

**Effectiveness of Teaching about Non communicable Disease among
Public and Private Secondary School**

A Thesis

**Submitted to Department of Health and Population Education
in the Partial Fulfillment of the requirements for Master of Education in Health Education**

**Submitted by
Chatur Timalina**

**Tribhuvan University
Faculty of Education
Central Department of Education
Health and Population Education Department
Kirtipur, Kathmandu
2021**

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Central Department of Education

Health and Population Education Department

Kirtipur, Kathmandu

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TRIBHUVAN UNIVERSITY
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Recommendation

The research work entitled '**Effectiveness of Teaching about Non Communicable Disease among Public and Private Secondary School**' is prepared by **Chatur Timalina** under my supervision, as part of the requirement to complete Master of Education. To the best of my Knowledge, the study is original and carries useful information on the Effectiveness of Teaching about Non Communicable Disease among Public and Private Secondary School in Kirtipur Municipality. I forward to thesis committee for final evaluation with recommendation

Date: 12/11/2021

.....

Prof. Dr. Deep Bahadur Adhikari

Supervisor

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Approval Sheet

This dissertation work entitled '**Effectiveness of Teaching about Non Communicable Diseases among Public and Private Secondary School**' submitted by **Chatur Timalina** in partial fulfillment of the requirement for the degree of Master Degree in Health education has been approved.

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Declaration

I, here by, declare that, to the best of my knowledge, this thesis is original work, and it has not been submitted for the candidature of research degree to any university, colleges or educational institutions. The subject matter presented in this thesis report is the result of my own work.

Date: November, 2021

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Chatur Timalisina

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Date: November, 2021

Chatur Timalina

Abstract

The study is entitled "Effectiveness of teaching about non communicable diseases among public and private secondary schools of Kirtipur Municipality". The main objectives of the study was find out the knowledge of non communicable diseases among secondary school level students to assess effectiveness of teaching non communicable diseases among the students and to compare the knowledge and practice about non communicable diseases between public and private secondary level students. Where data were collected through structural questionnaire and interview schedule. This study was based on descriptive and analytical research design with quantitative nature which was conducted to access the effectiveness of teaching non communicable diseases on the basis of academic qualification of teaching materials and methods used by health and physical education teachers. Likewise, students satisfaction towards their optional subject health and physical education and subject teacher and academic achievement of students. The collected data were presented in percentages figure and table.

From the study it was found that number of Janajati caste respondents were more than other,97.14% respondents told right answer about non communicable diseases among them private schools respondents have found more knowledgeable than public schools respondents about non communicable diseases.75%respondents were satisfied teachers teaching about non communicable diseases class out of both respondent schools and study class.79.28% respondents replied avoiding smoking was the best possible preventive measure of lung cancer,83.57% respondents present over weight and obesity was main causes of diabetes.88.57% respondents present unexpected loosing weight is the symptoms of diabetes. Out of total number of respondent 75% marked hypertension is silent killer disease. Out of total respondent 52.85% marked keeping environment clean were of preventive measure against asthma. Out of total respondent school and class of HPE likewise 52.85% found doing exercise in school and 47.14% respondent not doing exercise in school.

Most of the respondent student present dissatisfied text books curriculum content of non communicable diseases. Most of the respondent marked school not conduct non communicable diseases prevention intervention programme rather than teaching ,most of the teachers was dissatisfied by teaching methods and materials.

School administration had not conducted health check up in school by paramedics or doctor, in comparison of both respondent school and students found that home/canteen made food use as tiffin more than packed food in the school. The study found that public and private both schools health and physical education teachers teaching experienced good. Use of teaching materials, method and essential mode of communication between students and teacher on the subject matter was found average. Similarly, in the selected school there is a lack of teaching materials and coordinate with paramedics, health workers and doctors while teaching non communicable diseases related topics. Updated books and practical knowledge for the effective teaching and learning. It is suggested to update the course books and field works. More over teaching materials should be provided and students should be encouraged to communicate with teaching.

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Abbreviations

CAD	:	Coronary Artery Disease
CDC	:	Curriculum Development Center
EPH	:	Environment, Population and Health Education
HPE	:	Health and Physical Education
INGOs	:	International Non-Government Organization
NCDs	:	Non-Communicable Diseases
NGO	:	Non-Government Organization
TU	:	Tribhuvan University
WHO	:	World Health Organization
WWW	:	World Wide Web

Chapter I: Introduction

Background of the Study

Non Communicable Disease (NCDs) are the leading cause of death and disability world wide NCDs are linked by modifiable risk factors including tobacco use, physical inactivity and unhealthy diet as peer the global status. The prevalence of non communicable disease (NCDs) is still unknown in Nepal. The Ministry of health and population, Government of Nepal has no yet formulated policy regarding NCDs in the absence in evidence based finding non communicable diseases, NCDs refer to diseases or conditions that occur in are known to affect individuals over an extensive period of time and for which there are no causative agents that are transmitted from one affected individual to another.

Education is considered as a basic need and human right. It is necessary for adjusting man to the truth. Education implies teaching, teaching knowledge Therefore, there is no education without teaching. Teaching is an art of stimulating and directing the activity of men power so that they are developed and made perfect. A teacher always committed to human betterment. A teacher has to passes vast knowledge on the field of content and pedagogy. We can't even imagine the quality of education without having competent standard. It is made up attribute such a knowledge, attitude, ability and skill Khanal,(2003).

The risk factors for many of the NCDs are associated with lifestyle related choice, environmental and genetic factors, tobacco use, harmful use of alcohol, unhealthy diets(high in salt, sugar and fat and low in fruits and vegetables) and physical in activity are some of the established behavioral risk factors of NCDs. The interventions includes measures to improve tobacco control, increasing public awareness of the health benefits of physical activity, multidrug therapy for people at high risk of cardiovascular disease and the screening and treatment of cervical cancer.

Non communicable diseases (NCDs) cause about 40 million deaths each year globally. The four most important modifiable behavioral risk factors for NCDs indulged unhealthy diet, physical inactively, tobacco use and harmful use of alcohol. According to the estimates from the most recent Global Burden of Disease study, out of all the deaths due to non. communicable disease in 2015, approximately 12 million were due to alcohol

and drug use and 1.6 million deaths were attributed to low physical activity. The major risk factors for non communicable diseases are associated with behavioral patterns that are largely established during childhood and adolescence and continue into adulthood. The onset non communicable disease like diabetes, obesity, and cardiovascular disease can be prevented or delayed by addressing these risk factors earlier in life. Children and adolescents should be prioritized as target groups for behavioral interventions due to their high adaptability and likelihood to be motivated for appropriate healthy modifications. In support for this, evidence shows that behavioral changes during early years require conducive policies and programs. Hence, in addition to prioritizing children for the adoption of healthy behavioral practices, they should be provided with a supportive environment for behavior change in settings where children live, play and study. Bhandari & Andembele, (2014).

Schools are uniquely positioned as ideal setting to model, promote and reinforce healthy behaviors among children and adolescents. Children adolescents spend much of the daytime and school and can easily access the schools health-related educational programs. Therefore school function as health hubs by education and imparting healthy habit among students as they service a large population of children and adolescents. Evidence suggests and school policies can positively impact Body Mass Index (BMI), physical activity and dietary behaviors among children. Previous studies have mostly looked at the relationship between school policies and specific risk factors. There exists no review that has systematically identified and collated evidence on the effectiveness of school-based policy interventions collectively for the four major preventable non-communication disease risk factors(unhealthy diet, physical inactivity, tobacco use and alcohol use) furthermore, no systematic review has examined the impact of school policies on the anthropometric and physiological measure in children therefore the aim of this systematic review was to identify collate and synthesize the existing literature on the impact of school policies on major risk factors of non communicable diseases. Greenbery & Lededer, (2016).

Now days NCDs is increases in number all countries and society. Each and every NCDs affect human health and children's life. Curriculum development center and school administration necessary need to aware content selection in text book and how to teach the school level students. So, this study review will be fruitful achievement to the readers.

Statement of the Problem

Non communicable diseases NCDs such as cancer, diabetes, respiratory and cardio vascular disease and mental illnesses are the leading cause of death and disability world wide, surprisingly, the burden is especially high in developing countries, which bear 80 per cent of deaths due to NCDs, four main factors are at tobacco use, physical inactivity, unhealthy diets and alcohol use.

Global health attention and assistance are poised to enter their third phase since World War II that of chronic disease, usually referred to as non communicable disease (NCDs). The first two phases, the humanitarian from until the 1990s and HIV and AIDS from the 1990s until the present, will retain relevance and continue to offer challenges, but the insights, tools and recognition needed to control them are in place. Importantly, the developing world has taken ownership of them. Extending back in time further than most realize, non communicable diseases (NCDs) have assumed an ascendant position. Not only are cardiovascular disease (CVD), diabetes lung disease and cancers taking an ever increasing toll on working age population, but the prevalence of traditional risk factors, now known to be universally predictive, is increasing in virtually every region of the world, by orders of magnitude, the greatest causes of mortality and morbidity around the world are now NCDs driven by their traditional risk factors Bhandari, (2012).

Health education is a very important subject matter in our Nepalese context of HPE education was included in the list of compulsory subject in the secondary level since 2058 BS but still the faculty of education has not offered integrated health education so in one hand there is security of health education and Environment education teacher s and on the other hand teaching skills in question this problem remains in almost all district of the country. Most of the teachers are not trained on organized way and hence they pose a problem and start coming of the Secondary level School teacher of EPH Teacher have lack of proper professional training. Organizational and structural problem improper managerial skills, lower investment, lack of in-service training and lack of essential infrastructure. In the context of Nepal NCDs awareness prevention and intervention programmes are conducted by

collaboration with different NGOs and INGOs those are limited in urban school Bista, (2009).

Objectives of the Study

The main objective of this study was to effectiveness of teaching non communicable diseases in public and private secondary level students of Kirtipur municipality. The specific objectives are given below.

- To find out the knowledge of non communicable disease among public and private secondary level students.
- To Identify the effectiveness of teaching non communicable disease among the students.
- To compare the knowledge and practice about non communicable disease between public and private secondary level students

Signification of the Study

This study dealt with the effectiveness of teaching non communicable diseases among secondary level students. The study intended to identify the effectiveness of teaching non communicable diseases among public and private secondary level students. This study will be helpful to those students and teacher and administrator who are involved in educational institution and teaching activities, non communicable diseases prevention intervention receive some useful information about effectiveness of activities of non communicable disease in school students. The finding of this study will be helpful to know the concept of non communicable disease and inclusion of non communicable disease.

The major significance of the study are as follows.

- The study result provides the information in effectiveness of teaching non communicable disease in school students of Mangal secondary school and Creative Academy, Kirtipur including non communicable disease.
- The study can provide base in realizing importance of health education to students.
- This study was beneficial for teacher who teach health education including non communicable disease.

- The result of the study would be helpful for the students, teachers school, and others organization. Policy makers health planners and other interested people to identify situation of non communicable disease.
- The result of the study would be helpful for government and concerned program agencies for formulate policies to apply in the field of non communicable diseases.
- The result of the study would be helpful to carry out further studies in similar filed.

Delimitations of the Study

The study necessary to cover wider area for such a study but time and resources are limited to this study would be limited only effectiveness of teaching non communicable disease among secondary level students of Mangal secondary School and Creative Academy of Kirtipur municipality. The study would be delimited on the following points.

- The study was conducted only one public secondary school and one private secondary level school of Kirtipur municipality.
- The study was limited in EPH teachers of public and private school and EPH class students of both class 9.
- The study was conducted only EPH text books NCDs curriculum content of class 9 and teaching material and method.

Definition of the Key Terms

Some terminologies are used in the study are defined. This terminologies bear different meaning in different contexts. However, in this study, these use terminologies bear following meanings.

Effectiveness : Any work in done with sequential progressive and successful of that is called effectiveness.

Prevention : When an action stops something from happening is called prevention.

Intervention: The action of becoming intentionally involved in a difficult situation, in order to improve it or prevent it from getting worse.

Chapter II: Review of Related Literature

Literature review is the most important components of the research from which the researcher would be provided with other more experiences. Some of the facts and study report related to the study are reviewed in this chapter. Some of the facts opinions, principle and study report directly and indirectly related to this study are reviewed and presented here.

Theoretical Literature Review

According to Amanda & Kate(2011), much of the NCDs burden can be prevented through interventions that are affordable in most countries. The United States can help now by taking five low cost or no cost steps. End tariff reducing trade practices for tobacco, partner with public and private donors, leverage US influence in multilateral department institutions, exploit synergies between disease control and other development project and encourage evidence- informed budget allocation.

Thomas (1985) started that some of the teaching problems are quite obvious. It is evident that every teacher is concerned with planning and directing students activities, detecting what should be done, how it should be done and who should done it, but we were to observe a good teacher at work for several days. We should soon see that he is concerned with variety of challenging problems that must be handled intelligently to make his work successful. The problems concerning the learners individuals personalities, the nature and importance of learning adoptions outcome from different kinds of experience, needs of youth and adults, the planning, selecting, directing ad evaluating of classroom teaching learning experience, motivation and guidance of students the classroom management and related activities and the school and community relationship affect ever teachers. At last he suggested that we could not guide or direct learning successfully without considering all the factors which affect a teacher situation.

According to David & Reddy (2013), non communicable disease will be the predominant global public health challenge of the 21st century. Prevention of premature deaths due to non communicable disease and reduction of related health care costs will be the main goals of health policy. Improving the detecting and treatment of non communicable diseases and preventing complications and

catastrophic events will be the major goals of clinical medicine. A multilevel approach that integrates policy actions, regulations, health education and efficient health systems to achieve these goal will be mission of public health. All countries can benefit by sharing experience and pooling expertise for the prevention and control of non communicable diseases..

According to Commen & Vyas(2018), Master of public health (MPH) programs include a component on non communicable diseases (NCDs) which are now the major causes of deaths worldwide. Training regarding NCDs is necessary of public health professionals are expected to implement prevention and control programs. Although curriculum used courses are often published. descriptions of the process of curriculum design are not available in the published, descriptions of the processes of curriculums design are not available in the public domain. Availability of the curriculum along with documented processes of curriculum design would be of use to medical educators to design such curriculum and apply these process for other curriculum.

Empirical Literature Review

Bista (2009) conducted a research entitled "Are trained teacher different from untrained teacher's. A comparative study of classroom. He found that the secondary level trained teacher found them selves more skilled in performing a number of teaching skilled performing of teaching competencies.

The Himalayan Times (2017) Published The world Health Organization (WHO) estimates that 60 percent of the deaths occurring in Nepal can be attributed to non communicable disease. These chronic disease predominantly have various modifiable determinants. The WHO has classified the risk factors caused by these determinants into two categories. Behavioral and biological risk factors. Behavioral risk factors include tobacco us, physical inactivity, unhealthy diet, and alcohol abuse, whereas biological risk factors include elevated blood pressure, obesity, raised blood glucose level, and scrum cholesterol. The Government needs to target the existing human resource, reequip them to help promote health and prevent disease. If we are able to harness the complete potential of primary health care. It can become a golden platform for further health responses to non communicable diseases.

Bhandari (2014) studied on the non communicable diseases (NCDs) refers to diseases of condition that occur in, or are known to affect individuals over an extensive period of time and for which there are known causative agents that are transmitted from one affected individual to another. The risk factors for many of the non communicable diseases are associated with lifestyle related choices environmental and genetic factors. Tobacco use, harmful use of alcohol, unhealthy diets (high in salt, sugar and fat and low in fruits and vegetables) and physical inactivity are some of the established behavioral risk factors of non communicable diseases. A large proportion of global morbidity and mortality could be attributed to non communicable diseases. It was estimated that globally in 2008, cardiovascular diseases or CVDs (17 million deaths, or 48% of NCD deaths), cancers (7.6 millions, or 21% of NCD deaths), respiratory disease, including asthma and chronic obstructive pulmonary disease (COPD)(4.2 million) and diabetes (1.3 million deaths) were primarily responsible for staggering 36 million deaths (63% of global deaths). Traditionally regarded as a woe of the high income countries, non communicable diseases are becoming increasingly prevalent in low and middle income countries with the emergence of lifestyle changes. NCDs are turning out to be the principal causes of deaths in these countries where an estimated 80% of non communicable disease deaths occurred.

Neupane & Bhandari (2018) found the prevalence of non communicable disease (NCDs) as 72 (22.3%). Hence, 3,222 (99.6%) government employees had exposed least one established risk factor of non communicable diseases. The prevalence of use of any type of tobacco products was 60 (18.5%) and consumption of alcoholic products was 187 (57.9%). More that two thirds respondents answered that they consumed fruits once a week. Most government employees consumed vegetable regularly. The majority 193 (59.6%) respondents use motorcycle and electric rickshaw of transportation. Out of the total participants 60 (18.6%), 19(5.9%) and 6 (1.9%) reported hypertension, diabetes and cardiovascular diseases respectively.

Maharjan (1999) had made a study on "an analytical study of existing" teaching learning situation in lower secondary school of Kathmandu valley. The main purpose of this study was to find out existing situation of teaching physical education. It was found that majority of the teachers teaching physical education in lower

secondary level did not have education background. Theoretical and practical knowledge of different aspects physical education has been found poor. Teachers have been found very poor in pedagogical aspect.

The Himalayan Times has mentioned August 5, (2019) about the first national representative study on prevalence of selected chronic diseases in Nepal has revealed that there is high prevalence of non communicable diseases across the country. A research conduct by Nepal Health research council, which support from the ministry of health and population has revealed that chronic obstructive pulmonary disease is the most prevalent (11.7 per cent), followed by Diabetes Mellitus (8.5 per cent), Chronic Kidney Disease (6 per cent) and Coronary artery disease (2.9 per cent) among Nepalese. It reveals that males have higher prevalence of non communicable disease prevalence of Diabetes is more in man then in females 11 per cent and 6.7 per cent, respectively. prevalence of chronic kidney disease in man is 6.5 per cent and females its 5.7 per cent Prevalence of COPD is more in man 12.5 per cent compared to 11 per cent in women, However the prevalence of possible probable and definite coronary artery disease is comparatively higher in women than Men. The findings reveal that use of tobacco alcohol consumption, risk of COPD raised blood pressure, raised blood glucose, abnormal lipids and body mass index have an association with increasing level of non communicable diseases across the country.

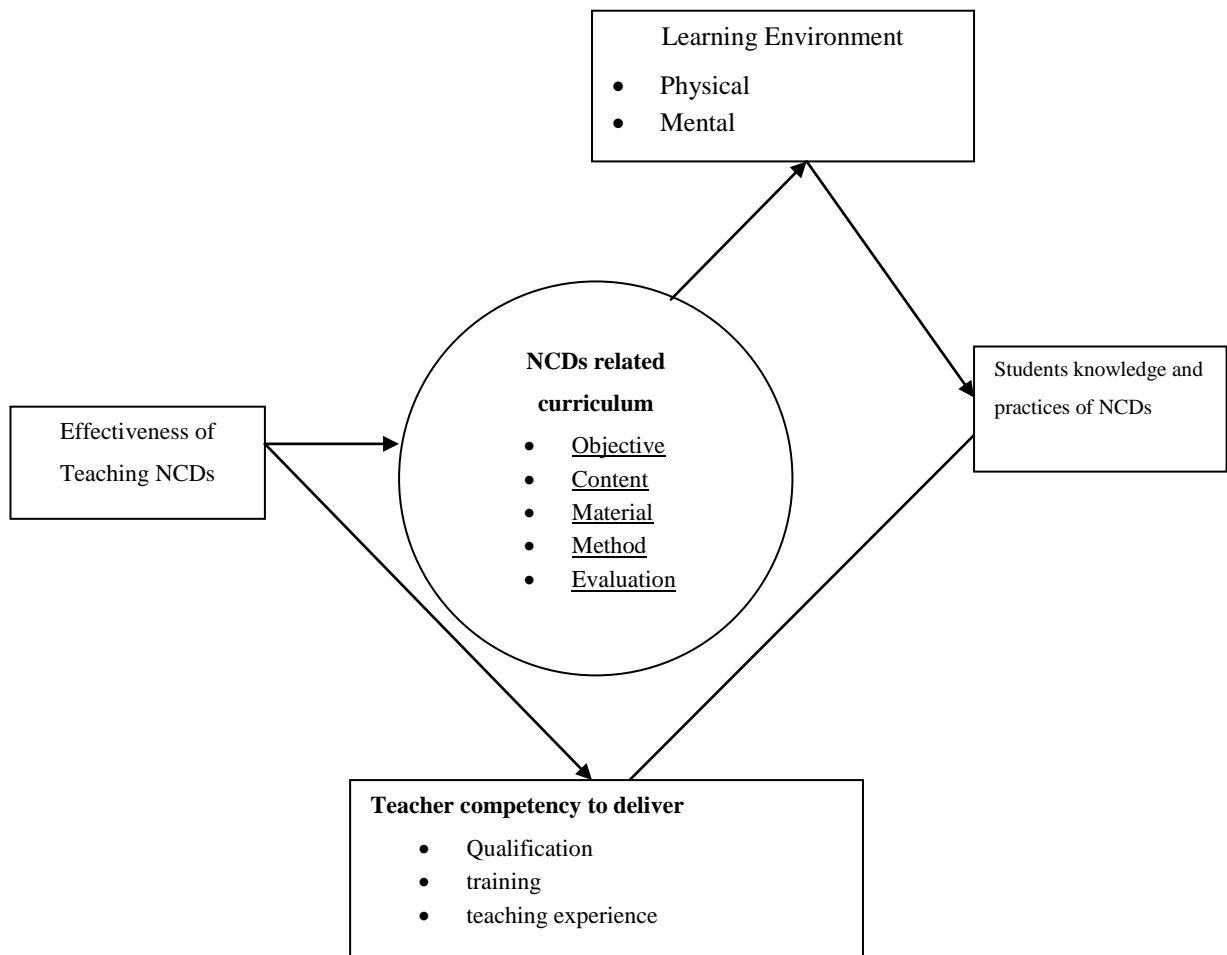
Nepal Health Research Council (2019) reported the burden disease 2017 AD stay shows that NCDs are the leading causes of death with two third 66% of death attributed NCDs and an additional 9% to injuries Of the total deaths in the Country Ischemic heart disease contributes to nearly one in six deaths 16% with one in ten deaths claimed by chronic obstructive pulmonary disease (COPD) 10% of total deaths. A recent population based prevalence of COPD, 8.5% diabetes, 6% chronic kidney diseases and 3% coronary artery diseases among population aged 20 years and above with variation among the out patient data reported in annual report of development of health services (DOHS) also on NCDs is also increased over the years in Nepal. Similarly, the interim analysis of population based cancer registered data shows the breast cancer and lung cancer are major cancer of female and male respectively and cancer incidence has increased drastically after 35 years indicating importance of early screening for prevention and control of cancer in Nepal.

Implication of the Review for the Study

All the literature above are related to teaching in health education school level curriculum and non communicable diseases. Literature said the knowledge of the secondary level students literatures said the knowledge the subjects matter easily though subject teacher secondary level students thus who are taught by non-subject teacher are lacking information on health education. Hence the literature helped since this study is also related to knowledge of subject matter of health education and non communicable diseases. The reviewed literature is similar to the present study regarding context.

Conceptual Framework

Conceptual framework is an analytical tool with several variation and contexts. It is use to make conceptual decision and organize ideas. The conceptual framework and theoretical framework is important part of research work. The conceptual framework shows the way ideas are organized to achieve research projects propose. Conceptual framework is also a sketch of research work and guideline for research work. Based on the literature review the following conceptual framework has been sammed.



When curriculum development center (CDC) add NCDs related diseases and their more information in school curriculum, teachers use subject related teaching materials methods use in classroom they play great role to change the students healthy habits school family and community. Students and teachers child friendly questionnaire, discussion in school teaching teachers trainings, teachers and students learning environment, physical and mental state students and teachers own experiences on related NCDs topic subject and subject matters, family and community members problem of NCDs Infected patients history, paramedics, health workers and doctors experiences also helps to teach about NCDs in classroom likewise Hospital and health related organizations NCDs related programmes their research report also helps to teach and influence change their healthy behaviour. The above mentioned conceptual framework provide the clear meaning and guideline to the study of Effectiveness of teaching non communicable diseases among public and private secondary level students of Mangal secondary school and Creative Academy, Kirtipur. Similarly, it will be helpful to develop, tools for collecting information.

Chapter III: Methods and Procedures of the Study

To achieve main objective of the research work different research methodologies would be adopted. This chapter describes about the study area and research design, population size, tools of data collection, data collection method, analysis and interpretation of data.

Research Design

This Study was based on descriptive and quantitative research design. The quantitative technique was used for analysis and interpretation of information from the test of students. Similarly, the delivery of contents by the teachers identified through interview schedule.

Source of Data

The study was based both primary and secondary sources of data. Primary data were collected from health education teacher of the selected schools and the students of grade 9. Secondary data were obtained from books, journals, and research reports in relevant areas.

Sampling Procedure and Sample Size

The population of this study were the teachers and secondary level students of Mangal secondary school and Creative academy, Kirtipur, was two teachers and all the 140 students having studied in the health education class of were taken as the sample applying census method.

Data Collection Tools

In this study researcher had used the interview schedule for teachers and questionnaire for students as tools of the study.

Validation of Tools

It is the necessary to validation of tools test validation. In this research researcher pretested the tools among 10 students in Janasewa Secondary Level Schools of class 9. Then the tools were finalized after analyzing the pre test result.

Data Collection Procedure

After taking permission from department of health education, university campus, the researcher established report with principal and administrator of the school to get the permission to meet with HPE teacher and students. After getting permission the researcher contacted with teacher of health education and took interview with them. The prepared question paper was provided to the students for their response and researcher took interview with health education teacher

Data Analysis Procedure

In the data processing the filled up questionnaire were carefully checked to remove the possible errors. The data was tabulated manually under different heading and sub-heading. Numerical and percentage was used to analysis and interpretation of data tables and figure were used to make presentation were more clear. Finally the summary and conclusion was drawn and required recommendation was made.

Ethical Consideration

The research is mainly concerned "Effectiveness of teaching non communicable diseases among public and private secondary level students. Therefore, the researcher was ethically aware in order to complete the research keeping the respondents" ease in mind. First ethics it was maintain in the distribution of list of statement individually. The second about the information concerning that all participants will be unbiased in terms of age sex. The third was the anonymity of the participant in order to protect individual human subject, well as in the time of this research, all groups had been selected in this research without any prejudice in terms of age, sex, mental condition of respondents.

Chapter IV: Analysis and Interpretation of Data

This chapter is mainly concerned with the analysis and interpretation of the collected data. After collecting the data they were tabulated and calculated in percentage regarding each items of the interview schedule. Table and figures are also used to make presentation more clear.

Number of Students in the School

Each and every study of instructional learning researchers to need selected school class students and subject area related subject teacher have need.

The total number of respondents school students is in this research shown in figure1.

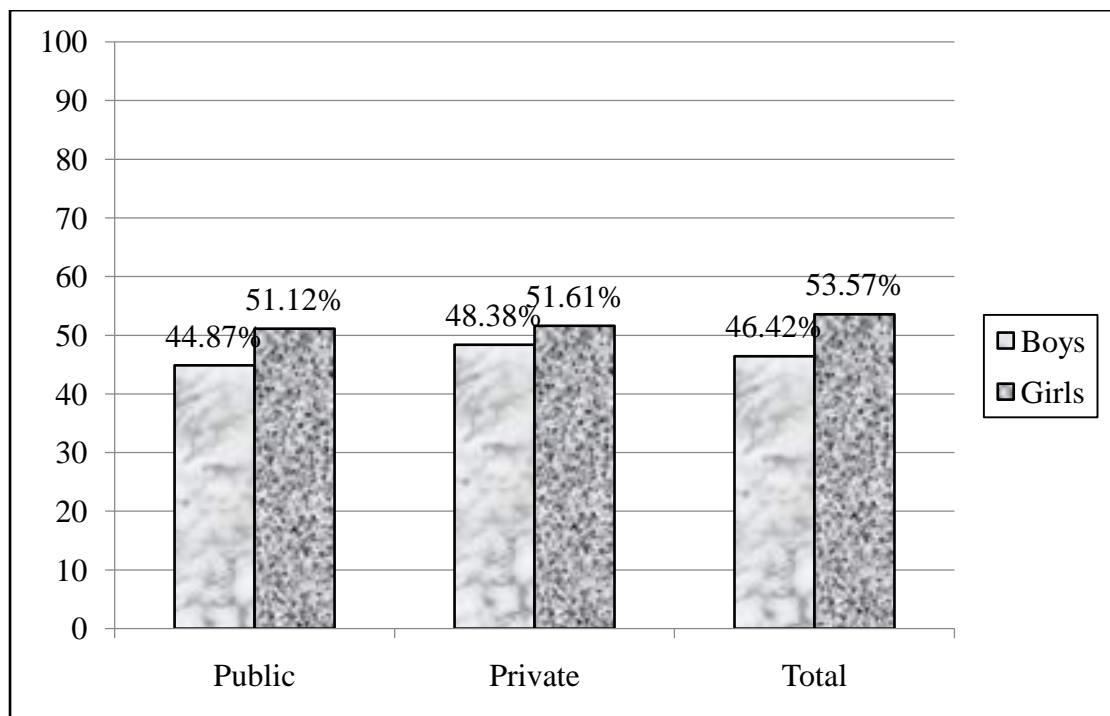


Figure 1

Number of HPE students in the school

Figure 1 shows that out of total number of public and private secondary level schools of HPE class- 9 students, boys 46.42% and girls 53.57% were participated in this study among them in public school boys 44.87% and in private school boys 48.38%. Likewise in public school girls 55.12% and in private school girls 51.61% were participate.

In comparison between the number of students in HPE subject class both public and private school girls were found more than boys. In Nepal Census Population Survey of 2068 BS. Out of total population male population was 48.56% and female population was 51.44% shows as like this it concludes that may be girls having more in the family. It also shows girls are highly motivated to school education then boys.

Caste of Students

The Nepalese caste system was the traditional system of social stratification of Nepal. The caste system defines social classes by a number of hierarchical endogamous groups often termed Jaat (weekipedia).

In this study, researcher collected the caste wise information of the respondents, which has been shown in table 1.

Table 1

Caste of Students

School	Caste											
	<u>Brahmins</u>		<u>Chhetri</u>		<u>Janajati</u>		<u>Dalit</u>		<u>Others</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Public	11	14.10	14	17.94	45	57.69	6	7.69	2	2.56	78	100
Private	13	20.96	12	19.35	34	54.83	1	1.61	2	3.22	62	100
Total	24	17.14	26	18.57	79	56.42	7	5.00	4	2.85	140	100

Table 1 shows that out of total number of public and private secondary level schools of HPE class 9 students. Brahmins 17.14%, Chhetri 18.57%, Janajati 56.42%, Dalit 5.00% and Buddhist were 2.85 percent.

In comparison between number of public and private school students of HPE class 9 students among them in public school Janajati 54.83% where found so said that number of Janajati were found more than other caste. In study found that Newar students were more than other Janajati like as Magar, Gurung and Tamang Students.

Knowledge of Non Communicable Disease

Non communicable disease is a disease that can not be transmitted from one person to another directly. Cardiovascular disease, cancer, diabetes, chronic obstructive pulmonary disease, asthma are some of the non communicable diseases. Poor diet, lack of physical activity, smoking tobacco, excessive use of alcohol can lead to risk factor for non communicable diseases. WHO, (2016)

In this study a regarding the question which is the non communicable disease? The responses of the student is shown in table 2.

Table 2

Knowledge of Non communicable Disease

School	Non communicable disease									
	<u>Cholera</u>		<u>Typhoid</u>		<u>Diarrhoea</u>		<u>Cancer</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	3	3.84	0	0.0	0	0.0	75	96.15	78	100
Private	1	1.61	0	0.0	0	0.0	61	98.38	62	100
Total	4	2.85	0	0	0	0	136	97.14	140	100

Table 2 shows that out of total number of public and private secondary level schools of HPE class 9 students 97.14% told right answer.

In comparison between total number of public and private schools HPE class 9 students knowledge of non communicable disease in public school 96.15% students marked and in private school 98.38% marked right answer. So we can say that private schools students have more knowledgeable than public schools students about NCDs.

Course of content NCDs

Researcher found that in class 9 text book of curriculum content of NCDs were found limited like as cancer, diabetes, hypertension and night blindness content.

In this question public and private both schools students conformed yes 100% NCDs content in text book.

Students view about school curriculum content of NCDs

In the context of Nepal curriculum development committee developed, published and distribute related subject text books. It gives importance to students knowledge, available subject teacher, educational place and environment etc. in curriculum content.

In this question students view about school curriculum contents of NCDs marked following as shown in figure 2.

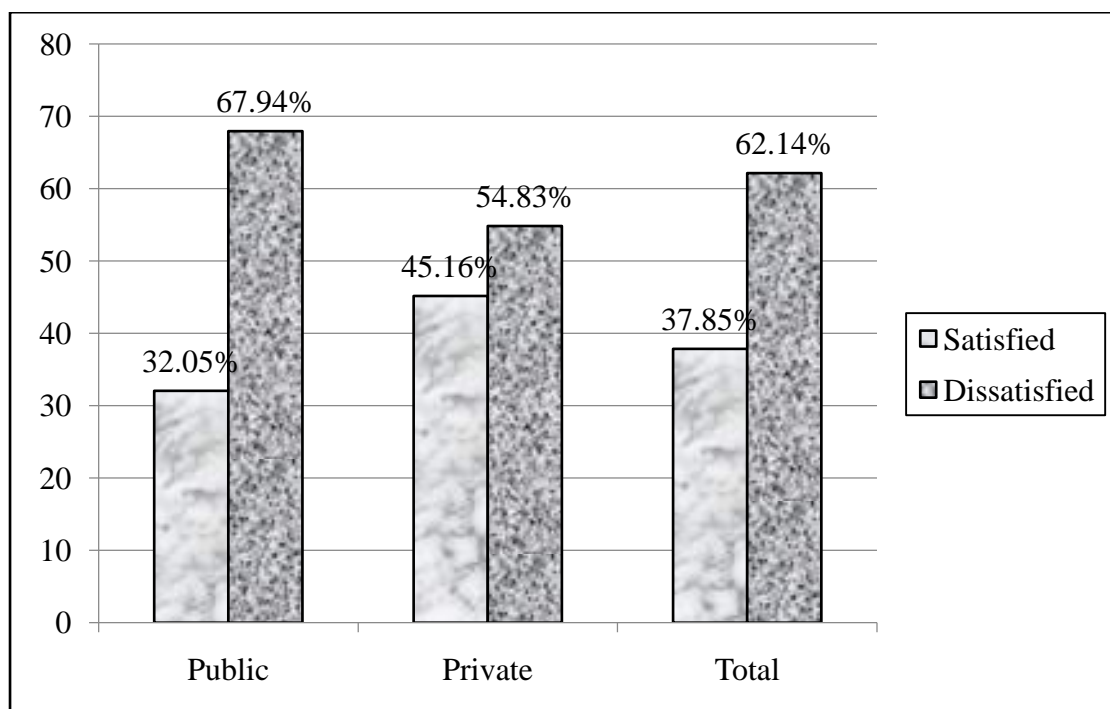


Figure 2

Students view about school curriculum content of NCDs

Figure 2 shows that out of total number of public and private secondary level schools of HPE class 9 students 37.85% were reported satisfied and 62.14% were dissatisfied about school curriculum contents of NCDs.

In comparison between both total number of public and private secondary level schools of HPE class 9 formed more number of students were dissatisfied

Students view about Teachers Teaching about NCDs in Class

Learning depends on school students beginning or before knowledge, curriculum content. Qualified teacher, update with latest related subject research, available school infrastructure, school environment, instructional material, method selection and applied in the class.

In this question students marked own view about teachers teaching about NCDs in class shown in figure 3.

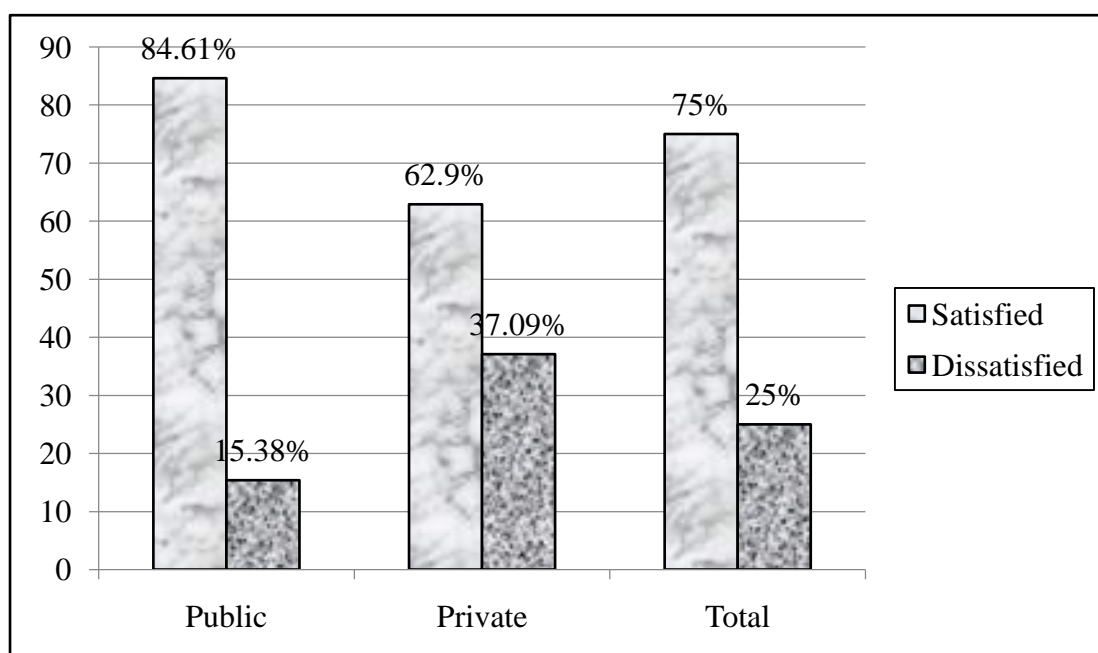


Figure 3

Students view about teachers teaching about NCDs in class

The above mentions bar graph 3 shows that out of total number of public and private secondary level students of class 9, 75% were marked satisfied and 25% were marked dissatisfied about teachers teaching about NCDs in class.

In comparison between total number of public and private secondary level schools in HPE class students most of the students were found satisfied.

Best Possible Preventive Measure of Lungs Cancer

There is no certain way to prevent lung cancer, but we can reduce our risk. If we; don't smoke. If we've never smoked don't start, stop smoking, stop smoking now, avoid second hand smoke, test our home for radon, avoid carcinogens at work, eat a diet full of fruits and vegetables, exercise most day of the week.mayoclinic.org., (Oct 10, 2020).

Avoiding smoking was the best possible preventive measure of lung cancer in this question answers. Students marked following possible preventive measure as shown in table 3.

Table 3

Best Possible Preventive Measure of Lung Cancer

School	Health education		Dietary modification		Avoid smoking		Reduce mental tension		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	3	3.84	5	6.41	69	88.46	1	1.28	78	100
Private	11	17.74	5	8.06	42	67.74	4	6.45	62	100
Total	14	10	10	7.14	111	79.28	5	3.57	140	100

Table 3 shows that out of total number of public and private secondary level students of HPE class 9 health education reported 10%. Dietary modification 7.14%, avoid smoking 79.28% and reduce and mental tension 3.57% were marked as best possible preventive measure.

In comparison between both total number of public and private school HPE class students of public school 88.46% and private school 67.74% marked best preventive measure of lung cancer is to avoid smoking.

Most Common Cancer of Nepal

Aretrospective study analysis data over the four year period between 2010 and 2013 of twelve hospital situated in Nepal showed that cancer of bronchus and lung, stomach and larynx are most common among man. In female most common cancers were listed to be cervical/uteri, breast, bronchus and lungs.medcraveonline.com, (Sept. 21, 2018).

Lung cancer was most common cancer of Nepal. Respondent students indicated following cancer is common in Nepal as shown in table 4.

Table 4

Most Common Cancer of Nepal

School	Lung cancer		Breast cancer		Blood cancer		Cervix cancer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	36	46.15	8	10.25	30	38.46	4	5.12	78	100
Private	35	56.45	20	32.25	6	9.67	1	1.61	62	100
Total	71	50.71	28	20	36	25.71	5	3.57	140	100

Table 4 shows that out of total number of public and private secondary level students of HPE class 9 lung cancer 50.71%. Breast cancer 20%, blood cancer 25.71% and cervix cancer 3.57% were marked as the common cancer of Nepal.

In comparison between public and private schools HPE class students most of the students marked that lung cancer is the most common cancer of Nepal more than other cancer like, blood and cervix cancer. It further depicts that majority of the students have knowledge regarding common cancer of Nepal.

Knowledge of Main Causes of Diabetes

Diabetes is chronic disease that occurs because the body is unable to use blood sugar (glucose) properly. The exact cause of this malfunction is unknown, but genetic and environmental factors play a part. Risk factors for diabetes include obesity and high level of cholesterol. (Healthline, 2020).

Overweight and obesity was main causes of diabetes, students marked causes of diabetes as shown in table 5.

Table 5

Knowledge of Main Causes of Diabetes

School	Main causes of diabetes									
	Over weight and obesity		<u>Salt in take</u>		<u>Tobacco use</u>		Alcohol in <u>take</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	66	84.61	5	6.41	4	5.12	3	3.84	78	100
Private	51	82.25	5	8.06	4	6.45	2	3.22	62	100
Total	117	83.57	10	7.14	8	5.71	5	3.57	140	100

Table 5 shows that out of total number of public and private secondary level students of HPE class 9 over weight and obesity 83.57%, salt in take 7.14%, tobacco use 5.71% and alcohol in take 3.57% were marked as main causes of diabetes.

In comparison between public and private schools HPE class students public schools students 84.61% and private schools 82.25% marked right options. More than 80 percent students were aware of main cause of diabetes. Likewise public school students found.

Usefulness of Blood Glucose Level Test

A blood sample will be taken after an over night fast. A fasting blood sugar level is less than 100mg/dL (5.6 mmol/L) is normal. A fasting blood sugar level from 100 to 125 mg/dL (5.6 to 6.9 mmol/L) is considered pre diabetes. If it's 126 mg/dL (7mmol/L) or higher on two separate tests, you have diabetes. www.mayoclinic.org, (2020).

Blood glucose level test most useful for identifying individuals at high risk of developing diabetes. Students marked blood glucose level test is used for diagnosis of disease shown in table 6.

Table 6

Usefulness of Blood Glucose Level Test

School	High risk of developing disease									
	<u>Cancer</u>		<u>Diabetes</u>		<u>Asthma</u>		Rheumatic <u>fever</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	5	6.41	63	80.76	6	7.69	4	5.12	78	100
Private	7	11.29	46	74.19	5	8.06	4	6.45	62	100
Total	12	8.57	109	77.85	11	7.85	8	5.71	140	100

Table 6 shows that out of total number of public and private secondary level students of HPE class 9, cancer 8.57%, diabetes 77.85%, asthma 7.85% and rheumatic fever 5.71% were marked blood glucose level test for identifying individuals at high risk of developing.

In comparison between public and private school HPE class students 80.86% marked right answer. It is public school students were aware than private school students about blood glucose level test most useful for identifying individuals at high risk of developing disease.

Knowledge of Symptoms of Diabetes

Diabetes is a lifelong condition in which one's blood glucose or blood sugar are too high. It is chronic disease that can lead to blindness kidney failure and nerve damage overtime. Some of symptoms of diabetes are increased thirst, frequent urination, extreme hunger, unexpected weight loss, fatigue, blurred vision etc. Galon, (2018).

Unexpected losing weight was symptoms of diabetes. Students marked following symptoms of diabetes disease as shown in table 7.

Table 7

Knowledge of Symptoms of Diabetes

School	Symptoms of diabetes									
	<u>Coughing</u>		Unexpected		Painful lumps		Changing		<u>Total</u>	
	No.	%	<u>loosing weight</u>		<u>in breast</u>		<u>voice</u>		No.	%
Public	0	0.00	66	84.61	12	15.38	0	0.00	78	100
Private	0	0.00	58	93.54	4	6.45	0	0.00	62	100
Total	0	0	124	88.57	16	11.42	0	0	140	100

Table 7 shows that out of total number of public and private secondary level students of HPE class 9 reported unexpected loosing weight 88.57% and painful lumps in breast 11.42 percent.

In comparison between public and private schools HPE class students 84.61% and private schools 93.54% marked unexpected loosing weight. So, it was found that private schools students had more knowledge than public school students.

Knowledge of Diseases as a Silent Killer

Untreated hypertension increases the risk factor of heart disease and stroke. Hypertension can also damage the kidneys and increase the risk of blindness and dementia. It is a major cause of premature death worldwide. Hypertension is called a silent killer. Most of the people with hypertension are unaware of the problem because it may have no warning signs or symptoms but it causes progressive harm to the cardiovascular system. The Society for Cardiovascular Angiography and Interventions, (2014).

Students marked following disease is silent killer as shown in figure 4.

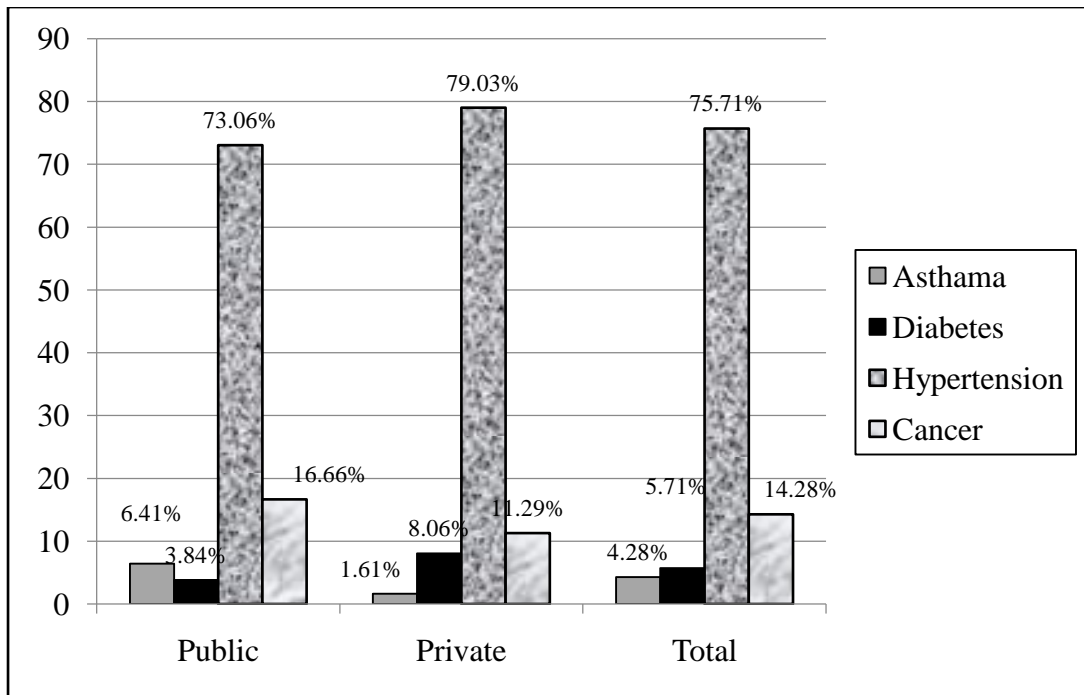


Figure 4

Knowledge of diseases as a silent killer

The above mentioned bar graph shows that out of total number of public and private secondary level students of HPE class 9 recognize, asthma 4.28%, diabetes 5.71%, hypertension 75.71% and cancer 14.28% as a silent killer disease.

In comparison between public and private schools HPE class students public schools 73.06% students and private schools 79.03% students marked right answer. So it is justified that private schools students had more knowledge than public school students.

Knowledge of Risk Factors of Developing Coronary Artery Disease (CAD)

Coronary artery disease risk can often be assessed with blood tests mild early stage is diagnosed with specialized diagnostic tests such as echocardiogram and angiogram treatment for coronary artery disease usually involve lifestyle changes and if necessary drugs and certain medical procedures. Making a commitment to the following healthy lifestyle changes can go a long way toward promoting healthier arteries: quit smoking, eat healthy foods, exercise regularly, lose excess weight, reduce stress. Massachusetts General Hospital, (2008).

Exercise is not the risk factors of developing coronary artery disease. Students marked following risk factors as shown in figure 5.

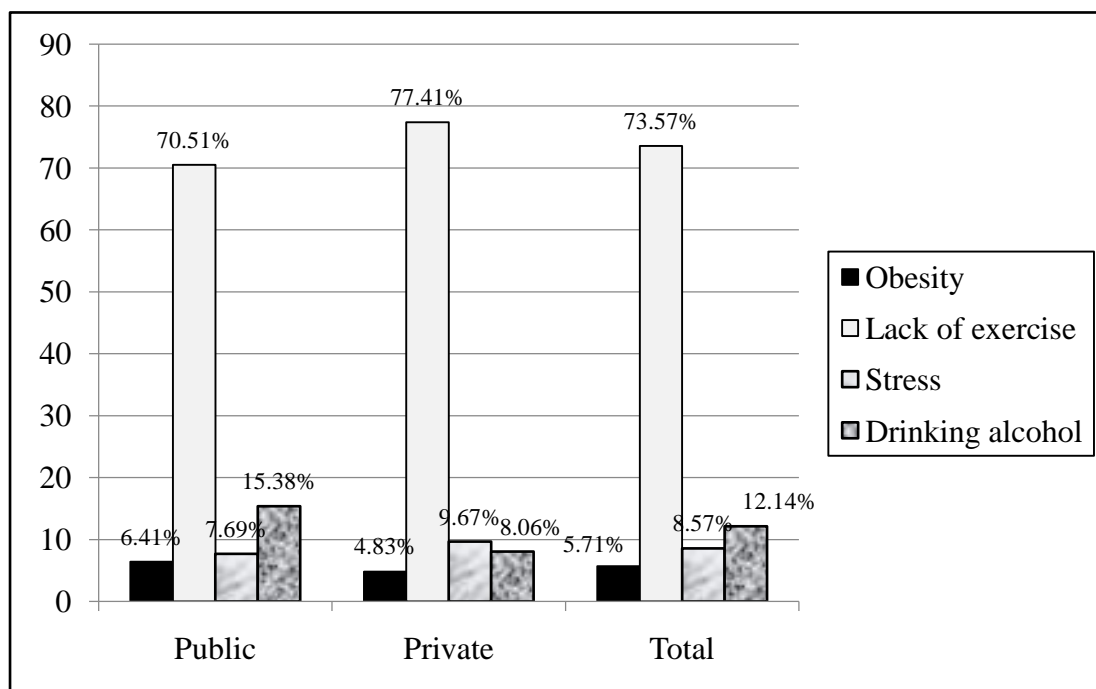


Figure 5

Knowledge of risk factors of developing coronary artery disease (CAD)

The above mentioned bar graph shows that out of total number of public and private secondary level students of HPE class 9 marked obesity 5.71%, lack of exercise 73.57%, stress 8.57% and drinking alcohol 12.14% as the un risk factor of developing CAD. Figure further reveals that more than 70 percent both private and public school students had knowledge about risk factor of CAD. Similarly private school students were more aware than public school.

Knowledge of Risk Factor of Myocardial Infection

Risk factors of myocardial infection include high blood pressure, smoking diabetes, lack of exercise, obesity, high blood cholesterol, poor diet and excessive alcohol intake. The complete blockage of a coronary artery caused by a rupture of an atherosclerotic plaque is usually the underlying mechanism of an MI. (wikipedia.org).

Smoking, obesity, high blood pressure and all of the above were risk factor of myocardial infection. Students marked following disease as myocardial infection as shown in table 8.

Table 8

Knowledge of Risk Factor of Myocardial Infection

School	Risk factor of myocardial infection									
	<u>Smoking</u>		<u>Obesity</u>		<u>High blood pressure</u>		<u>All of the above</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	14	17.94	14	17.94	6	7.69	44	56.41	78	100
Private	4	6.45	2	3.22	6	9.67	50	50.64	62	100
Total	18	12.85	16	11.42	12	8.57	94	67.14	140	100

Table 8 shows that out of total number of public and private secondary level students of HPE class 9, smoking 12.85%, obesity 11.42%, high blood pressure 8.57% and all of the above 67.14% were marked were right answer asthma marked 90% students.

In comparison between both public and private secondary level schools of HPE class students were found smoking, obesity, high blood pressure and all of the above were more than other among them in public schools 56.41% marked all of the above and private schools 50.64% students marked all of the above.

Knowledge of Wheezing Sound of Lung is Common in

Inflammation and narrowing of the airway in any location, from our throat out into our lungs, can result in wheezing. The most common causes of recurrent wheezing are asthma and chronic obstructive pulmonary disease (COPD). Which both cause narrowing and spasms (bronchospasms) in the small air ways of your lungs. (mayoclinic.org).

Wheezing sound of lung is common in asthma in this study students marked following disease shown in table 9.

Table 9

Knowledge of Wheezing Sound of Lung is Common in

School	Wheezing sound of lung is common in									
	<u>Asthma</u>		<u>Pneumonia</u>		<u>Injury</u>		<u>Pulmonary edema</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	71	91.02	7	8.97	0	0.00	0	0.00	78	100
Private	55	88.70	2	3.22	0	0.00	5	8.06	62	100
Total	126	90	9	6.42			5	3.57	140	100

Table 9 shows that out of total number of public and private secondary level students of HPE class 9 asthma 90%, pneumonia 6.42% and pulmonary edema 3.57% were marked. Right answer asthma marked 90%.

In comparison between both public and private secondary level schools of HPE class students, more knowledge of wheezing sound of lung was common in asthma were found than other disease.

Knowledge of Respiratory Volumes Measured Medical Instrument

A spirometer measures the amount of air you can breathe out in one second and the total volume of air you can exhale in one forced breath. These measurements will be compared with a normal result for someone of your age, height and sex. Which will help show if your lungs aren't working properly. (nhs.uk) conditions >spirometry

Spirometer measures the respiratory volumes measured instrument, in this studystudents marked following instrument shown in table 10.

Table 10

Knowledge of Respiratory Volumes Measured Medical Instrument

School	Respiratory volumes measured medical instrument									
	<u>Stethoscope</u>		<u>Glucometer</u>		<u>Spirometer</u>		<u>Thermometer</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	18	23.07	0	0.00	60	76.92	0	0.00	78	100
Private	8	12.90	0	0.00	54	87.09	0	0.00	62	100
Total	26	18.57	0	0	114	81.42	0	0	140	100

Table 10 shows that out of total number of public and private secondary level students of HPE class 9 stethoscope 18.57% and spirometer 81.42% were marked.

In comparison between both public and private secondary level schools of HPE class students were marked public schools 76.92% and private schools 87.09% marked spirometer so it is found private schools students were more knowledgeable than public school students about spirometer.

Knowledge of Preventive Measure Against Asthma

Asthma is a chronic disease condition in which airways become blocked or narrowed causing breathing difficulty. It can't be cured but its symptoms be controlled. In order to prevent asthma attack, we can take preventive measure such as vaccination against flu, avoiding allergens, avoiding harsh cleaning products and chemical, keeping environment clean, preventing cold etc. Mayo Clinic, (2018).

Keeping environment clean were of preventive measure against asthma students marked following disease shown in table 11.

Table 11

Knowledge of Preventive Measure Against Asthma

School	Preventive measure against asthma									
	<u>Reducental</u> <u>nsion</u>		<u>Become more</u> <u>active</u>		<u>Immunizations</u>		<u>Keeping</u> <u>environment clean</u>		<u>Total</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	17	21.79	5	6.41	20	25.64	36	46.15	78	100
Private	3	4.83	6	9.67	15	24.19	38	61.29	62	100
Total	20	14.28	11	7.85	35	25	74	52.85	140	100

Table 11 shows that out of total number of public and private secondary level students of HPE class 9 reduce mental tension 14.28%, become more active 7.85%, immunization 25% and keeping environment clean 52.85% were marked. Table further revealed that 52.85 percent replied right answer.

In comparison between both public and private secondary level schools of HPE class students were public schools was marked 46.15% right answer and private schools was marked 61.29%. So it is found private schools students are more

knowledgeable than public schools students about keeping environment clean was of preventive measure against asthma.

NCDS Prevention Intervention Programme in the School

School can conduct NCDs prevention intervention programme like as project work, field visit, drama, yoga, meditation, canteen, check up, conduct health camp, check up rather than the teaching.

Students view about school conduct NCDs prevention intervention programme rather than the teaching is shown in figure 6.

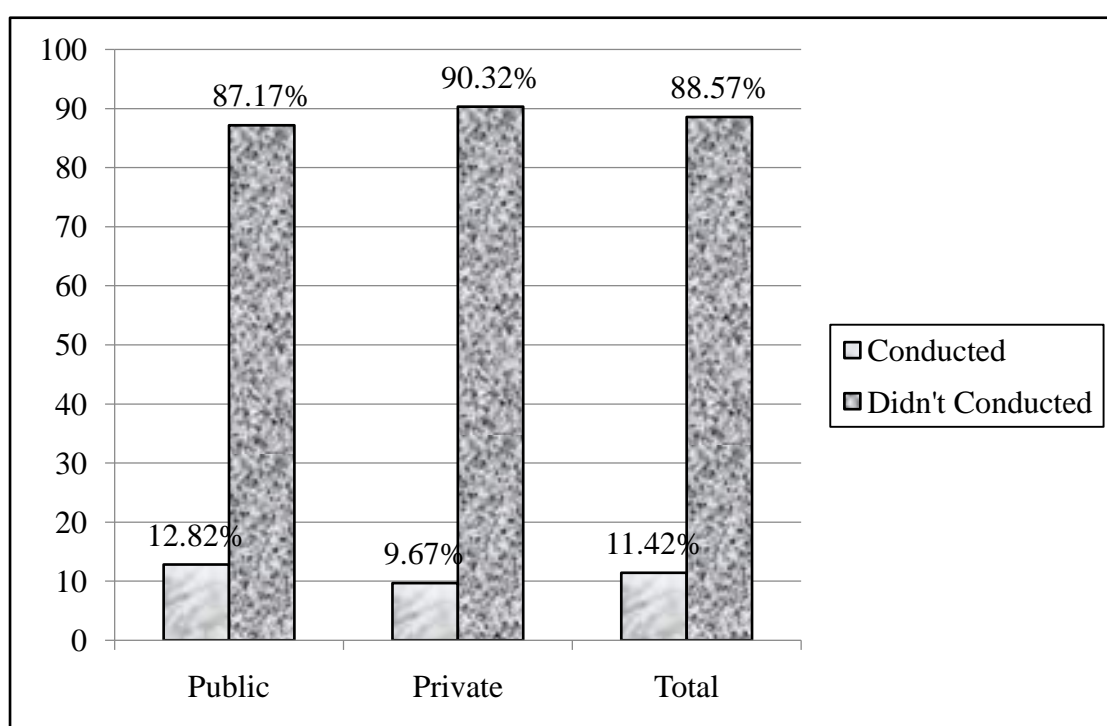


Figure 6

NCDS prevention intervention programme in the school

The above mentioned figure shows that out of total number of public and private secondary level students of HPE class 9 only 11.42 percent conducted NCDs prevention intervention but 88.57 percent didn't conduct.

In comparison between both public and private secondary level schools 11.42 percent private schools and 12.82 percent public school found that conformed prevention, intervention programme. So from above data it can be said private schools students were more aware than public schools students.

Knowledge of Main Causes, behind Increasing Non Communicable Disease in the Context of Nepal

The four leading NCDs cardiovascular diseases, cancer, respiratory diseases and diabetes share four risk factors : tobacco use, harmful use of alcohol, unhealthy diet, and physical inactivity. (paho.org)

Smoking and alcohol, dusts and poor diet all are the reason behind increasing NCDs was the common in Nepal among them smoking and alcohol was main reason behind increasing NCDs in the context of Nepal. Students marked following causes shown in table 12.

Table 12

Knowledge of Main Causes, behind Increasing Non communicable Disease in the Context of Nepal

School	Smoking and alcohol		Dusts		Poor diet		Other		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	36	46.15	29	37.17	11	14.10	2	2.56	78	100
Private	24	38.70	9	14.51	17	27.41	12	19.35	62	100
Total	60	42.85	38	27.14	28	20	14	10	140	100

Table 12 shows that out of total number of public and private secondary level students of HPE class 9 were marked smoking and alcohol 42.85%, dusts 27.14%, poor diet 20% and other (lack of physical exercise, lack of health education, lack of industrial health safety measure use) 10% students.

In comparison between both public and private secondary level schools of HPE class students where public schools 46.15% and private schools 38.70% students marked smoking and alcohol so we found that public schools students had more knowledge regarding smoking and use alcohol was main reason behind increasing non communicable disease.

Personal Habits of Smoking and Use Alcohol

Each and every individuals are different personal habits. Study schools of public and private secondary level students of HPE class 9 students marked following personal habits of smoking and alcohol regarding as shown in table 13.

Table 13

Personal Habits of Smoke and Use Alcohol

School	Personal habits									
	<u>Smoke</u>				<u>Use alcohol</u>				<u>Total</u>	
	Yes		No		Yes		No		No.	%
	No.	%	No.	%	No.	%	No.	%	No.	%
Public	4	5.12	74	94.87	5	6.41	73	93.58	78	100
Private	2	3.22	60	96.77	3	4.83	59	95.16	62	100
Total	6	4.28	134	95.71	8	5.71	132	94.28	140	100

Table 13 shows that out of total number of public and private secondary level students of HPE class 9 were smoke habits marked, yes 4.28% and no marked 95.71% students. Likewise use alcohol marked yes 5.71% and marked no 94.28% students.

In comparison between both public and private secondary level schools of HPE class students were public schools students marked yes 5.12% and private school students marked yes 3.22%. Likewise public schools students were marked use alcohol yes 6.41% and private schools students were marked use alcohol 4.83%. So we found use smoke and use alcohol students were more number in public school.

Personal Habits of Doing Exercise at Home

School age boys and girls have different thoughts and interests. They follow smoking and use alcohol habits directly or indirectly. In this age groups personal habits of exercise also affect students interest, friends habits and also affect family and school environment.

Public and private secondary level students of HPE class 9 students marked do habit about doing exercise as shown in figure 7.

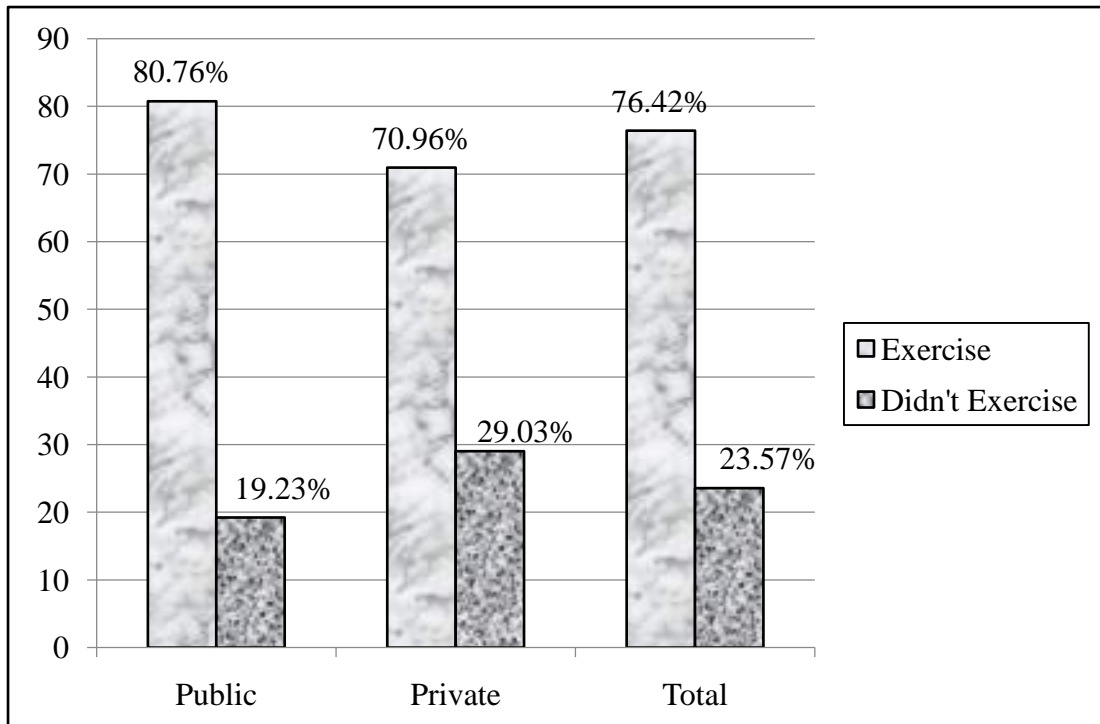


Figure 7

Personal habits of doing exercise of home

The above bar chart shows that out of total number of public and private secondary level students of HPE class 9 student responded they have done exercise 76.42 percent and only 23.57 percent student did not exercise.

In comparison between both public and private secondary level schools of HPE class students were public schools marked yes 80.76% and private schools marked no 70.96%. Likewise public level schools were marked no 19.23% students and private level schools no marked 29.03% students. So it is found that public schools students were doing exercise more than private level schools students.

Physical Exercise in the School

Public and private secondary level students of HPE class 9 students marked doing exercise in school shown as in table 14.

Table 14

Physical Exercise in the School

School	Do exercise				<u>Total</u>
	<u>Yes</u>		<u>No</u>		
	No.	%	No.	%	
Public	54	69.23	24	34.61	78
Private	20	32.25	42	67.74	62
Total	74	52.85	66	47.14	140

Table 14 shows that out of total number of public and private secondary level students of HPE class 9 were physical exercise do marked yes 52.85% and physical exercise do marked no 47.14% students.

In comparison between both public and private secondary level schools of HPE class students. It is found that marked physical exercise no do in school more than yes do in school because of lack of playing ground, school infrastructure, available sports.

Health Check-up in the School by Paramedics or Doctor

In this study total number of public and private secondary level students of HPE class 9 all of the students marked school not check up students health by paramedics or doctor but, there is available first-aid box in both school. A student said that "school administration and teachers only focus on class teaching reading, writing for students, how to get good marks on test book and examination they do not give priority to students health. If teacher feel any student were unhealthy in classroom suggest to parents where checkup near hospital or medical".

Types of Food Use as Tiffin in the School

School administration can make and follow the different rules about tiffin which has directly or indirectly affect students teacher and other administrative members food habit and effectiveness of punishment who breakup food use as tiffin rules and also affects available home/canteen made food and packed food.

Students marked types of food use as tiffin in the school as shown in table 15.

Table 15

Types of Food Use as Tiffin in the School

School	Type of food use as tiffin					
	<u>Packed food</u>		<u>Home/canteen made food</u>		<u>Total</u>	
	No.	%	No.	%	No.	%
Public	17	21.79	61	78.25	78	100
Private	3	4.83	59	90.32	62	100
Total	20	14.28	120	85.71	140	100

Table 15 shows that out of total number of public and private secondary level students of HPE class 9 were marked packed food 14.28%, home/canteen made food 85.71%, students among them public schools home/canteen made food marked 78.25% and private schools home/canteen made food were marked 90.32% students.

In comparison between both public and private secondary level schools of HPE class students where marked home/canteen made food of public and private schools students we found that private schools students used home/canteen made food where more than public schools students.

Control of Non Communicable Diseases

Public and private schools students view about control of non communicable diseases found were as follows, among them public schools HPE students noticed reduce drinking alcohol and smoking, maintaining proper diet, regular health checkup, banding marketing of alcohol and smoking, become more active, involve in extracurricular activities in school (Dancing, Musical programme, Singing, Drawing and Drama), keeping environment clean. Likewise private schools HPE students noticed daily physical exercise, reduce stress by yoga, meditation and involve in sports, and conducting NCDs awareness programme both public and private schools students suggest were health education of NCDs related diseases in school students and community people.

Academic Qualification and Experience of Teacher

Effective and attractive teaching learning activities helps in making the teaching learning very impressive in any level. So, they required academic qualification compulsory for adopting teaching profession. A trained or qualified teacher is well known and dynamic his/her subject and adopts the various teaching learning method according to the nature of subject matters. This study found that one public school teacher have passed M.Ed. in health education but one private school teacher had passed M.A. in English.

To teach health education in secondary level teachers should have done masters degree in health education and shows the most of the teacher were academically capable to teach the related subject. Academic status of HPE teacher in public school is good which can provide positive impact on the effectiveness of teaching education in the study area but the academic status of HPE teacher in private school is may not satisfied because he have done M.A. in English.

The terms "Experience is very much important in all sectors including teaching field and teaching process, if teacher are experienced in related subject their teaching style, spoken and command over spoken and writing and their presentation skills such as motivation their for teaching experiences plays the vital role in teaching process. Public school HPE teacher have 24 years teaching experience private school HPE teacher have 20 years teaching experience in school. This is the good point both of the school have more experienced HPE teachers.

Use of Teaching Material and Teaching Methods

The most important factor of teaching learning process is teaching method and techniques. Teaching method can be considered as a most important aspect in teaching field which helps to make teaching activities effective and makes the learning satisfied.

The comparison between public and private schools teachers regarding the use of teaching materials use in their classroom activities for the effective teaching learning in public school teacher are used white board, marker, duster, chart and poster materials in private school teacher are used audio visual and projector also

used. In comparison between the public and private school teachers both of them were used lecture method to teach NCDs.

School administration and teacher can select and use favourable teaching material and method in their subject and subject matter in a classroom. Teachers and students' achievement determines the effectiveness of teaching material and method used in class, outcome of students' results and activities.

Teacher Conduct to Control NCDs in Public and Private School

Most of the teachers have conducted such kind of activities in the classroom such as in public schools Nilkantha Maharjan sir said that "Motivational teaching in classroom about NCDs" and private schools Ashok Sharma sir said that "Used documentary show."

School should be done such kind of conducted programme to teach NCDs like, prevention and intervention of NCDs programme, health check up, equally participate students in extracurricular activities but, researcher have not found these kinds of conducted programme both in public and private school.

Suggestions for Better Teaching NCDs

Public and private school's teachers both are said that "At the beginning of class, tell students where you are going, this could be a brief overview and will give students the sense that you are organized. At the end of class summarize where you have been, maintain perspective for the big picture and help students understand how the details fit into the big picture. We asked students to be critically reflective and analyzing their performance. You must be critically reflective in analyzing your teaching. Every 1-2 weeks critically evaluate what you have done and how you might improve it. Intend to test may be should plan our lesson more effectively and have more interactive session we should for NCDs curriculum content teaching, coordinate with health workers and teach about NCDs subject matter and documentary show also effective to teach NCDs in school.

Major Findings

The main objective of the research was to effectiveness of teaching of non communicable disease among the students of public and private secondary level schools class 9 students of Kirtipur municipality, Kathmandu district. After analyzing and interpretation of the data following points are taken as the major findings:

- Research found that out of total number of respondent of public and private secondary level schools HPE class 9. 46.42% boys and 53.57% girls. In comparison between both schools students found girls were more then boys in number.
- It was found that number of caste students of both public and private secondary level schools of class 9.17.14% Brahmins,18.57% Chhatri,56.42% Janajati,5.00% Dalit and 2.85% Buddhist. In comparison between both school number of Janajati students were found more then other caste.
- Out of total respondent of public and private secondary levels of class 9 researcher found that97.14% students had known about cancer is a non communicable disease and 2.85 percent were found unknown.
- Public and private both schools students confirmed 100%NCDs content in text book.
- Out of 140 respondents number of public and private secondary levels of class 9 students found that 37.85% students were satisfied and 62.14% students were dissatisfied about school curriculum content of NCDs.
- Out of total number of public and private secondary levels of class 9students 75% students were satisfied and 25% students were dissatisfied about teacher teaching about in NCDs class.
- It was found that number of public and private secondary levels of HPE class 9students marked 10% health education, 7.14% dietary modification,79.28% avoid smoking, and 3.57% reduce mental tension as the best possible preventive measure of lung cancer.
- Researcher found that from out of respondent schools of students about most common cancer in Nepal. 50.71 % lung cancer, 20%breast cancer,25.71% blood cancer and 3.57% cervix cancer were marked.

- In question asked knowledge of symptoms of diabetes and research 83.57% obesity, 7.14% salt in take, 5.71% tobacco use and 3.57% alcohol in take were marked as main causes of diabetes in both school.
- Out of total number of public and private secondary level students of HPE class 9 expressed 8.57% cancer, 77.85% diabetes, 7.85% asthma and 5.71% rheumatic fever were marked blood glucose level test for identifying individuals at high risk of developing.
- Researcher found that 88.57% unexpected loosing weight and 11.42% painful lumps in breast were marked knowledge symptom of diabetes both schools respondents.
- Out of total number of public and private secondary level students of HPE class 9, 4.28% asthma, 5.71% diabetes, 75.71% hypertension and 14.28% cancer were marked disease as a silent killer.
- Researcher found that in question knowledge not the risk factor of developing coronary Artery diseases (CAD) 5.71% obesity, 73.57% exercise, 8.57% stress and 12.14% drinking alcohol were marked.
- Researcher found that from respondents about knowledge of risk factor of myocardial infection. 12.85% smoking, 11.42% obesity, 8.57% high blood pressure and 67.14% all of the above were marked.
- With regard to the question asked wheezing sound lungs is common, respondents student marked 90% asthma, 6.42% pneumonia and 3.57% pulmonary edema.
- With regard to the question asked knowledge respiratory volumes measured medical instrument, where researcher found that 18.57% stethoscope and 81.42% spirometer were marked out of total respondents. In comparison between both public and private secondary level schools of HPE class students were marked public schools 76.92% and private schools 87.09% marked spirometer so it is found private schools students were more knowledgeable than public school students about spirometer.
- From this study, it was found that in question knowledge preventive measure against asthma 14.28% mental tension, 7.85% become more active, 25% immunization and 52.85% keeping environment clean marked.

- Researcher found that respondent schools respondents of class 9 were 11.42 % marked yes and 88.57% marked no responds were NCDs prevention intervention programme in the school.
- Out of total number of public and private secondary level students of HPE class 9 were marked 42.85% smoking and alcohol, 27.14% dusts,20% poor diet and 10% other (lack of physical exercise, lack of health education, lack of industrial health safety measure use) students.
- It was found that respondent schools students personal habit of HPE class 9 were found that smoke habits marked 4.28% yes and 95.71% no marked. Likewise use alcohol marked 5.71% yes and 94.28% marked no.
- Research found that personal habits of HPE class 9 were 76.42% doing exercise marked yes and 23.57% do exercise marked no were students.
- With regard to the question asked, physical exercise doing in school where 52.85% physical exercise do marked yes and 47.14% physical exercise do marked no respondents of both school.
- It was found that types of food use as tiffin in this school 14.28% packed food, 85.71% home/canteen made food marked, among them public schools78.25% home/canteen made food marked and private schools 90.32% marked home/canteen made food.

Chapter V: Conclusion and Recommendation

Conclusion

Comparison between the number of students in HPE subject class both public and private school were found that girls were found more than boys. Course content of NCDs in class 9 HPE text book have limited like as cancer, diabetes, hypertension and Night blindness only included, most of the students were dissatisfied text books curriculum content of NCDs. Most of the students were satisfied teachers teaching about NCDs. Most of the students marked avoid smoking is the best preventive measure of lung cancer. Most of the students marked lung cancer was most common cancer of Nepal. Similarly, over weight and obesity was main causes of diabetes respondents marked blood glucose level test most useful for identifying individuals at high risk of developing debates. Knowledge about MI of both schools respondents . Most of the respondents knows about spirometer measure the respiratory volume. Researcher found that school not conduct NCDs prevention intervention programme rather then teaching. Researcher found that some public and private schools students have personal habits of smoke and use alcohol and public schools students doing exercise more then private schools students. Similarly school administration not health check up in school by paramedics or doctor. Likewise public and private both schools respondents found that use home/canteen made food use as tiffin more then packed food in the school.

Teacher were dissatisfied by teaching methods, teaching material including curriculum books, practical, resources, field works etc. New data and information should be included in NCDs curriculum, participation, coordinate with paramedics, Health workers and doctors to teach related topics. Due to these factors, students had only few basic knowledge on NCDs and had lots of misunderstanding and misconception.

Recommendations

After conducting the research on effectiveness of teaching non communicable diseases among public and private secondary level schools following the recommendations are drawn;

Recommendations for Improvement

- The school should organize seminars related to NCDs, practical classes, field works, and participate students to research centers and hospitals.
- It is necessary to manage health camp in public and private secondary school level.
- Teachers who have not passed bachelor degree in health education should not be allowed to teach the subject and we should prefer to M.Ed.
- The health education teacher should make proper daily lesson plan before teaching NCDs.

Recommendations for National Policy

- (a) Effective programme implementation policy should be emphasized by the concerned education ministry
- (b) Child friendly school programme should be conducted national wide through government policy.
- (c) Health education should be made compulsory in all level of school education to develop a policy that can support.

Recommendations for the Further Research

- Experimental types of study can be also conducted in the area of teaching methods and materials.
- It is recommended to make cross study in between public and private school to understand the similarities and differences in teaching NCDs topic.
- New researchers can carry out on large number of school outside of Kathmandu valley in other parts of the country.

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Appendix I
Interview Schedule health Teacher

Name of the school Date:.....
Name of teacher Age:.....
Teaching Experience Sex;.....
Major subject Academic qualification
.....

1. What are the contents included in your course?

- a. Cancer b. Diabetes
- c. Hypertension d. Pneumonia

2. Are you satisfied with your delivery of NCDs related matter/contents. If No what types of content should be added?.....

- a. Yes b. No

3. Which types of materials do you use most frequently in teaching non communicable disease?

.....

4. Which is the most frequently used method in non communicable disease class ?

.....
.....

5. What should be done in the school to control the NCDs

.....

6. Have you conducted any NCDs prevention intervention this year ?

- a. Yes b. No

If Yes what type of programme rather than teaching.

7. What suggestions would you give better teaching of NCDs in the school?

.....

Appendix II

Test Questions paper for students

Name of students Date:.....

Name of School Class:.....

Cast: Brahmins and Chhetri/Janajati, Dalit, others..... Sex:.....

1. Is there any content regarding NCDs in your course.
 - a. yes
 - b. noIf Yes what are those ?.....
2. Are you satisfied in your school curriculum content of non communicable disease?
 - a. satisfied
 - b. dis satisfied
3. Are you satisfied with teachers teaching about NCDs in Class
 - a. yes
 - b. no
4. Which of the following non communicable disease
 - a. Cholera
 - b. Typhoid
 - c. Diarrhoea
 - d. Cancer
5. Best possible preventive measure of lung cancer is
 - a. Health Education
 - b. Dietary modification
 - c. Avoid smoking
 - d. reduce mental tension
6. Most common Cancer of Nepal is
 - a. Lung cancer
 - b. Breast cancer
 - c. Blood cancer
 - d. Cervix cancer
7. Which of the following is main causes of diabetes?
 - a. over weight and obesity
 - b. Salt intake
 - c. Tobacco use
 - d. Alcohol intake
8. The blood glucose level is in the single most useful test for identifying individuals at high risk of developing?
 - a. Cancer
 - b. Diabetes
 - c. Asthma
 - d. Rheumatic fever
9. Symptoms of diabetes is
 - a. Coughing
 - b. Unexpected losing weight
 - c. Painful lumps in breast
 - d. Changing voice
10. Which of the following disease is as silent killer?
 - a. Asthma
 - b. Diabetes
 - c. Hypertension
 - d. Cancer
11. What are the risk factors for developing coronary artery diseases(CAD)
 - a. Obesity
 - b. Exercise
 - c. Stress
 - d. Drinking alcohol

12. Risk factor of Myocardial infection is
- a. Smoking
 - b. Obesity
 - c. High blood pressure
 - d. all of the above
13. Wheeze sound of lung is common in
- a. Asthma
 - b. Pneumonia
 - c. Injury
 - d. Pulmonary edema
14. Respiratory volumes are measured by
- a. Stethoscope
 - b. Glucometer
 - c. Spirometer
 - d. Thermometer
15. Which of the following is preventive measure against asthma?
- a. reduce mental tension
 - b. become more active
 - c. Immunizations
 - d. keeping environment clean
16. Your school conduct NCDs prevention intervention programme rather than the teaching.
- a. Yes
 - b. No
- If Yes what are those?
17. Which is the main reason behind increasing non communicable disease in the context of Nepal?
- a. Smoking and alcohol
 - b. Dusts
 - c. Poor diet
 - d. Other.
18. What are the ways to control non communicable diseases?
.....
19. Do you smoke?
- a. Yes
 - b. No
20. Do you use alcohol?
- a. Yes
 - b. No
21. Do you do exercise?
- a. Yes
 - b. No
- If Yes which type and what?
22. Is any physical exercise in your school.
23. Your school check up students health by paramedics or doctor?
- a. Yes
 - b. No
24. What type of food you use as tiffin in the school?
- a. Packed Food
 - b. Home/Canteen made food