INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

ISSN: 2454-132X
Impact factor: 6.078
(Volume 6, Issue 3)
Available online at: www.ijariit.com

A descriptive study to assess the level of knowledge regarding prevention of Non – Communicable Diseases (NCDs) among students in selected schools of district Sirmour H.P. in a view to develop information booklet

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ABSTRACT

Chronic non-communicable diseases are assuming increasing importance among the adult population in both developed and developing countries. A large percentage of NCDs are preventable through the changes in the life style. The leading cause of NCD death in 2012 were: cardiovascular diseases (17.5 million deaths or 46.2 per cent of NCD death), cancer (8.2 million or 21.7 per cent of NCD deaths), respiratory diseases, including asthma and chronic obstructive pulmonary disease (4 million or 10.7 per cent of NCD deaths), and diabetes (1.5 million or 4 per cent of NCD deaths). The preventive attack on chronic diseases is based on the knowledge that they are multi-factorial in causation, so their prevention demands a complex mix of interventions. Some of the interventions that should be undertaken immediately to produce accelerated results in term of lives saved, disease prevented and heavy cost avoided are as follow: Restrictions on marketing of foods and beverages high in salt, fats and sugar. It is important to have knowledge regarding NCDs from childhood period. So, the present study was taking up to assess the knowledge regarding the prevention of non-communicable diseases. Healthy nutrition environments in schools. Nutrition information and counselling in health care and national physical activity guidelines. The study aimed to determine the level of knowledge regarding the prevention of non-communicable diseases. To determine the association between knowledge regarding prevention of NCDs with selected socio-demographic variables. To develop and provide the information booklet for prevention of non– communicable diseases (NCDs) to the students of selected schools of district Sirmour. Descriptive research design was adopted to collect data from 380 students of the selected schools of District Sirmour (H.P.) using the convenient sampling technique. Data was collected by knowledge questionnaire. Result revealed that the present study findings showed that 87.9% of the students were having average knowledge, 9.5% were having poor knowledge and 2.6% were having good knowledge. There is significant association between age, gender, type of family, residence, family history of any NCDs. p value <0.05 level of significant. Conclusion: The study concluded that most of the students had average knowledge, which needs to be increased. With regard to this view, an information booklet was given to the study students.

Keywords— *Students, Prevention of NCDs, Information booklet*

1. INTRODUCTION AND BACKGROUND OF THE STUDY

Chronic diseases and conditions have been variously defined. A EURO symposium in 1957 gave the following definition: "An impairment of bodily structure and or function that necessitates a modification of the patient's normal life and has persisted over an extended period of time".[1]

In both developed and developing countries the non-communicable diseases were assume increasing among the adult population. Cardiovascular diseases and cancer are the leading cause of death in developed countries. The prevalence of chronic disease was showing an upward trend in most countries and for several reason this trend was likely to increase.[1] During 2012 a total number of 56 million deaths occurred worldwide. Of these, 38 million were due to NCDs, principally cardiovascular diseases, cancer and chronic respiratory diseases. The number of deaths has increased worldwide and in every region since year 2000, when there were 31 million NCD deaths. The leading cause of NCD death in 2012 were: cardiovascular diseases (17.5 million deaths or 46.2 per cent of NCD death), cancer (8.2 million or 21.7 per cent of NCD deaths), respiratory diseases, including asthma and chronic obstructive pulmonary disease (4 million or 10.7 per cent of NCD deaths), and diabetes (1.5 million or 4 per cent of NCD deaths).[1]

India is experiencing a rapid health transition with a rising burden of NCDs causing significant morbidity and mortality, both in urban and rural population. India shares more than two-thirds of the total deaths due to NCDs in the SEAR of WHO (2016). The four main types of NCDs which makes largest contribution to morbidity and mortality are cardiovascular diseases, cancer, chronic respiratory diseases and diabetes. Major metabolic risk factors are obesity, raised blood pressure, raised blood glucose and raised total cholesterol levels.[1]

A large percentage of NCDs were preventable through the changes in these factors. The influences of these factors and other underlying metabolic/physiological causes, on the non-communicable disease epidemic include: insufficient physical activity which approximately contribute to 3.2 million people death each year. People who were less physical active have a 20% to 30% increased risk of all-cause mortality. Regular physical activity reduces the risk of cardiovascular disease, including high blood pressure, diabetes and cancer.[1] Unhealthy diet: Adequate consumption of fruit and vegetables reduces the risk for cardiovascular diseases, and cancer. According to WHO for disease prevention: high salt consumption was an important determinant of high blood pressure and cardiovascular risk factors. 1.7 million deaths from CVD causes have been attributed to excess salt/sodium intake.[1] Raised blood pressure: Raised blood pressure was estimated to cause 9.4 million deaths, about 12.8% of all deaths. It gives its major contribution as a risk factor for cardiovascular disease. In all income group there was similar prevalence of raised blood pressure. During the year 2014, the global prevalence of raised blood pressure in adults 18 year and above was around 22%.[1]

At least 2 million cancer cases per year were having cancer associated infection, 18% of the global cancer burden, were attributable to a few specific chronic infections and this fraction was substantially larger in low-income countries.[1] The preventive attack on chronic diseases was based on the knowledge that they were multifactorial in causation. To promote healthy diets. Healthy nutrition environments in schools. Nutrition information and counselling in health care and national physical activity guidelines.[1] Adolescents were classified as individuals between the age group of (15-18 years). Among adolescents (15-18 years), a substantial share of the global burden of NCDs. NCDs was the leading cause of illness in worldwide and disability among students, which include hypertension, diabetes, cardiovascular diseases, cancer, COPD, it was the first leading cause of death in older adolescents (15-18 years). Prenatal malnutrition and low birth weight create a predisposition to obesity, high blood pressure, heart diseases and diabetes.[2]

WHO Global Action Plan for the Prevention and Control of NCDs initiated in 2013-2020. The global action plan provides member states with a road map and menu of policy option which, when implemented collectively between 2013 and 2020, will contribute to progress regarding NCD targets of 9 global including that of 25% relative reduction in premature mortality from cardiovascular diseases, cancer, diabetes and chronic respiratory diseases by 2025. These four diseases make the largest contribution to mortality and morbidity due to NCDs.[3] A 25% relative reduction in premature mortality from cardiovascular diseases, cancer, diabetes and chronic respiratory disease. A 10% relative reduction in prevalence of insufficient physical activity. A 10% relative reduction in mean population intake of salt/sodium. A 25% relative reduction in prevalence of raised blood pressure. Halt the rise of diabetes. Among eligible people 50% receive drug therapy and counselling to prevent heart attacks. An 80% availability of the affordable basic technology and essential medicines including generics, required to treat major NCDs in both public and private facilities.[3]

1.1 Need for the study

Burden of NCDs in worldwide NCD mortality and morbidity of 56.9 million global deaths in 2016, 40.5 million, or 71%, were due to non-communicable diseases (NCDs). The four main NCDs are cardiovascular disease, cancer, diabetes and chronic lung diseases. The burden of these disease was rising disproportionately among lower income countries and population. In 2016 the leading causes of NCDs deaths in were cardiovascular diseases (17.9 million deaths, or 44% of all NCD deaths), cancer (9.0 million, or 22% of all NCD deaths), and respiratory disease, including asthma and chronic obstructive pulmonary disease (3.8 million of 9% of all NCD deaths). Diabetes caused another 1.6 million deaths.[4]

The world health organization (WHO) has released report of 2015 non – communicable diseases (NCDs) global survey. The agenda for sustainable development aims to reduce premature death from NCDs by one – third by 2030. Worldwide 4 NCDs namely cardiovascular disease, diabetes, cancer and respiratory disease are the major cause death. All of 194 states member, 174 responded to the survey which makes response rate of 90%. Percentage of death from NCDs 60%. Total number of NCDs deaths: 5 869 000. Probability of premature mortality from NCDs 26%.[5]

The World Health Organization (WHO) has released report of 2017 nearly 61% of death in India are now attributed to non-communicable diseases, including heart disorders, cancer and diabetes, according to new data released by the World Health Organization. Almost 23% are at risk of premature death due to such diseases.[6]

Global Status Report on NCDs, 2014: Non-communicable diseases (NCDs) contribute to around 5.87 million deaths that account for 60 % of all deaths in India. In the South-East Asia Region (SEAR) of WHO the India shares more than two third of total deaths due to NCDs. The four main types of NCDs which makes largest contribution to morbidity and mortality are cardiovascular diseases, cancer, chronic respiratory diseases and diabetes. The major cardiovascular diseases which includes coronary heart disease, stroke, and hypertension mainly contribute to 45% of all NCD deaths followed by chronic respiratory disease (22 %), cancers (12 %) and diabetes (3%).[7] In India nearly one out of every ten persons aged 18 years and above has raised blood glucose, which poses extra financial and service burden on health systems. The age related prevalence of raised blood glucose for both sexes was 9.0 %. Every fourth individual in India aged above 18 years has raised blood pressure (hypertension) and the prevalence has increased by 10% from 2010 to 2014. As per WHO standards in India more than two-thirds of the adolescents aged 11-17 years were physically inactive. The level of physical inactivity among adults was around 3 %.[8]

Health of the Nation's States released on November 2017 shows data to prove that non-communicable diseases now contribute more to India's disease burden than communicable diseases. The both two states of Himachal Pradesh and Punjab have a relatively higher level of development indicators and were also at a similar more advanced epidemiological transition stage. However, Punjab had 157 per cent higher per person burden from IHD, 49 per cent higher burden from stroke, and 56% higher burden from road injuries. On the other hand, Himachal Pradesh had 63% higher per person burden from COPD.[9]

After reviewing and observing the condition of community people, research investigator found that the students are unaware of the prevention of non-communicable disease and the rate of communicable diseases is high in India. So research investigator wants to conduct research study in this area.

Conceptual/Theoretical framework: Conceptual framework is based on Modified Health Belief Model. This is done by focusing on the attitude and belief of the individuals. Model is a theoretical/conceptual way of understanding the concept or idea of the study. Health beliefs: These are person's ideas, convictions and attitudes about health and illness.

1.2 Health Belief Model

Health belief model is a psychological health behavior change model which is developed to explain and predict the health-related behaviors, particularly in regard to the uptake of health services. It was developed in 1950's by social psychologists at the U.S. Public Health Service and remains one of the best known and most widely used theories in health behavior research. Theoretical construct: The following constructs of the health belief model are proposed to vary between individuals and predict engagement in health-related behaviors. It includes components: Perceived Susceptibility, Perceived Severity, Perceived Benefit, Perceived Barriers, Modifying variables, Cues to action.[10]

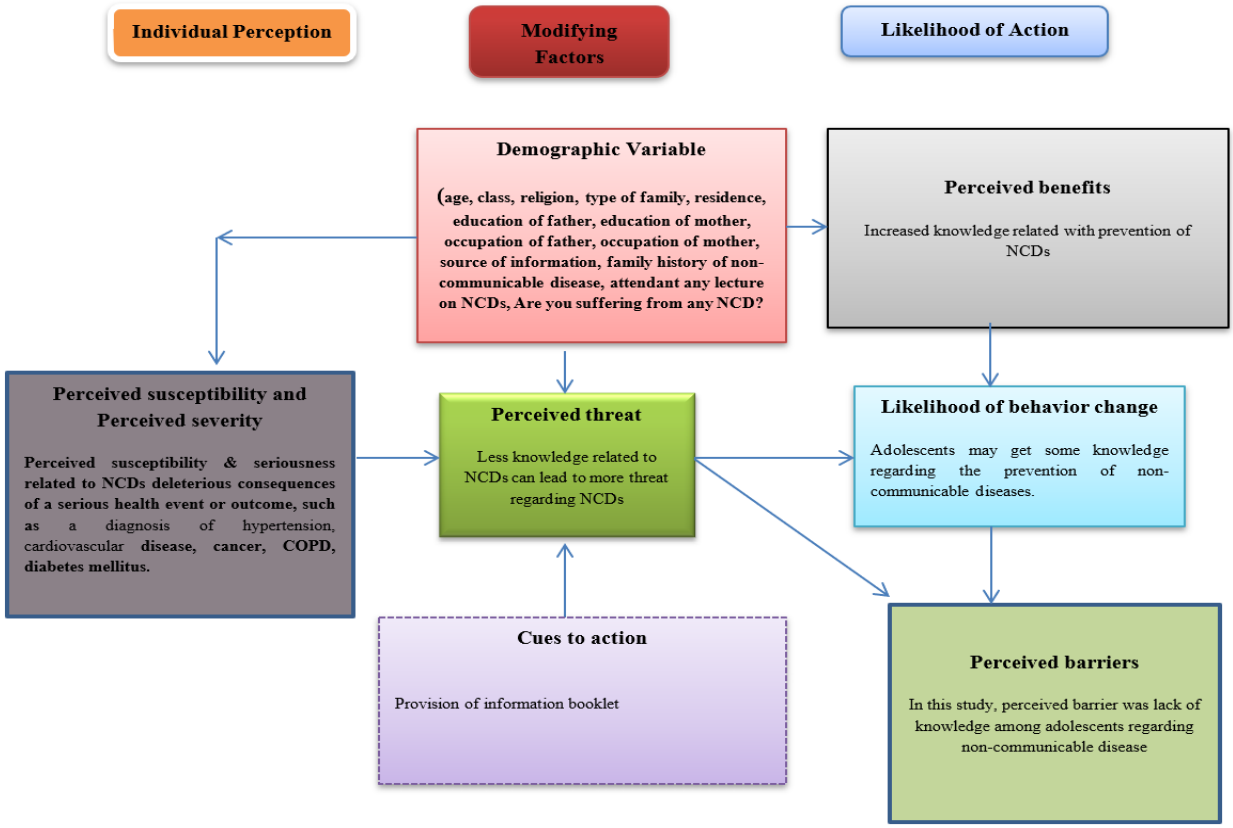

Fig. 1: Conceptual framework based on Health Belief Model

2. REVIEW OF LITERATURE

2.1 Section A: Literature related to the prevalence of non-communicable diseases

A cross sectional study was conducted (2018) to assess the prevalence of major non-communicable diseases among adolescents of higher secondary schools of Kaski district in Nepal. Sample of 640 was collected by two stage cluster sampling. The data was used for the self –administered questionnaire, UNICEF electronic weighing scale, stature meter and sphygmomanometer. The results of the study showed that the prevalence of smoking were 6.1% them were having male (11.9%) than female (0.6%). 18.9% them were having alcohol consumption practice among the adolescents were 18.9%. The 11.7% them were having prevalence of hypertension. 6.1 overweight were seen in students.[11]

2.2 Section B: Literature related to the prevention of non-communicable diseases

A study was conducted (2016) to assess the knowledge regarding non– communicable diseases among students of higher secondary school of Patan city, Gujarat in India. This interventional study was conducted. The sample of 116 were collected by purposively sampling technique. The result of the study revealed that the knowledge of the students regarding the prevention of NCDs. Most of them were having 25.9% hypertension, 23.3% they were having obesity, 65.5% they were having stress and 21.6% they were having lack of physical activity.[12]

3. RESEARCH METHODOLOGY

This chapter deals with the methodology including research approach and design, research settings, population, sample, criteria for sample selection, sampling technique, sample size, description of tool, ethical consideration, pilot study, procedure for data collection, plan for data analysis and chapter summary.

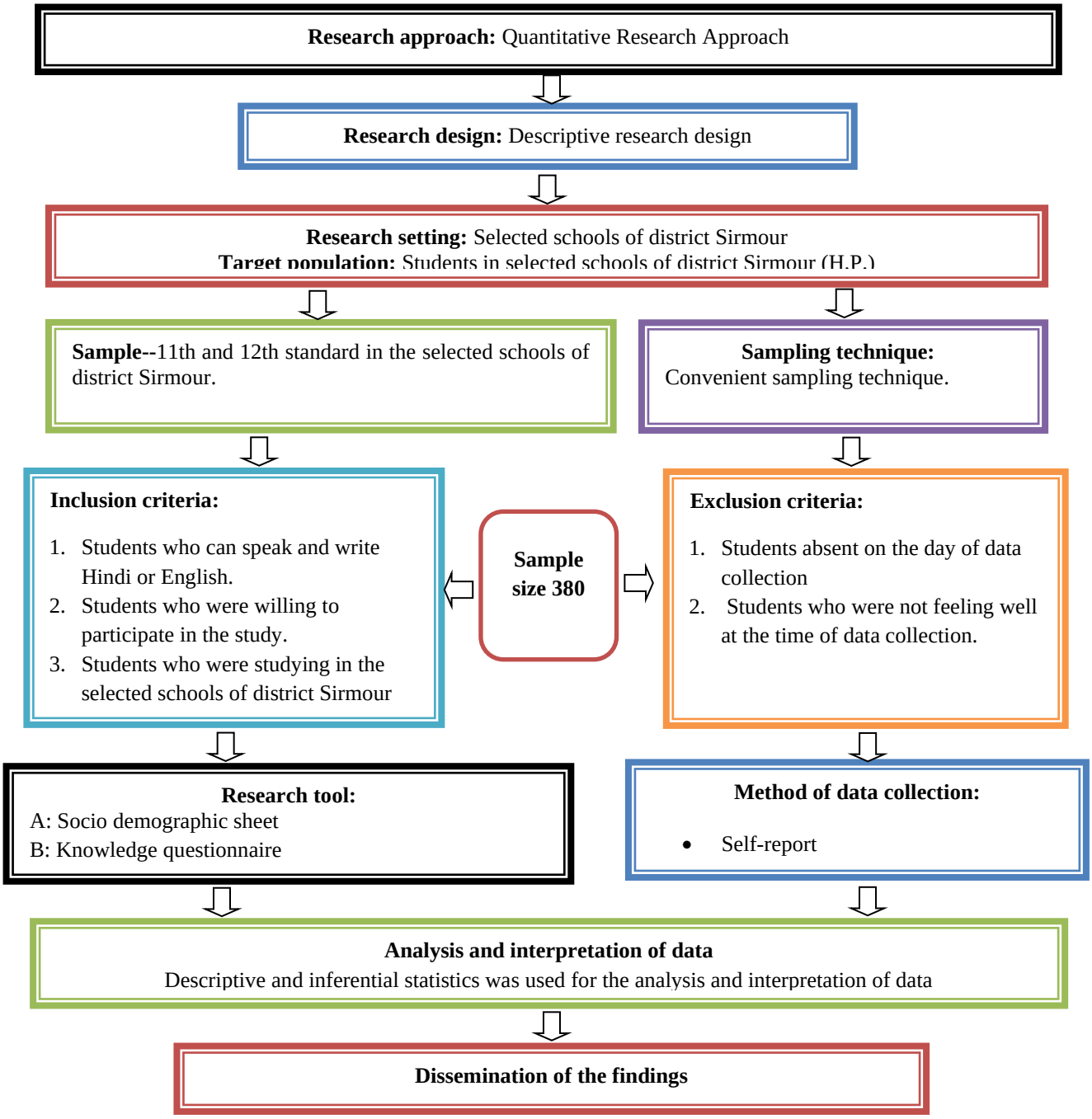

Fig. 2: Schematic representation of research methodology

4. DATA ANALYSIS AND INTERPRETATIONS

In current study data analysis is described under following sections:

SECTION A: Frequency and percentage distribution of students based on socio demographic variables.

SECTION B: Knowledge regarding the prevention of non - communicable diseases (NCDs) among students.

SECTION C: Association between knowledge regarding prevention of NCDs and selected socio-demographic variables.

Table 1: Frequency and percentage distribution of students based on socio demographic variables

S. No.	Socio-Demographic Variables		Frequency (f)	Percentage (%)
1.	**Age**	15 years	86	23
		16 years	127	33
		17 years	129	34
		18 years	38	10
2.	**Gender**	Male	196	52
		Female	184	48
3.	**Class**	11^{th} standard	212	56
		12^{th} standard	168	44

4.	**Religion**	 Hindu Muslim Sikh Christian	380 0 0 0 0	100 0 0 0 0
5.	**Type of family**	Nuclear family Joint family	196 184	52 48
6.	**Residence**	Rural Urban	130 250	34 66
7.	**Education of father**	Illiterate Primary Middle Secondary Senior secondary Graduation	26 77 85 88 72 32	7 20 22 23 19 8
8.	**Education of mother**	Illiterate Primary Middle Secondary Senior secondary Graduation	34 118 99 66 49 14	9 31 26 17 13 4
9.	**Occupation of father**	Farmer Shopkeeper Businessman Serviceman	183 83 57 57	48 22 15 15
10.	**Occupation of mother**	Homemaker Govt. employee Private employee Self-employee	294 34 6 46	77 9 2 12
11.	**Source of information**	Family Mass media Teacher	100 82 198	26 22 52
12.	**Family history of any non-communicable diseases?**	Hypertension Diabetes mellitus Cancer Cardiovascular disease COPD Other	18 21 1 19 1 320	5 6 0 5 0 84
13	**Have you attended any educational program on non-communicable diseases?**	No	380	100
14.	**Are you suffering from any illness?**	No	380	100

Table 1 Shows that the distribution of respondents according to socio-demographic variables in various categories according to age, gender, class, religion, type of family, residence, education of father, education of mother, occupation of father, occupation of mother, source of information, family history of any non-communicable diseases, have you attended any educational program on non-communicable diseases, are you suffering from any illness.380 study subjects were taken for the study. (34%) of the study subject were in the age group of 17 years, followed by 33% in the age group of 16 years, 23% in the age group of 15 years and10% in the age group of 18 years. As per gender distribution 52% of the study subjects were male and 48% were female. Half of the students i.e. 56% were in the 11thstandard whereas 44% in the 12th standard. All of the study subjects belonged to Hindu religion.

According to type of family half (52%) of students belonged to nuclear family and 48% of students were from the joint family. 66% of the students were living in urban area and 34% were living in rural area. 23% of the subject's fathers had secondary education, 22% had middle education and 7% of the fathers were illiterate. 31% of the mothers had primary education, 26% had middle education, 17% had secondary education, 13% had senior secondary education and 9% were illiterate. According to the occupation of their fathers, 48% of them were farmers, 22% were shopkeepers, 15%were businessman and 15% were service man. Majority the occupation of their mothers 77% of them were homemakers, 12% were self-employed, 9% were government employees and 2% were private employees. Half i.e. 52% of the students got information regarding the NCDs from their teachers, 26% from the family and 22% got information from the mass media. 6% of the students had family history of diabetes mellitus, 5% had hypertension and cardiovascular diseases where as 84%. Majority of the students did not have any family history of NCDs. Neither of the study subjects had attended any lecture on NCDs and nor they were suffering from any illness.

Table 2: Mean, SD, Range and Mean% knowledge of score of the study subjects, N=380

Descriptive statistics	Mean	Median	S.D.	Maximum	Minimum	Range	Mean (%)
Knowledge score	26.91	26	5.527	48	13	35	53.81

Maximum=50 Minimum=0

Table 2 Represents that the mean knowledge score of the study subjects i.e. was 26.91, median score was 26, standard deviation was 5.527, maximum score was 48, minimum score was 13, range score was 35 and mean percentage was 53.81.

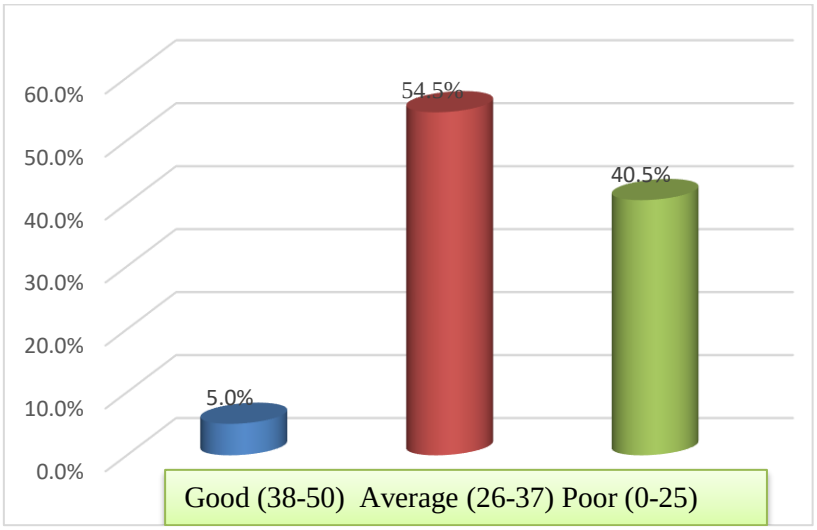

Fig. 3: Distribution of study subject according to level of knowledge regarding prevention of NCD's. N=380

Figure 3 Illustrates that 54.5% students were having average knowledge; 40.5% students were having poor knowledge and 5.0% students were having good knowledge regarding prevention of non-communicable diseases.

Table 3: Association of knowledge Scores of students with socio- demographic Variable, N=380

S.no.	Socio-demographic variables	Knowledge			Association with knowledge score Chi Square p value df
		Good	Average	Poor	
1	**Age (in year)** 15 years 16 years 17 years 18 years	 2 4 10 3	 43 74 70 20	 41 49 49 15	 6.786 0.3416NS
2	**Gender** Male Female	 3 16	 106 101	 87 67	 11.245 P=0.004*
3	**Class** 11th standard 12th standard	 8 11	 117 90	 87 67	 1.518 0.468NS
4	**Religion** Hindu	 19	 207	 154	 NA
5	**Type of family** Nuclear family Joint family	 3 16	 106 101	 87 67	 11.245 P=0.004*
6	**Residence** Rural Urban	 19 0	 56 151	 55 99	 41.405 P=0.001**
7	**Education of mother** Illiterate Primary Middle Secondary Senior secondary Graduation	 2 10 2 4 1 0	 13 58 63 37 31 5	 19 50 34 25 17 9	 17.269 0.069NS
8	**Occupation of father** Farmer Shopkeeper Businessman Serviceman	 11 5 0 3	 97 42 36 32	 75 36 21 22	 4.944 0.551NS
9	**Occupation of mother** Homemaker	 17	 153	 124	 12.270

	Govt. employee Private employee Self-employee	2 0 0	15 4 35	17 2 11	0.056NS
10	**Source of information** Family Mass media Teacher	10 1 8	51 49 107	39 32 83	8.555 0.073NS
11	**Family history of any non-communicable diseases?** Hypertension Diabetes mellitus Cancer Cardiovascular disease COPD	0 0 0 1 0	6 13 0 13 0	12 8 1 5 1	11.576 0.314NS
12	**Have you attended any educational program on non-communicable diseases?** No	19	207	154	NA
13	**Are you suffering from any illness?** No	19	207	154	NA

**=Significant at p<0.05*
NS=Not significant
NA= Not applicable

Table 3 Shows the association between the level of score and socio demographic variable. Chi-square test was used to find the association level of knowledge score and selected demographic variables. The chi-square value shows that there is significance association between the knowledge score level and socio-demographic variables (gender at 0.004, type of family at 0.004, residence at the level of p=0.001). There is no significance association between the level of scores and other demographic variables (age, class, religion, education of father, education of mother, occupation of father, occupation of mother, source of information, family history of any NCDs) have you attendant any educational program on NCDs, are you suffering from any illness).

5. STRENGTH OF THE STUDY

(a) This study helped to give a path for further interventional studies that can be conducted related to prevention of non-communicable diseases.
(b) This study helped to find out the knowledge regarding the prevention of non-communicable diseases among students.
(c) This is the first study was conducted in District Sirmour that helped in finding knowledge related to the non-communicable diseases.

6. LIMITATIONS

(a) The study was limited to 15-18 years students in limited area of district Sirmour H.P.
(b) Most of the students were absent during data collection.

7. Nursing Implications

The findings of the study have the practical application in nursing field. Which can be discussed under the following heading.

7.1. Nursing practice

- Nurse can provide knowledge regarding the prevention of NCDs to community.
- Nurse can conduct continuing nursing education on prevention of NCDs. The study allows for evidence based practices.
- The study implies that the nurses working in community area need to create more awareness among the rural and urban population specially students regarding the importance of dietary modification in the prevention of non-communicable diseases, hence focusing on primordial prevention.

7.2. Nursing education

- Nurse educator can teach the school's students regarding non-communicable diseases to enhance the skills in detection of problem.
- Nursing students should be made aware of the importance of health lifestyles to prevent NCDs.
- In nursing curriculum prevention of NCDs should be included as a focused area to improve the knowledge of nursing students.
- Nursing students can educate the community regarding the prevention of NCDs and so that they can help to guide and provide information for other.

7.3. Nursing administration

- Nurse administrator can provide facilities and promote education to students regarding the prevention of non-communicable diseases.
- Nurses as a supervisor can play a role in enhancing the knowledge regarding the prevention of NCDs by providing services.

- Administrator can organize educational programs in community area as well as in institutions and hospitals on importance regarding the prevention of NCDs and why it is needed. Nursing

7.4. Nursing research

- There is need of extensive research in this area so that strategies can be made to teach the nurse and community regarding non-communicable diseases.
- As a nurse researcher nurse should disseminate the finding through workshops, conferences, seminars and World Wide Web.

8. RECOMMENDATION

In the light of the above findings and personal experience of the investigator the following recommendations are offered:

- This study can be replicated on a large sample.
- A comparative study can be done between urban and rural students to assess the knowledge regarding the prevention of non-communicable diseases.
- A cross-sectional study can be done to assess the awareness regarding the non-communicable diseases among rural adolescents.
- A quasi experimental study can be done to prevent the NCDs through structure teaching program in schools.
- Interventional study can be done to assess the effectiveness regarding the prevention of non-communicable diseases among students.

9. CONCLUSION

The study concluded that most of the students had average knowledge regarding the prevention of non-communicable diseases among students, which needs to be increased. With regard to this view, an information booklet was given to the study students.

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