

# Assess the Effectiveness of Structured Teaching Program on Knowledge Regarding Sex Education among Students of 10-12 Year Age Group

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## Abstract

Adolescents generally are less informed, less experienced and less confident about sexual matters and get into lot of sexual related problems such as premarital unprotected sexual indulgence resulting in STDs, illegitimate teenage pregnancies, sexual abuse, violence, exploitation, etc. Therefore it is very important to conduct sex education for adolescence so that they learn about: normal functioning of reproductive system, the healthy relationship with opposite sex, safe and protected sex, contraceptives, measures to prevent sexual exploitation by anyone in the family, school/college, neighborhood etc. Data was collected using structured questionnaire. **Research Approach** was used as quantitative approach. **Research Design** is planned, structure and strategy of investigation of answering there search question in overall planned. And non- experimental approach is use to assess the knowledge. **Conceptual framework** used for present study is "Modified general system mode" total **sample size** is 30 and selected by **Non probability convenient sampling technique**. In these study accessible population 10-12 year school students who meet the designated criteria and who are also available for research study. In this study, inclusion criteria were 10-12 year school student who are willing to participate, 10-12 year school students who are available during the data collection, and 10-12 year students who are able to read and write English. 10-12 year school students who are studying in selected in schools and exclusion criteria was above and below 10-12 year school students who are not willing to participate. The tool for the study was prepared by referring books, internet and related research. The tool was validated by 7 experts of various fields. Suggestion proposed was incorporated and necessary changes are made. The tool was divided 3 sections. section A: it consist of demographic variables, section B consist of background variables and section C consist of 30 question items and each correct response carry 1 mark. The pilot study was conducted by administrating the questionnaire to 5 respondents. The reliability of the questionnaire was done by karl pearson's formula and tool was found reliable and feasible. The data collection process of main study was done on 18/10//2023 in selected school. Prior visit was made to the selected school to take permission from concerned authorities. After explaining objectives and the purpose of the study, consent was taken from participant. Then test was conduct of duration of 45 minutes. Based on objectives data was analyzed by using various statistical tests, mean, mean percentage, standard deviation,

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etc. **Results** in present study shows that the pretest level of knowledge mean score is 13.66 and post- test level of knowledge mean score is 27.13, the pretest knowledge belong to very poor group was 0%, poor 13.33%, would 17%, very good 16.6%, excellent was 0% the post-test knowledge belong to very poor group was 0%, poor 0%, would 0%, very good 10%, excellent was 90%. The mean difference is 13.47. Only belonging area is associated with the result but age, previous knowledge, source of knowledge and gender or not associated with the result. **Conclusion**, In the study pretest mean score is 13.66 and post-test mean score is 27.13 H1 is accepted that means the study was effective.

**Keywords:** Assess, Effectiveness, Structured teaching program, Knowledge, Sex education.

## INTRODUCTION

Adolescents generally are less informed, less experienced and less confident about sexual matters and get into lot of sexual related problems such as premarital unprotected sexual indulgence resulting in STDs, illegitimate teenage pregnancies, sexual abuse, violence, exploitation, etc. Therefore it is very important to conduct sex education for adolescence so that they learn about: normal functioning of reproductive system, the healthy relationship with opposite sex, safe and protected sex, contraceptives, measures to prevent sexual exploitation by anyone in the family, school/college, neighborhood etc. The need for sex education has been felt for a long time now but its introduction in school and colleges is still restrained. However, sex education within cultural context can help an guide adolescents and young adults understand and consider sexuality as meaningful and respectable part of life. It can help them prevent sex related problems and achieve wholesome personality and attain self-realization. (1) This is a part of general health education. It should be given to children growing as adolescents by their parents, teachers, in a friendly and honest way. (2) Sex education is high quality teaching and learning about a broad variety of topics related to sex and sexuality. It explores values and beliefs about those topics and helps people gain the skills that are needed to navigate relationships with self, partners and community, and manage one's own sexual health. (3) It should start right from pre-adolescence period to all ages of both sexes. Education should be one all aspect i.e. anatomy and physiology of reproductive system, sex hygiene, psycho-social and ethical aspects. (1) Adolescent is the time boys and girls are maturing sexually. They get attracted towards opposite sex i.e. boys are attracted towards girls and girls towards boys. This is natural to get feelings for each other. It is alright if there is no sexual exploitations. But because of various prevailing conditions such as urbanizations, move towards nuclear family system, growth of slums, easy availability to pornographic materials, explore

to sedative and exciting programmers of electronic media, loss of sociocultural values and liberal attitude of adolescent towards sex, often there is premarital sexual indulgence among boys and girls resulting in illegitimate pregnancies and associated social problems. Also there is sexual exploitation of adolescents by relatives, strangers, even within the home. There is also increasing sexual harassment, molestation, exploitation at place of work of adolescent girls and young women. This is serious problem affecting social and psychological development of the adolescents. (1) Often adolescent girls and young women are subjected to violence of many forms which include rape, molestation, forced prostitution and trafficking, eve teasing, sexual abuse and harassment etc. The National Crime Records Bureau had revealed the following information about violence against women's. One act of eve teasing every 51 minutes. One rape every 54 minutes. One kidnapping and abduction every 43 minutes. One act of cruelty every 33 minutes. One criminal offence against women every 7 minutes. According to National Association for the Education of Young Children, early childhood also includes infancy, making it age 0-8 instead of age 3-8. At this stage, children's are learning through observing, experimenting and communicating with others. Childhood is the age span of two year to adolescence. The term childhood is non-specific in its time span and can imply a varying range of year in human development. The broad stages of childhood are: Early childhood (two to six year) and the late childhood (six to twelve year). The implementations of sex education in schools will provide teenagers with the correct information to enable them to make the right choices in life. Sex education teaches the young person what he or she should know for his or her personal conduct and relationship with others. Sex education is an awareness to understand the sex problems scientifically. It conveys all educational measures, which help the growing children to understand and face the problems of life. At the time of puberty, physical changes and emergence of sexual feelings cause a lot of problem among adolescents.

It encompasses sexual development, sexual and reproductive health, interpersonal relationships, affection, intimacy, body image, and gender roles. Sex education in high schools helps young people to be more prepared for life changes such as puberty, menopause and aging. Sex education can develop skills ok and normal. For example, girls would not get shocked, panic and afraid at their first menstruation once they already had the knowledge about it.

## BACKGROUND OF STUDY

Sex education has long been characterized by competing definitions, goals and philosophies, which have muddied efforts to understand and gauge its effectiveness. When it comes to measuring impact and outcomes, research has been dominated by interest in prevention programs aimed at reducing STDs and pregnancy rates.<sup>3-9</sup> These prevention programs put emphasis on sexual behaviors and behavior change as the main focus of analysis. What has remained largely unstudied, however, approaches with a broader and more comprehensive focus on human sexuality, defined by SIECUS as: "the sexual knowledge, beliefs, attitudes, values, and behaviors of individuals. Its various dimensions involve the anatomy, physiology, and biochemistry of the sexual response system; identity, orientation, roles, and personality and thoughts, feelings and relationships". In 2012, the Future of Sex Education, a partnership among three leading national sex education organizations, Advocates for Youth, Answer, and SIECUS, released the National Sexuality Education Standards (NSES). These were updated in 2020, as the National Sex Education Standards, Second Edition. The goal of the NSES is to provide school districts with "clear, consistent and straightforward guidance on the essential, minimum, core content and skills needed for sex education that is age-appropriate for students in Grades K-12 to be effective". It consists of the following seven topic areas: Consent and Healthy Relationships, Anatomy and Physiology. Puberty & Adolescent Sexual Development, Gender Identity and Expression, Sexual Orientation and Identity, Sexual Health, and Interpersonal Violence. Since the initial publication of the NSES, school districts across the country have been relying on these standards to develop and implement CSE, with recent data suggesting that more than 40% of districts in the U.S. have adopted the NSES. Along with increasing dependence on the NSES has come growing and renewed interest in the evidence that supports their use.

## OBJECTIVE

- To assess the pre-test knowledge score regarding sex education and its impact among selected students.
- To assess the post-test knowledge score regarding sex education and its impact among selected students.
- To assess the effectiveness of structure teaching program among school students.
- To find out the association between post-test knowledge score with selected demographic variable.

## Need of the Study

### *Sex education*

1. Sex education is an educational principle that raises awareness about various sexual changes and processes in the body.
2. Its goal is to raise awareness about sexually transmitted diseases and safe sex practices.
3. It will instill in students a scientific mindset about the process, making them immune to myths.
4. Sex education is essential in schools because it informs students about reproductive health, related organs, adolescence and sexually transmitted diseases.
5. It also raises awareness in order to protect people from misconceptions.

### *Reasons for sex education*

1. It raises student awareness of sexually transmitted diseases and their prevention.
2. Sexually transmitted diseases are those that spread through sexual contact with infected people.
3. Students can be made aware of the various types of STDs and how they are caused by introducing sex education in schools. The use of condoms can help to prevent STDs.

### *Awareness of various myths*

1. Several myths surround sexual intercourse and menstruation, particularly in our country.
2. This is due to a lack of sex education at a young age.
3. Introducing sex education as a subject mindset about the process, making them immune to myths.

**Abuse of children:**

1. Child abuse can be reduced with sex education.
2. This is because many abused children are unaware of what is happening to them.
3. Educating them properly will make them aware of the good and bad touches, potentially leading to a significant reduction in child abuse.

**Body awareness:**

1. Sex education raises awareness of the body and the changes that occur during puberty.
2. Many parents have difficulty explaining it to their children and frequently skip it.
3. As a result, sex education can benefit both parents and children

**Operational Definition:**

- **Assess:** According to Oxford Dictionary – To make a judgment about the nature or quality of someone or something.<sup>7</sup> In this study – It refers to way of assessing the knowledge by 10-12 year students.
- **Effectiveness:** According to Oxford Dictionary – It refers to the significant gain in knowledge determined by significant difference between pre and post knowledge. In this study – It refers to extent to which the structured teaching program achieves the desire improvement in knowledge among student.
- **Structured Teaching Programme:** According to Oxford Dictionary – Constituting learning materials and condition arrange so that students can learn. In this study – It refers to a lesson plan which contains information regarding sex education among students.
- **Knowledge:** According to Oxford Dictionary – The information, understanding, and the skills that you gain through education or experience. In this study – In this study the correct response from the participants regarding sex education among students.
- **Sex Education:** According to Oxford Dictionary - A program for school children, some time for adults, with instruction on the anatomy and physiology of sex and discussion of human sexuality, sexually transmitted diseases, and pregnancy and how to avoid it when it is unwanted. In this study – It refers to sex education that is about sexually transmitted disease, unwanted

pregnancies and human sexuality

**LIMITATIONS**

- The study is limited to selected 10-12year age group students.
- Male and female is included.
- Sample size is 30.
- Who knows about English reading and writing.

**DELIMITATIONS**

- The study is delimited for not more than 30 student.
- Students who are not present during data collection.

**Ethical Aspects**

The study was approved by the institutional ethical committee and the study was conducted in accordance with ethical guideline prescribe by central ethics committee on human research. Permission was taken from ethical committee. Proper explanation regarding the purpose of the study and nature of questionnaire involved in the study was given to the samples. Information was not released outside the terms of agreement. Subjects were protected from all type of harm.

**HYPOTHESIS**

- **H<sub>1</sub>:** There is significance difference between pre-test knowledge and post-test knowledge.
- **H<sub>2</sub>:** There is significance difference between post-test knowledge with demographic variable.
- **H<sub>0</sub>:** There is no difference between pre-test score knowledge and post-test score knowledge.

**Conceptual Framework:** The conceptual framework provides certain frames references for research and education. According to Modified general system model" a system consist of a set of interacting components that is, input, throughout and output within a boundary that filter the type and rate of exchange with the environment.

**Input:** In this type of information, students in the selected college with demographic variables will be including. These students will be assessing for their

knowledge regarding sex education. Demographic variable for the study of sex education are age, previous knowledge, source of knowledge, gender and area from which students belong. It is assumed that students have some knowledge about sex education; result may be positive or negative.

**Throughput:** After the input it is processed in a way useful to the system. This transformation is called throughput. To assess the pre-test level of knowledge and administration of structured teaching program on knowledge regarding study related to sex education can help to improve the knowledge regarding study related sex education.

**Output:** The general goal of nursing intervention is to maintain and improve knowledge output from a system is energy matter or information given out by the system as a result of its process. In this study post-test reveals result students are significantly improving in knowledge regarding study related sex education among selected students in selected school. The gain in knowledge was measured through the post test. There are significantly improvement and non-significant improvement in knowledge.

**Feedback:** Feedback is the mechanism by which some of the output of the system is return to the system as input. The process including those students in selected school whose no gain in knowledge score. These selected students in the selected school will be again exposed to the planned teaching program for the development of knowledge regarding sex education. If there is a significant gain in scores indicates adequate knowledge gain.

## REVIEW OF LITERATURE

A literature review is a piece of academic writing demonstrating knowledge and understanding of the academic literature on a specific topic placed in context. A literature review also includes a critical evaluation of the material; this is why it is called a literature review rather than a literature report. Review of literature is a broad, comprehensive in depth, systematic and critical review of scholarly publication, unpublished scholarly print material and personal communication (BT Basavanthappa 1998). A literature review is a compilation, classification, and evaluation of what other researchers have written on a particular topic

Elisa Granocchio *et al.* J Neurosci Res. 2023 May. Over the last 40 year, evergrowing interest in sex-

related differences in the human brain has led to a vast amount of literature on the subject, a small part of which relates to studies of differences in the ability to read. The data concerning typically developing children mainly come from school-based screening projects (Program for International Student Assessment, INVALSI) and partially from the standardization of reading tests. These have revealed the existence of a gap in favor of females that primarily appears during adolescence and in situations of socio cultural disadvantage, usually explained on the basis of environmental factors such as socioeconomic status and gender-based education. Dyslexia is a neurodevelopment disorder that is significantly more prevalent among males, a difference that neuro imaging and genetic studies have attributed to the presence of hormone-related protective factors in females, although it has been hypothesized that different neurocognitive substrate may also be involved. However, the literature on the subject is still limited, and further studies of the interactions between genetic risk, environmental factors and brain phenotypes are needed to clarify why females are better at performing reading tasks and less susceptible to dyslexia, regardless of their language or the educational system in the country in which they live. The aim of this mini-review was to describe the studies that have investigated sex-related differences in reading ability in both typically and atypically developing subjects.

## METHODOLOGY

A research methodology defines what the activity of research is, how to proceed, how to measure progress and what constitute success. The methodology decision paves crucial implication for validity and credibility of study findings. Methodology of research indicate general factors organizing procedure for the empirical study together with the method of obtaining valid rule reliable data for an investigation.

## RESEARCH APPROACH

The researcher approach for the present study is the **quantitative research approach**

### Research Design

The research design is the planned, structure and strategy of investigation of answering the research question in overall planned. And **non-**

**experimental design** is use to assess the knowledge regarding sex education among the selected school student. Keeping in view the objectives of study the sample was study using pre-test and post test group design.

#### Setting of the Study:

Selected 10-12 year age group school students.

#### Variables:

**Independente Variable:** According to polite and beck 2008, independent variable is the variable that is believed to cause or influence the independents variable, in this study independents variable is knowledge.

**Dependent Variable:** According to polite and beck 2008, dependent variable is the variable hypothesized to dependent on or by another variable; the outcome variable of interested, in this study dependent variable is sex education.

#### Sample:

The sample selected for present study compromise of 10-12 year age group school students.

**Sample Technique:** Sampling technique is non probability purposive sample technique is used to select the sample.

#### Sample Size: 30

#### Inclusion Criteria:

1. School students in selected school (10 to 12 years).
2. School student who are willing to participate in the study.
3. Student who knows English and Hindi.

#### Exclusion Criteria:

4. Students who are not studying in school.
5. Students who are not willing to participate.
6. Student who doesn't know English.

**Tool Preparation:** The researcher prepared a structured questionnaire as the tool for the study. The structured questionnaire includes two sections.

**Section A:** This section includes five questions on information regarding demographic profile of sample.

**Section B:** This section includes 30 question to assess the knowledge on school student. As the structure of total questionnaire is developed in the 2-boundary section to assess the knowledge of

10-12 year age group school students. Section B of total questionnaire deal with the multiple-choice question. The score of the section B measured based on excellent, good and poor, where the correct response is given a score of "1" and incorrect "0"

#### Selection and Development of Tool

Development of tool according to Basavanthappa (2007) the tool of the data collection translated the research objective into specific question the response to which will provide the data required to achieved the research objectives. The order to achieve this purpose, each question must convey to response the idea or group of idea required by the researcher objectives. An instrument in research refer to the tool or equipment used for the data collection or may take the form of questioning. Questionnaire is means of eliciting the dealing, believe, experiences knowledge of some samples of students. A data collecting instrument it could be structured. The present study aims at assessing the knowledge regarding sex education among 10-31 12 year age group school students. A structured questionnaire helps the researcher to assess the knowledge regarding sex education in selected school. The steps selected for preparing the tool were as follows: Review of related literature, books, journals, reports, articles, published and unpublished studies were reviewed to develop the tool. Consultation with the guide and experts in the related field. Consultation with the statisticians was done for the preparation of the plan for statistical analysis. Discussion the peer group.

### RELIABILITY

Reliability of research instrument is defined as the extent to which the instrument yields the same result on repeated measure. It is then concerned with consistency, accuracy, precision, stability, equivalence and homogeneity. The self- structure questionnaire schedule was tested for reliability.

**Validity:** Validity refers to getting result that accurately reflect the concept been measured in practice, validity can also refer to the success of research in retrieving "Valid" result. The content of data collection tool was sending for its validity in terms of relevance and accuracy to a list of experts along with the scoring sheet. The data collection tool was sent to expert and received back and valuable suggestion. The content validity at tool was introduced self-structured questionnaires with 2 section pertaining question on assessing

the demographic information and knowledge assessment regarding sex education.

### PILOT STUDY

Pilot study is the small-scale version or a trail run done in preparation of a major study. Pilot study is a miniature of same part of actual study in which the instrument administered to subject, drawn from the same population. Formal permission was obtained from the authorities prior to the pilot study. School students (10-12 year age group) in selected school at Nagpur were selected by probability simple random technique and excluded from the main study. The pilot study conducted from 10/10/2023 to 11/10/2023. The students responded well in the structured multiple-choice question and they were able to easily understand. The researcher took an average time about 45 minutes to collect data from 5 students. It was found feasible to conduct the study.

### PROCEDURE FOR DATA COLLECTION

A formal permission was obtained from the authority of the selected school. The data was collected on 18/10/2023. Samples are collected on the basis of criteria for the study. Samples are selected from the selected school. After selection of sample on the basis of inclusion criteria, the researchers has introduced self to school students and explains the purpose of study and clarify their doubts and detail about the study and obtain a written consult from the sample. A structured questionnaire was given to the sample, and explain about the questionnaire, assess the knowledge about sex education. It was filled by sample and the duration of 15-20 minutes was given to each sample. The response of each sample was recorded on the checklist, knowledge was given on the same day and post-test was conducted on Seventh day. The procedure was continued till researcher achieved the required sample. At the end of the study, researchers thank the sample and authority who help in the study. The data collection was completed on 23/10/2023.

### PLAN FOR DATA ANALYSIS

The researcher planned to analysis data by using descriptive and inferential statistics. Frequency and percentage distribution were used to analysis to demographic data of the 10-12 year age group

school student in selected school. Knowledge score of 10-12year age group school students about sex education was analyzed by frequency and percentage. Effectiveness of structured teaching program was assessed by 't' test. Association between demographic variable and knowledge score 10-12year age group school student.

### ANALYSIS AND INTERPRETATION

This chapter deals with analysis and interpretation of the data collected from 30 sample who were 10-12 year students of school , the present study has been taken up to assess the knowledge regarding sex education among 10-12 year students in selected school of city. Analysis and interpretation are based on objective of study. A structured questionnaire was used to collect the data, the data was used for analysis with the help of inferential and descriptive statistics.

### ORGANIZATION OF THE FINDINGS

The analysis and interpretation of the observation are given in following section:

**Section A:** Data on demographic variables of 10-12year students.

**Section B:** Assessment of level of pre-test and post-test knowledge regarding sex education among 10-12 year students.

**Section C:** Assessment of effectiveness of Structured Teaching Program on knowledge regarding sex education among 10-12 students.

**Section D:** Association of post-test knowledge regarding sex education among 10-12 students with their selected demographic variables.

#### Section A: Data on demographic variables of 10-12 year students

**Table 1:** Frequency and percentage distribution among 10-12year student according to their demographic characteristics.

N=30		
Demographic variables	No. of 10 - 12 year students	Percentage (%)
<i>Age (year)</i>		
10 year	00	0
11 year	11	36.6
12 year	12	40
Above 12 year	07	23.3

Demographic variables	No. of 10 - 12 year students	Percentage (%)
<i>Pervious knowledge</i>		
Yes	27	90
No	03	10
<i>Source of knowledge</i>		
Book	03	10
Internet	01	3.3
Others	23	76.6
No	03	10
<i>Gender</i>		
Male	17	56.6
Female	13	43.3
Other	00	0
<i>Belonging area</i>		
Urban	30	100
Rural	00	0

**Table 1** reveals that according to age, 12(40%) students belong to 12 year of age group, 11(36.6%) students belong 11 year of age group, and 7 (23.3%) students belong to above 12 year of age group. According to their previous knowledge, 27(90%) students had previous knowledge and 03 (10%) students do not had previous knowledge. According to the source of knowledge, 23(76.6%) student's knowledge source were other source, 3(10%) student's knowledge source were books, 3(10%) student's knowledge source were no, 1(3.3%) student's knowledge source were internet. According to gender, 17(56.6%) students are male by gender and 13(43.3%) students are male by gender. According to the belonging area, 30(100%) student's resident at urban area. It is inferred that maximum students [12(40%)] belongs to 12 year of age group and minimum students [11(36.6%)] belongs 11 year of age group. Maximum students 27(90%) had previous knowledge and minimum students 3(10%) students does not had previous knowledge. Maximum students 23(76.6%) knowledge source were other source and minimum 1(3.3%) knowledge source were internet. Maximum students 17(56.6%) were male by gender and minimum students 13 (43.3%) were female by gender. Maximum students 30(100%) were resident at urban area.

**Section B:** Data on pre-test and post-test knowledge regarding sex education among 10-12 year students

**Objective 1:** To assess the pre-test knowledge score regarding sex education among selected students.

For the purpose of the study the following null hypothesis was formulated. H01-There will be no significant difference between pre-test and post-test level of knowledge regarding sex education among 10 -12 year students at selected school of the city.

**Table 2** Frequency and percentage distribution of pre-test knowledge among 10-12 year students regarding sex education.

Level of pre-test knowledge	Score range	Level of pre-test knowledge score	
		No. of students	Percentage (%)
Very poor	0-6	0	0
Poor	7-12	04	13.33
Good	13-18	21	70
Very good	19-24	5	16.6
Excellent	25-30	0	0
Minimum score			9
Maximum score			22
Mean knowledge score			13.66
Mean knowledge score			45.53

N=30

**Table 2** Reveals that maximum students 21(70%) had good knowledge, 5 (16.6%) had very good knowledge, 4(13.3%) had poor knowledge. It is inferred that, most of the students had good knowledge regarding sex education before administrating structured teaching program.

**Objective 2:** To assess the post-test knowledge score regarding sex education among selected students.

**Table 3:** Frequency and percentage distribution of post-test knowledge among 10-12 year students regarding sex education

N = 30

Level of pre-test knowledge	Score range	Level of pre-test knowledge score	
		No. of students	Percentage (%)
Very poor	0-6	0	0
Poor	7-12	0	0
Good	13-18	0	0
Very good	19-24	03	10
Excellent	25-30	27	90
Minimum score			20
Maximum score			30
Mean knowledge score			27.13
Mean knowledge score			90.43



**Table 3** Reveals that maximum students 27(90%) had excellent knowledge, 3(10%) had very good knowledge. It is inferred that, most of the students had excellent knowledge regarding sex education after administration of structured teaching program.

**Section C:** Data on effectiveness of structured teaching program on knowledge regarding reeducation among 10-12 year students.

**Objective 3:** To assesses the effectiveness of structured teaching program among school students.

**Table 4:** Comparison of mean, standard deviation and t-value on knowledge regarding sex education among 10-12 year students.

Overall	Mean	SD	Mean difference	t-value	p-value
Pre-test	13.66	3.26	13.47	20.43	0.001
Post-test	27.13	2.07			sp <0.05

N =30

**Table 4** reveals that the mean pre-test value is 13.66 (SD=3.26), was increased to 27.13 (SD=2.07) in the post-test. The calculated t-value is 20.43 was greater than table value at p<0.05 level of significance.

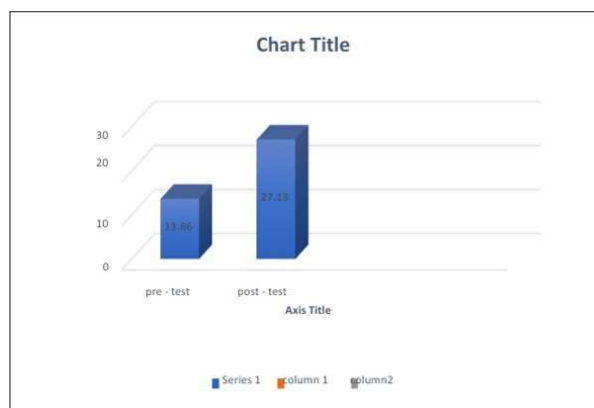
The proposed null hypothesis was H01- There is no difference between pre-test score knowledge and post-test score knowledge regarding sex education among 10-12 year students at selected school of the city. The above-mentioned null hypothesis was

rejected and the research hypothesis was accepted, it states that,

H<sub>1</sub>: There is significance difference between pre-test knowledge and post-test knowledge regarding sex education among 10-12 year students at selected school of the city.

It is inferred that, the structured teaching program on knowledge regarding sex education is effective.

**1. Comparison of mean on knowledge regarding sex education among 10-12 year students**



**Section D:** Data on association between the post-test knowledge of students with demographic variables.

**Objective 4:** To find out association between knowledge regarding sex education among 10 - 12 year students in school of city and their selected demographic variables.

**Table 5:** Association between post-test knowledge of sex education among students with selected demographic variables

Demographic variables	Total students	Level of knowledge					Df	Chi square
		Very poor	Poor	Good	Very good	Excellent		
<i>Age</i>								
10 years	00	00	00	00	00	00	12	116.7 (NS)
11 years	11	00	00	00	01	10		
12 years	12	00	00	00	00	12		
Above 12 years	07	00	00	00	02	05		
<i>Previous knowledge</i>								
Yes	27	00	00	00	03	24	4	25.53 (NS)
No	03	00	00	00	01	02		
<i>Source of knowledge</i>								
Book	03	00	00	00	02	01	12	209.0 (NS)
Internet	01	00	00	00	00	01		
Others	23	00	00	00	00	23		
No	03	00	00	00	01	02		

<i>Gender</i>								
Male	17	00	00	00	01	16		
Female	13	00	00	00	02	11	8	69 (NS)
Other	00	00	00	00	00	00		
<i>Belonging area</i>								
Urban	30	00	00	00	03	27		
Rural	00	00	00	00	00	00	4	3.03 (S)

Significance - S, Non - significance - NS, Degree of freedom - Df

For the purpose of the study the following research hypothesis was formulated

**H<sub>2</sub>:** There is significance difference between post-test knowledge score regarding sex education among 10-12 year students at selected demographic variables. It is inferred that, there was no significant association between post-test knowledge regarding sex education among students and the age of students. The calculated chi square ( $\chi^2$ ) value is 116.7 is not significant at  $p < 0.05$  level.

It is inferred that, there was no significant association between post-test knowledge regarding sex education among students and the previous knowledge of student. The calculated chi square ( $\chi^2$ ) value is 25.53 is not significant at  $p < 0.05$  level.

It is inferred that, there was no significant association between post-test knowledge regarding sex education among students and the previous knowledge of student. The calculated chi square ( $\chi^2$ ) value is 209.0 is not significant at  $p < 0.05$  level.

It is inferred that, there was no significant association between post-test knowledge regarding sex education among students and the gender of students. The calculated chi square ( $\chi^2$ ) value is 69 is not significant at  $p < 0.05$  level.

It is inferred that, there was significant association between post-test knowledge regarding sex education among students and the belonging area of students. The calculated chi square ( $\chi^2$ ) value is 3.03 is significant at  $p < 0.05$  level.

Therefore, the null hypothesis was accepted and research hypothesis was rejected. There was no association between post-test knowledge regarding sex education and most of the demographic factors like age, previous knowledge, source of knowledge and gender.

There was association between post-test knowledge regarding sex education and few of the demographic factor like area of residence.

Thus, it is inferred that the effectiveness of structured teaching program on knowledge

regarding sex education was independent of most of selected demographic variable.

### Statistical Formulas

Statistical analysis of effectiveness of structured teaching program on knowledge regarding sex education among 10 - 12 students in selected school of the city was carried out to find the significant difference between those values. Analysis of the data was done by using descriptive and inferential statistics both.

Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

Descriptive statistics are typically distinguished from inferential statistics. With descriptive statistics you are simply describing what is or what the data shows. With inferential statistics, you are trying to reach conclusions that extend beyond the immediate data alone. For instance, we use inferential statistics to try to infer from the sample data what the population might think. or, we use inferential statistics to make judgments of the probability that an observed difference between groups is a dependable one or one that might have happened by chance in this study. Thus, we use inferential statistics to make inferences from our data to more general conditions; we use descriptive statistics simply to describe what's going on in our data.

### The $p < 0.05$ is considered as level of significance

The statistical tests used for the analysis of the result were:

1. Students paired t test
2. Students unpaired t test
3. Pearson' Correlation Coefficient
4. Reliability Analysis

## CONCLUSION

The present study assesses the knowledge regarding sex education among students of 10-12-year age group in selected schools. On the basis of finding of the study the following conclusion are made majority of students gains knowledge about sex education. They know about good touch and bad touch. In the study pretest mean score is 13.66 and post-test mean score is 27.13 H1 is accepted that means the study was effective.

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