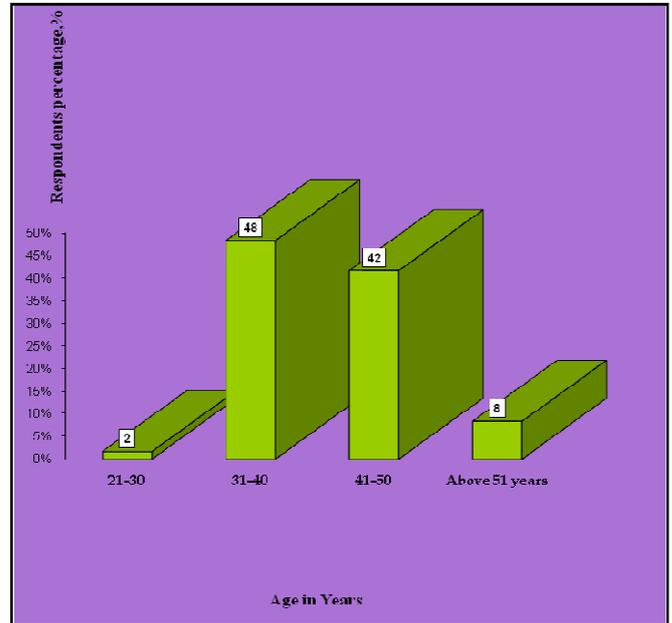
**Section I**

**Section I: Description of socio-demographic variables in frequency and percentage:** This section deals with distribution of participants according to their demographic characteristics. The obtained data on demographic profile are described under the following subheadings which include age, gender, religion, educational qualification, area of work, total years of working experience, and number of classes' taken per day and source of information. The data was analyzed by using descriptive statistics and are summarized in terms of frequency and percentage distribution.

**Table 1. Frequency and Percentage Distribution of School Teachers According to their Age in Years**

++5	Category	Respondents	
		Frequency	Percentage (%)
Age in years	21-30	1	2
	31-40	29	48
	41-50	25	42
	Above 5 years	5	8
Total		60	100

Table 1 depicts the classification of respondents on the basis of age in years. The findings indicate that regarding age the majority of School teachers 48% (29 out of 60) were in the age group of 31- 40 years, followed by 42% (25 out of 60) were in the age group of 41- 50 years, followed by 8% (5 out of 60) were above 51 years and 2% (1 out of 60) in the age group of 21-30 years.

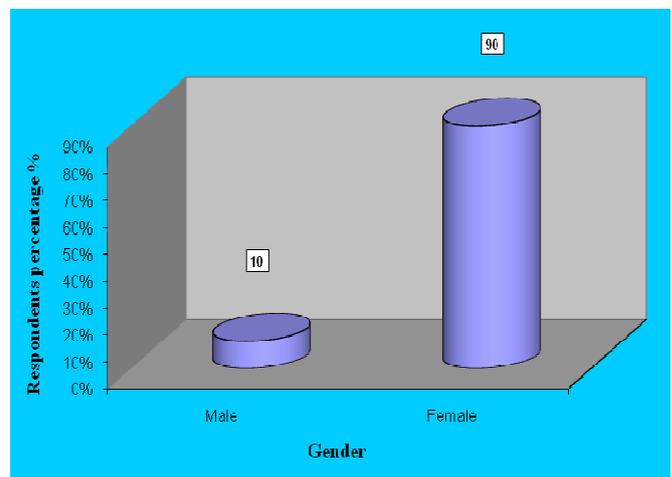


**Figure 3. Bar diagram representing percentage distribution of respondents by age (years)**

**Table 2. Frequency and Percentage Distribution of School Teachers According to their Gender**

N=60			
Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Gender	Male	6	10
	Female	54	90
Total		60	100

Table 2 depicts the classification of frequency and percentage distribution of respondents on the basis of gender. Regarding gender, it is observed that majority of the subjects 90% (54 out of 60) were female and 10% (6 out of 60) were male.

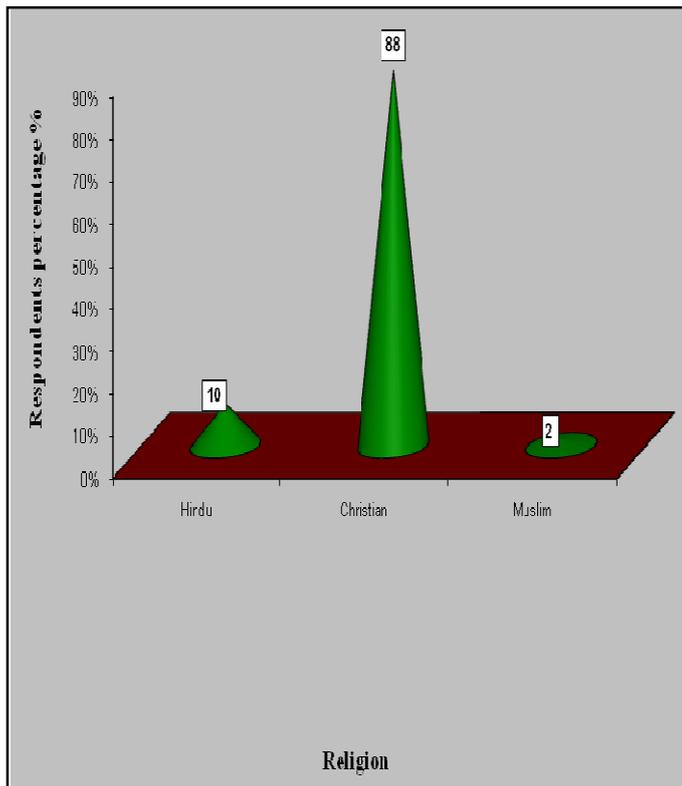


**Figure 4. Cylindrical diagram representing percentage distribution of respondents by gender**

**Table 3. Frequency and Percentage Distribution of School Teachers According to their Religion**

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Religion	Hindu	6	10
	Christian	53	88
	Muslim	1	2

Table 3 depicts the classification of frequency and percentage distribution of respondents on the basis of religion. In regard to religion, majority of the subjects 88% (53 out of 60) were Christian, followed by 10% (6 out of 60) were Hindu, and remaining 2% (1 out of 60) were Muslim.



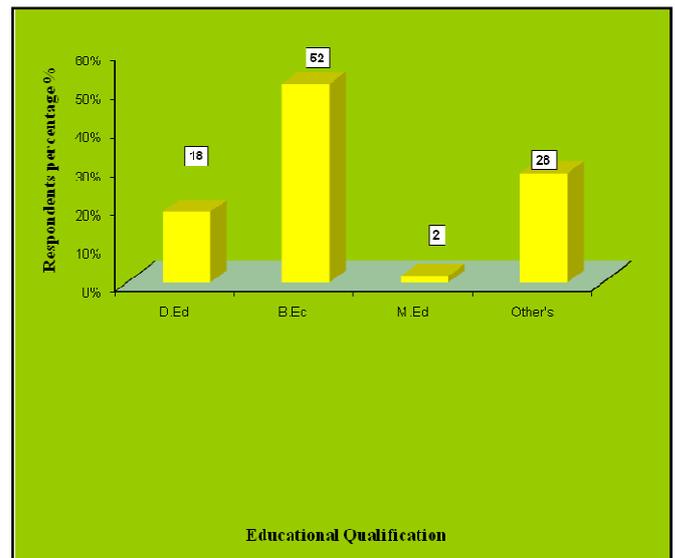
**Figure 5. Conical diagram representing percentage distribution of respondents by religion**

**Table 4. Frequency and Percentage Distribution of School Teachers according to their Educational Qualification**

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Educational Qualification	D.Ed	11	18
	B.Ed	31	52
	M.Ed	1	2
	Other's	17	28
Total		60	100

Table 4 depicts the classification of frequency and percentage distribution of the respondents according to educational qualification. Majority of the subjects 52% (31 out of 60) held B.Ed, followed by 28% (17 out of 60) held other's (B.Com), followed by 18% (11 out of 60) held D.Ed and 2% (1 out of 60) were M.Ed. Table 5 depicts the classification of frequency and percentage distribution of the respondents according to area of work. Majority 58% (35 out of 60) were working in Primary school, followed by 27% (16 out of 60) were working in Middle school, followed by 13% (8

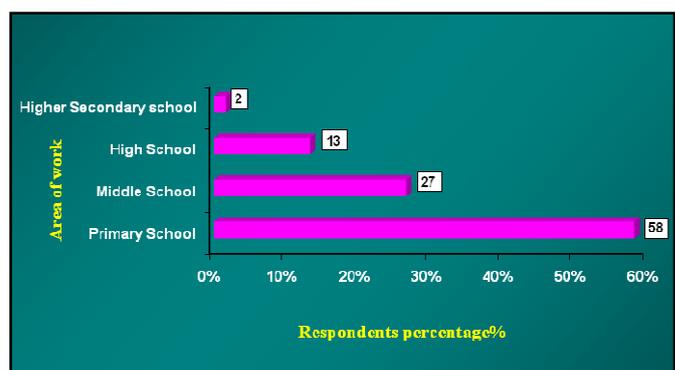
out of 60) were working in High school and 2% (1 out of 60) were working in Higher secondary school.



**Figure 6. Bar diagram representing percentage distribution of respondents by educational qualification**

**Table 5. Frequency and Percentage Distribution of School Teachers according to their Area of Work N=60**

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Area of work	Primary School	35	58
	Middle School	16	27
	High School	8	13
	Higher Secondary School	1	2
	Total	60	100



**Figure 7. Bar diagram representing percentage distribution of respondents by area of work**

**Table 6. Frequency and Percentage Distribution of School Teachers According to Total years of Teaching Experience**

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Total years of teaching experience	Less than one year	0	0
	1-5 year	10	16.66
	6-10 years	31	51.67
	11 years and above	19	31.67
	Total	60	100.00

Table 6 depicts the classification of the frequency and percentage distribution of school teachers according to total

years of experience. Majority 51.67% (31 out of 60) had 6-10 years of experience, followed by 31.67% (19 out of 60) had 11 and above years of experience, followed by 16.66% (10 out of 60) had 1-5 years of experience and none of them had less than one year of experience.

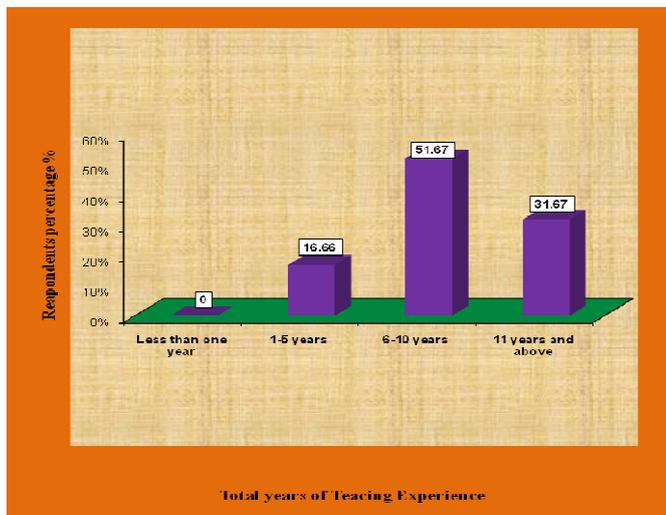


Figure 8. Bar diagram representing percentage distribution of respondents by total years of teaching experience

Table 7. Frequency and Percentage Distribution of School teachers according to Number of classes taken/day N=60

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Number of classes/day	5 classes	3	5
	6 classes	3	5
	7 classes	6	10
	8 classes	48	80
Total		60	100

Table 7 depicts the classification of frequency and percentage distribution of school teachers according to Number of classes taken/day. Majority of them 80% (48 out of 60) had taken 8 classes/day, followed by 10% of them (6 out of 60) had 7 classes/day, followed by 5% of them (3 out of 60) had 6 classes/day and 5% of them (3 out of 60) had 5 classes/day.

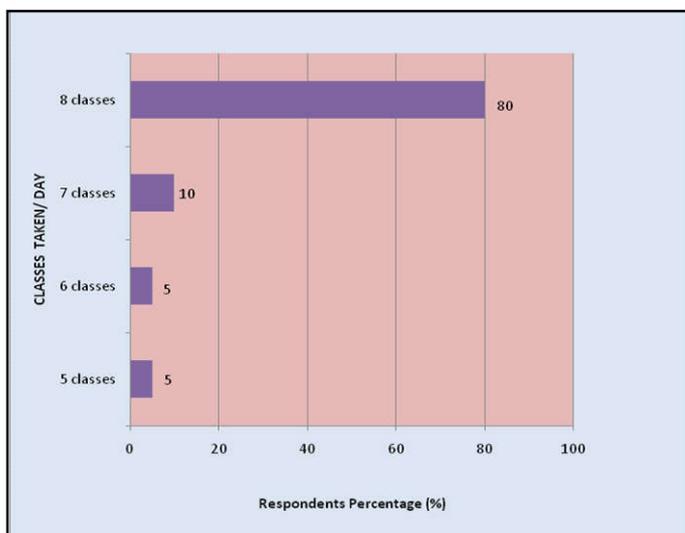


Figure 9. Bar diagram representing percentage distribution of respondents according to no. of classes taken /day

Table 8. Frequency and Percentage Distribution of School Teachers According to Source of Information N= 60

Characteristics	Respondents		
	Category	Frequency	Percentage (%)
Source of Information	Friends	21	35.00
	Mass media	25	41.67
	Family members	10	16.67
	In-service education	4	06.66
Total		60	100.00

Table 8 depicts the classification of frequency and percentage distribution of school teachers according to source of information. Majority of the respondents, 41.67% (25 out of 60) received information from Mass media, followed by 35% (21 out of 60) received information from Friends, followed by 16.67% (10 out of 60) received information from Family members and 06.66% (4 out of 60) received information through In-service education.

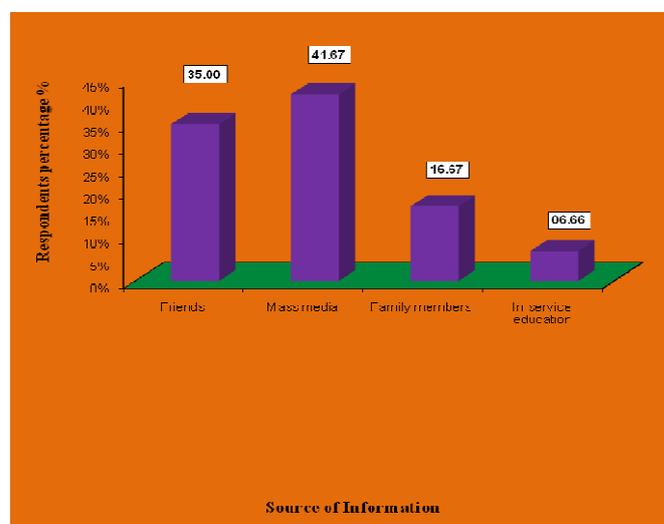


Figure 10. Bar diagram representing percentage distribution of respondents according to source of information

Section II: This section deals with the findings related to overall and aspect wise pre test knowledge scores of school teachers.

Table 9. Classification of Respondents by over all Pre-test Knowledge Level on selected work related health problems among school teachers

N = 60			
Knowledge level	Category	Respondants	
		Number (n)	Percentage (%)
Inadequate	≤ 50 % Score	26	43
Moderately adequate	51-75 % Score	16	27
Adequate	> 75 % Score	18	30
Total		60	100

The data presented in the above table shows the classification of school teachers with regard to their pre-test knowledge level on selected work related health problems. It was observed that of the subjects, 43% (26 out of 60) had inadequate knowledge regarding selected work related health problems in the pre-test, the remaining 27% (16 out of 60) had moderately adequate knowledge and the remaining 30% (18 out of 60) had adequate knowledge regarding selected work related health problems. The data presented in the above table shows the aspect wise mean pre- test knowledge scores of school teachers regarding theselected work related health problems.

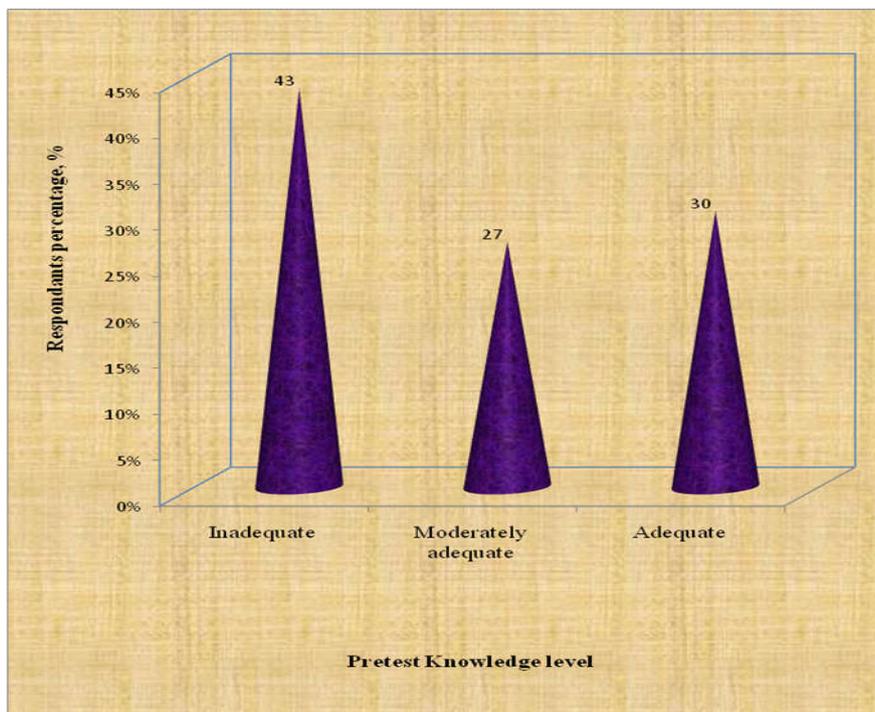


Figure 11. Conical diagram represents the percentage distribution of school teachers based on pre – test level of knowledge regarding selected work related health problems

Table 10. Aspectwise Analysis of Pre - test Knowledge Scores of Respondents on the selected work related health problems

Knowledge aspects	No. of Items	Max. score	Respondents Knowledge scores			
			N=60			
			Mean	Mean%	SD	SD%
General Information	5	5	2.7	54	0.89	18
Causes, risk factors and clinical manifestations	9	9	3.5	39	1.63	18
Diagnostic evaluation and complications	6	6	1.6	26	1.16	19
Prevention	12	12	4.6	38	2.31	19
Combined	32	32	12.35	39	4.63	14

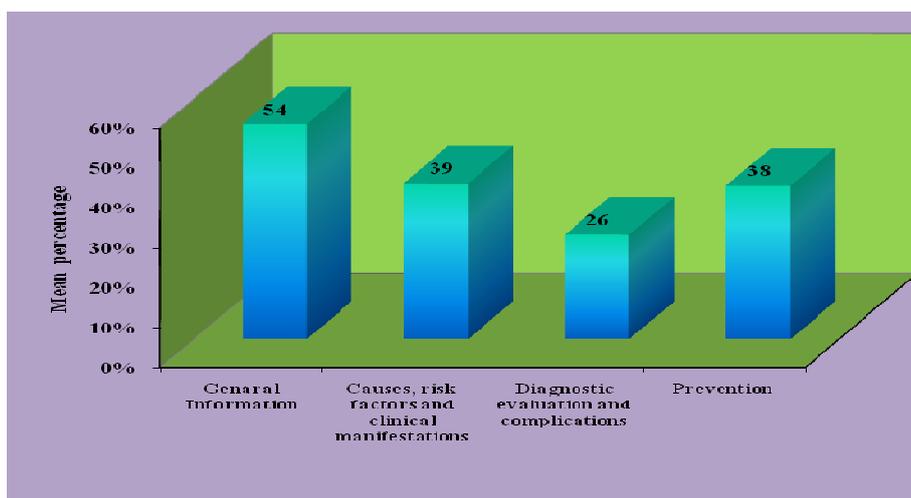


Figure 12. Bar diagram represents the aspectwise pre- test mean knowledge scores of respondents on selected work related health problems

It was evident that the school teachers had high knowledge scores on the aspect related to general information with a mean percentage score of 54% with a standard deviation of 18%. It was further followed by the aspect related to causes, risk factors and clinical manifestations with the mean percentage score of 39% and a standard deviation of 18%, followed by the aspect related to prevention with a mean percentage score of 38% and a standard deviation of 19%.

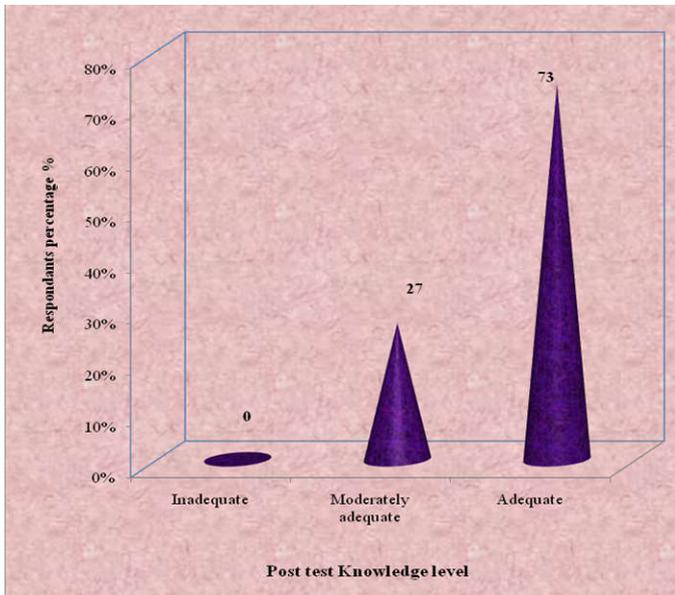
And for the aspect related diagnostic evaluation and complications with the mean percentage score was 26% with standard deviation of 19%. The data presented in the above table shows the classification of school teachers with regard to their post-test knowledge level on selected work related health problems.

**Section-III: This section deals with the findings related to overall aspect wise post test knowledge scores of the school teachers.**

**Table 11. Classification of Respondents by over all Post-test Knowledge Level on Selected Work related Health Problems among School Teachers**

Knowledge level	Category	Respondents	
		Number (n)	Percentage (%)
Inadequate	≤ 50 % Score	0	0
Moderately adequate	51-75 % Score	16	27
Adequate	> 75 % Score	44	73
<b>Total</b>		<b>60</b>	<b>100</b>

It was observed that none of the respondents had inadequate knowledge regarding selected work related health problems in the post- test. Majority of the respondents 73% (44 out of 60) gained adequate knowledge followed by 27% (16 out of 60) had moderately adequate knowledge. The significant finding after the post- test was noted that there were no respondents in the category with inadequate knowledge.



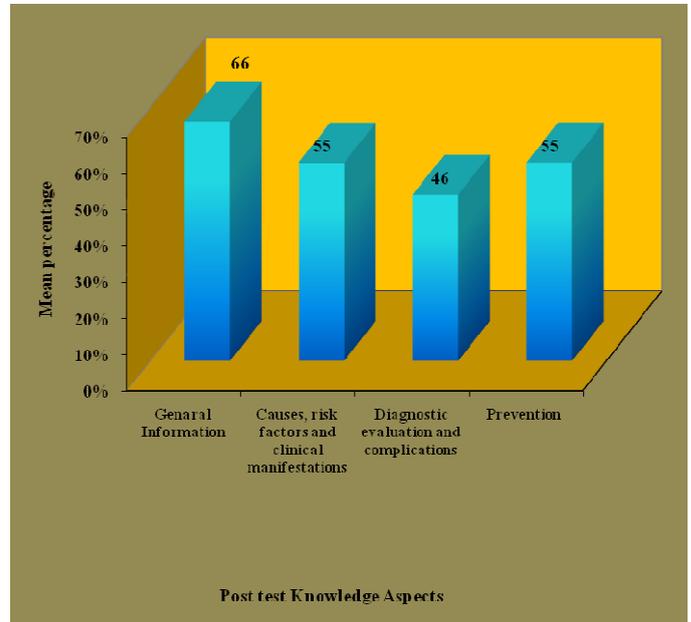
**Figure 13. Conical diagram represents the percentage distribution of school teachers based on post – test level of knowledge on selected work related health problems**

**Table 12. Aspectwise Analysis of Post- test Knowledge Scores of Respondents on the Selected Work related Health Problems**

Knowledge aspects	No. of Items	Max. score	Respondents Knowledge scores			
			Mean	Mean%	SD	SD%
General Information	5	5	3.3	66	1.21	24
Causes, risk factors and clinical manifestations	9	9	4.9	55	1.52	17
Diagnostic evaluation and complications	6	6	2.8	46	1.31	22
Prevention	12	12	6.6	55	1.53	13
Combined	32	32	17.53	55	3.41	11

The data presented in the above table shows the aspectwise mean post- test knowledge scores of school teachers regarding theselected work related health problems. It was evident that the subjects had high knowledge scores on the aspect related to general information with a mean percentage score of 66% with

a standard deviation of 24%. It was further followed by the aspect related to Causes, risk factors and clinical manifestations with the mean percentage score of 55% and a standard deviation of 17% followed by the aspect related Prevention with a mean percentage score of 55% and a standard deviation of 13%. The least knowledge scores obtained in the post - test was for the aspect related to diagnostic evaluation and complications with a mean percentage score of 46% and a standard deviation of 22%.



**Figure 14. Bar diagram represents the aspectwise post- test mean knowledge scores of respondents onselected work related health problems**

**Section IV: This section deals comparison of pre-test and post-test Knowledge Scores of School teachers regarding selected work related health problems.**

In order to evaluate the effectiveness of Self Instructional Module (SIM) regarding selected work related health problems, a null hypothesis ( $H_{01}$ ) was developed that is, there is no significant difference between the mean pre- test and post- test knowledge scores of School teachers regarding selected work related health problems. To test the hypothesis the level of significance was set at 0.05 levels. The data depicted in the above table shows that the mean post- test knowledge scores of the subjects were 17.52 and the mean pre- test knowledge scores were found to be 12.35. When a paired ‘t’ test was done, the obtained’ value 14.32 was found to be significant at 0.05 level.

**Table 13. Comparison of Overall Pre- test and Post - test Mean Knowledge Scores of School Teachers regarding Selected Work related Health Problems N=60**

	Mean	S.D	Mean %	S.D %	Paired’t Test
Pre test	12.35	4.59	39	14	14.32*
Post test	17.52	3.37	55	11	
Enhancement	5.17	1.22	16	3	

\* Significant at 5% level,  $t(0.05, 59df) = 1.96$

**Inference:** The overall mean of the post test knowledge score (17.53) is apparently higher than overall mean of pre test scores (12.35). The mean difference being 5.17. The paired ‘t’ value at df 59 obtained is 14.32 significant at 0.05 level.

Therefore the null hypothesis is rejected and research hypothesis is accepted. Therefore the Self Instructional Module is effective.

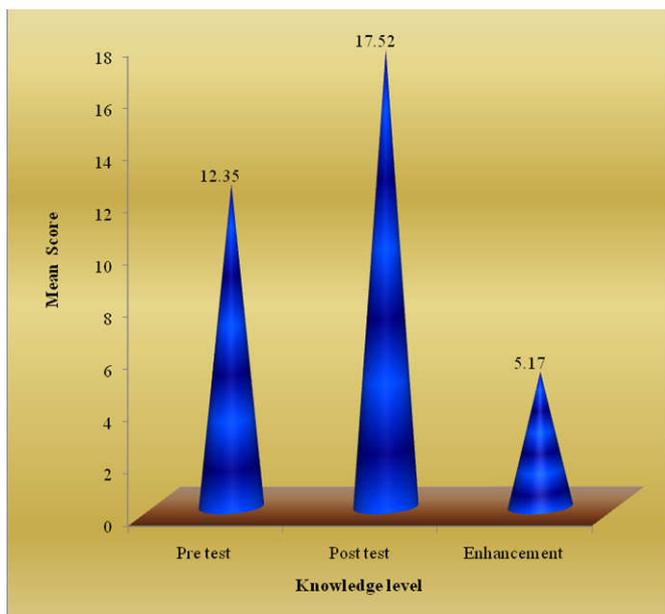


Figure 15. Conical diagram representing the over all comparison of pre - test and post - test mean knowledge scores of respondents on selected work related health problems

Table 14. Aspect wise Analysis of Mean Pre- test and Post- test Knowledge scores of School Teachers regarding Selected Work related Health Problems

N = 60

Aspects		Mean	S.D	Mean%	S.D%	Paired't
General Information	Pre test	2.68	0.88	54	18	8.80* P<0.05
	post test	3.30	1.20	66	24	
Causes, risk factors and clinical manifestation	Pre test	3.50	1.62	39	18	10.40* P<0.05
	post test	4.92	1.51	55	17	
Diagnostic evaluation and complications	Pre test	1.57	1.15	26	19	9.41* P<0.05
	post test	2.75	1.30	46	22	
Prevention	Pre test	4.60	2.29	38	19	10.49* P<0.05
	post test	6.57	1.52	55	13	

\* Significant at 5% level, t (0.05, 59df) = 1.96

The data depicted in the above table shows the aspectwise mean pre- test and post - test knowledge scores of school teachers regarding selected work related health problems. A paired 't' test was done to compare the mean pre-test and post-test knowledge scores on each aspects. For the aspect related to General Information, the obtained 't' value was 8.80 and was found to be significant at 0.05 level (t=0.05, 59df=1.96). In the area of related to Causes, risk factors and clinical manifestations, the obtained 't' value was 10.40 was also significant at 0.05 level (t=0.05, 59df=1.96). Regarding Diagnostic evaluation and complications, the mean post-test knowledge scores were found to be significantly higher than the mean pre-test knowledge scores i.e. the obtained 't' value was 9.41 and it was significant at 0.05 level (t=0.05, 59df=1.96). Regarding prevention, the 't' value obtained 10.49 which was also significant at 0.05 level (t=0.05, 59df=1.96). From the above information, it was evident that the Self Instructional Module was effective in enhancing the knowledge of school teachers regarding selected work related health problems for all knowledge aspects under investigation.

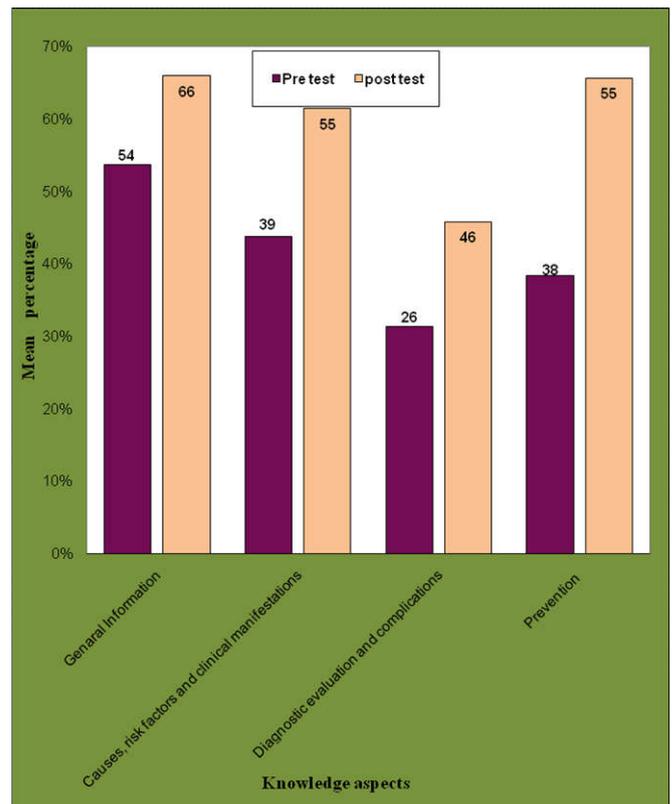


Figure 16. Bar diagram representing the aspect wise comparison of mean pre test and post test knowledge scores of school teachers on selected work-related health problems

**Section V:** Analysis and interpretation of association between the mean pre- test knowledge scores of school teachers with their selected socio-demographic variables.

To determine an association between selected socio-demographic variables and the mean pre-test knowledge level of school teachers regarding selected work related health problems, a null hypothesis (H<sub>02</sub>) was developed which shows that there is no significant association between the mean pretest knowledge scores of school teachers regarding selected work related health problems with their selected socio-demographic variables.

**Inference:** From the above table, it was evident that with regard to age, the obtained Chi square value ( $\chi^2$ ) value 13.56 is more than the table value (12.49, 6df) at 0.05 level of significance. Thus the null hypothesis is rejected and the research hypothesis is accepted. Therefore, there is a significant association between the age and pre- test knowledge of school teachers regarding selected work related health problems. With regard to gender, the obtained Chi square ( $\chi^2$ ) value 4.71 is less than the table value (5.99, 2df) at 0.05 level of significance. Thus the null hypothesis is accepted and the research hypothesis is rejected. Therefore there is a no significant association between the gender and mean pre- test knowledge scores of school teachers regarding selected work related health problems. With regard to religion, the obtained Chi square ( $\chi^2$ ) value 1.94 is less than the table value (9.49, 4df) at 0.05 level of significance. Thus the null hypothesis is accepted and the research hypothesis is rejected. Therefore there is a no significant association between the religion and pre- test knowledge scores of school teachers regarding selected work related health problems.

**Table 15. Association between Mean Pre-test Knowledge level of School teachers regarding selected work-related health problems with their selected Sociodemographic variables**

Demographic Variables	Category	Respondents knowledge						Total	$\chi^2$ value	Critical value
		Inadequate		Moderate		Adequate				
		n	%	n	%	n	%			
Age in years	21-30	0	0	0	0	1	100	1	13.56*	P<0.05 (12.49)
	31-40	14	48	7	24	8	28	29		
	41-50	11	44	9	36	5	20	25		
	Above 51 years	1	20	0	0	4	80	5		
Gender	Male	5	83	1	17	0	0	6	4.71	P<0.05 (5.99)
	Female	21	39	15	28	18	33	54		
Religion	Hindu	3	50	2	33	1	17	6	1.94 NS	P<0.05 (9.49)
	Christian	22	42	14	26	17	32	53		
	Muslim	1	100	0	0	0	0	1		
Educational qualification	D.Ed	3	27	3	27	5	45	11	20.57*	P<0.05 (12.49)
	B.Ed	21	68	6	19	4	13	31		
	M.Ed	1	100	0	0	0	0	1		
	Other's specify	1	6	7	41	9	53	17		
Area of work	Primary School	11	31	11	31	13	37	35	14.07*	P<0.05 (12.49)
	Middle School	6	38	5	31	5	31	16		
	High School	8	100	0	0	0	0	8		
	Higher Secondary school	1	100	0	0	0	0	1		
Total years of teaching experience	Less than one year	0	-	0	-	0	-	0	13.08*	P<0.05 (12.49)
	1-5 years	2	20	3	30	5	20	10		
	6-10 years	19	61	8	26	4	61	31		
	11 years and above	5	26	5	26	9	26	19		
No. of working hours	5 hours	1	33	0	0	2	67	3	5.84	P<0.05 (12.49)
	6 hours	0	0	2	67	1	33	3		
	7 hours	3	50	1	17	2	33	6		
	8 hours	22	46	13	27	13	27	48		
Source of information	Friends	13	62	2	10	6	29	21	15.47*	P<0.05 (12.49)
	Mass media	11	44	8	32	6	24	25		
	Family members	1	10	4	40	5	50	10		
	In-service education	1	25	2	50	1	25	4		

N=60

\*Significant at 5% Level, NS -Not significant

With regard to educational qualification, the obtained Chi square ( $\chi^2$ ) value 20.57 is more than the table value (12.49, 6df) at 0.05 level of significance. Thus the null hypothesis is rejected and the research hypothesis is accepted. Therefore there is a significant association between the educational qualification and pre- test knowledge scores of school teachers regarding selected work related health problems. It is evident that with regard to area of work, the obtained Chi square ( $\chi^2$ ) value 14.07 is found to be higher than the table value (12.49, 6df) at 0.05 level of significance. It means that there is a significant association between area of work and pretest knowledge level of the school teachers regarding selected work related health problems. Thus the null hypothesis is rejected and the research hypothesis is accepted. It is evident that with regard to total years of teaching experience, the obtained Chi square ( $\chi^2$ ) value 13.08 is found to be higher than the table value (12.49, 6df) at 0.05 level of significance. It means that there is a significant association between total years of working experience and pretest knowledge level of the school teachers regarding selected work related health problems. Hence the null hypothesis is rejected and the research hypothesis is accepted. With regard to no. of working hours, the obtained Chi square ( $\chi^2$ ) value 5.84 is less than the table value (12.49, 6df) at 0.05 level of significance. Thus the null hypothesis is accepted and the research hypothesis is rejected. Therefore there is a no significant association between the no. of working hours and pre- test knowledge scores of school teachers regarding selected work related health problems. With regard to source of information, the obtained chi square ( $\chi^2$ ) value 15.47 is found to be higher than the table value (12.49, 6df) at 0.05 level of significance. Thus the null hypothesis is rejected and the research hypothesis is

accepted. Therefore there is a significant association between source of information and pretest knowledge level of the school teachers regarding selected work related health problems.

### Summary

This chapter deals with analysis and interpretation of data by using descriptive and inferential statistics. Analysis was carried out on the basis of the objectives and hypothesis of the study. Frequency and percentage distribution were used to explain demographic variable. A 't' test was done to evaluate the effectiveness of Self Instructional Module regarding the selected work related health problems among school teachers in selected schools. Chi square ( $\chi^2$ ) test was done to determine the association between the mean pre- test knowledge with their selected socio-demographic variables.

### Conclusion

**The following conclusions were drawn from the study:** Majority of School teachers 48% (29 out of 60) were in the age group of 31- 40 years, followed by 42% (25 out of 60) were in the age group of 41- 50 years, followed by 8% (5 out of 60) were above 51 years and 1.67%(1 out of 60) in the age group of 21-30 years.

- Majority of the subjects 90% (54 out of 60) were female and 10% (6 out of 60) were male.
- Majority of the subjects 88% (53 out of 60) were Christian, followed by 10% (6 out of 60) were Hindu, followed by 2% (1 out of 60) were Muslim.

- Majority of the subjects 52% (31 out of 60) held B.Ed, followed by 28% (17 out of 60) held other's (B.Com) followed by 18% (11 out of 60) held D.Ed and 2% (1 out of 60) were M.Ed.
- Majority 58% (35 out of 60) were working in Primary school, followed by 27% (16 out of 60) were working in Middle school, followed by 13% (8 out of 60) were working in High school and 2% (1 out of 60) were working in Higher secondary school.
- Majority 51.67% (31 out of 60) had 6-10 years of experience, followed by 31.67% (19 out of 60) had 11 year and above years of experience, followed by 16.66% (10 out of 60) had 1-5 years of experience and none of them had less than one years of experience.
- Majority 80% of them (48 out of 60) had 8 classes taken/day, followed by 10% of them (6 out of 60) had 7 classes/day, followed by 5% of them (3 out of 60) had 6 classes/day and 5% of them (3 out of 60) had 5 classes.
- Majority 41.67% of the respondents (25 out of 60) had information from Mass media, followed by 35% (21 out of 60) had information from Friends, followed by 16.67% (10 out of 60) had information from Family members and 6.66% (4 out of 60) had information through In-service education.
- With regard to the pre test knowledge regarding selected work related health problems, It was observed that 43% (26 out of 60) had inadequate knowledge, 27% (16 out of 60) had moderately adequate knowledge and the remaining 30% (18 out of 60) had adequate knowledge
- The mean pre test knowledge score related to general information on selected work-related health problems was 2.7 (54%). Regarding causes, risk factors and clinical manifestations, the mean pre test knowledge score was 3.5 (39%). Regarding diagnostic evaluation and complications the mean pre test knowledge score was 1.6 (26%). Regarding related to selected work-related health problems mean pre test knowledge was 4.6 (38%).
- In the post test it was observed that majority 44 (73%) of the subjects had adequate knowledge followed by 16 (27%) had moderately adequate knowledge regarding selected work-related health problems and none had inadequate knowledge regarding selected work-related health problems.
- The mean post test knowledge score related to General Information on selected work-related health problems was 3.3 (66%). Regarding causes, risk factors and clinical manifestation of selected work-related health problems the mean post test knowledge score was 4.9 (55%). The mean post test knowledge score regarding diagnostic evaluation and complications were 2.8 (46%). And in prevention mean post test knowledge score was 6.6 (55%). The overall mean post test knowledge score was 17.53 (55%). Mean percentage wise post test knowledge scores shows that the respondents had improvement in knowledge in all the aspects regarding selected work-related health problems.
- In the present study, the comparison of overall pre test and post test mean knowledge scores regarding

selected work-related health problems among school teachers showed an enhancement

- In order to evaluate the effectiveness of the SIM regarding selected work-related health problems, a paired 't' test was done which compared the mean pretest and post test knowledge scores of school teachers. Mean post- test knowledge scores of the subjects were 17.52 and the mean pre- test knowledge scores were found to be 12.35. When a paired 't' test was done, the obtained 't' value 14.32 was found to be significant at 0.05 level. The overall mean of the post test knowledge score (17.52) is apparently higher than overall mean of pre test scores (12.35). The mean difference being 5.17. From this it is evident that 't' value is found to be significant.
- In the present study, association was found between the mean pre test knowledge and their selected socio-demographic variables such as age ( $\chi^2=13.56$ ), gender ( $\chi^2=4.71$ ), religion ( $\chi^2=1.94$ ), educational qualification ( $\chi^2=20.57$ ), area of work ( $\chi^2=14.07$ ), total years of teaching experience ( $\chi^2=13.08$ ), No. of classes taken/day ( $\chi^2=5.84$ ) and source of information ( $\chi^2=15.47$ ). Among these age, gender, educational qualification and area of work showed significant association with mean pretest knowledge scores.

#### Limitations

##### The present study has the following limitations

- The study has sampling constraints. Non probability purposive sampling technique was used to select the sample; hence generalizability of inferential statistics should be done with caution.
- The study was conducted only to assess the level of knowledge of school teachers.
- Study was conducted in only selected Schools; hence generalization is possible only to the selected setting.
- The study has design constraint in the form of threats to internal validity such as effect of history, maturation and testing.

#### Suggestions

##### The findings of the study suggests

- School teachers should be given in-service education to practice managing the selected work-related health problems.
- Adequate knowledge regarding selected work-related health problems will help the school teachers to manage the low back pain, hypertension and Varicose vein. Which will help in formulating intervention to prevent the complications.

#### Recommendations

In the light of the findings of the present study, the researcher puts forward the following recommendations for conducting further research

- A similar study can be conducted on a larger sample to generalize the finding.

- A study can be done to assess the effectiveness of video teaching program regarding causes, risk factors, clinical manifestation, complications and prevention.
- A comparative study can be done between Allopathic and Ayurvedic medication in treatment of low back pain and hypertension.
- An experimental study can be conducted to relieve the health problems associated with teaching.

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