HEALTH AWARENESS AMONG PRIMARY SCHOOL STUDENTS OF SIKKIM

A Dissertation Submitted

To

Sikkim University

In Partial Fulfilment of the Requirement for the
Degree of Master of Philosophy

By

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February 2017

Sikkim University
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CERTIFICATE

It is certified that the dissertation entitled **"Health Awareness among Primary School Students of Sikkim"** being submitted by **Bhanu Basumatary**, M.Phil. (Education) student, for his degree of *Master of Philosophy in Education* has been carried out under my supervision and guidance and has not been submitted elsewhere for any degree or diploma. It is fit for submission.

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ACKNOWLEDGEMENTS

First and foremost I would like to thank God for his constant presence and giving me strength, courage and guidance to do my work and to overcome all the situations during the course of my research work.

I am immensely grateful to acknowledge sincere gratitude to my Supervisor Dr. Vimal Kishor, Assistant Professor, Department of Education, Sikkim University, for giving me an opportunity to undertake the present research work under him. It is his constant and proper supervision, friendly attitude, valuable suggestions and inspiration at every stage of the present study which led me to bring the work to its present form successful completion of this study.

I express my sincere gratitude to all the faculties of the Department of Education, Sikkim University, for their constant support and also for providing peaceful and friendly academic environment during the course of my M.Phil dissertation work.

Also, extend my thanks to the Librarian and staff of Teesta-Indus Central library of Sikkim University for the access given to me during the course of my research.

I also express my heartfelt thanks to a number of research scholars, doctors and experts persons for their help and advice in the preparation of this study.

My special thanks go to all the headmasters/ principal and teachers of the different schools of East and South Districts of Sikkim, for allowing me to conduct the study without any objection and also the students of the schools who cooperated during the study, without them this study would not have reached to successful conclusion.

I extent my special thanks to my friend Nabin Manger, who accompanied me throughout the field study, despite of his busy life.

Finally, I convey my heartfelt gratitude to my parents, sister and brother for their prayers and being constant basis of motivation for making it real in pursuing my study.

Bhanu Basumatary

CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1
INTRODUCTION

Every child has right to lead a decent life for which the physical, mental and social well-being is necessary. School is regarded as an important institution for cognitive, creative and social development of children as it plays an important role in teaching and encouraging the students for their all-round development. Satpathy (2012, pp. 23-27) remarked that in the process of socialisation during childhood the family and school are two important institutions which play significant role for integrated development of the child. Happiness is a particularly influence on health and, of course, vice versa (Tantam, 2014, p. 26). The 30th world health assembly in 1977, decided that the main social targets of the government and WHO in the coming years should be "the attainment by all the citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life", for brevity called "health for All" (Dandiya, Zafer and Zafer, 2004, p. 2). Thus, the new philosophy can be express that health is a fundamental human right.

Therefore, to maintain healthy body one should practice daily from the childhood stage. If the students are not physically, mentally, emotionally and socially healthy, schools cannot achieve their primary mission of educating students for their lifelong learning and success. Although statistics show an increase in enrolment ratios and the number of schools per se, in terms of qualitative improvement there is still much to be done. Standards have to improve, education has to be made more meaningful, and the fundamental objectives of the primary education focussing on the child's all round development have to be achieved (Ranganathan, 2000). Most of the

school children are not adequately aware of their health related needs such as balance diet, personal hygiene and cleanliness, physical exercise, etc. Health is one of the major issues resolving the stage of adolescence. In spite of much effort from different government and non-governmental organisation agencies focussing on different health aspects, there still existence of health related problem among the school children. Primary education is said to be an initial stage of the child's development with regard to their mental, emotional, physical and social health. This is the stage where an individual child can learn so many new things and it is important for the curriculum framers to include the health awareness as a crucial subject in this stage. Thus, the health of school-age children is a prominent topic in current educational discourse.

1-1 Health: the Concept

Historically, the term health is derived from an old Anglo-Saxon word "HEALTH" meaning the condition of being safe and sound or whole. For many years this historical definition was lost because of the common belief that health was in essence, freedom from disease. It has been only in recent years that a fuller, richer meaning has evolved. The modern concept of health reveals that of the old English term pertaining to the "wholeness" of the individual (Dash, 2004, p. 306). People with different backgrounds may hold different conceptions of health and an individual may have different ideas about the meaning of health depending on the circumstances under which the matter is raised (WHO, 2005, p.18).

In the oxford dictionary health means 'the state of being free from sickness, injury or disease, bodily conditions; something indicating good bodily condition' (Ramachandra & Dharmalingam, 2008, p.7).

World Health Organisation (1948) defined “Health is a complete state of physical, mental and social wellbeing, not merely free from sickness or infirmity” (Ramachandra & Dharmalingam, 2008, p.7).

In a physiological sense good health may be defined as state of the perfect operation of all the bodily functions, freedom from bodily pains and also freedom from mental and physical discomfort (Dash, 2004, p. 307).

In nutshell, from the above definitions it can be concluded that the concept of health is evolving and has been defined in a number of ways by members of various disciplines. It can be seen that concept of health encompasses more than having a body free from diseases.

1-2 Good Health: the Sources

There are various factors which affect the health of a person, some are as follows:

Food: Food is an essential element without which human beings cannot survive. Food is a general term used to describe the nutritive material, solid or liquid, taken into human body. Children must be able to benefit from balanced nourishment in order to develop in a healthy manner. Healthy diet is a key tenet in the prevention of many chronic diseases. Healthy eating patterns in childhood and adolescence promote optimal childhood health, growth, and intellectual development; prevent immediate health problems, such as iron deficiency anaemia, obesity, eating disorders, and dental caries; and may prevent long-term health problems, such as coronary heart disease, cancer, and stroke. Nurturing healthy dietary habits is especially important in childhood as this is a critical period of growth and development.

Exercise: Physical exercise is necessary for a healthy growth and development of the body. Body awareness and conscious perception is important for the child to properly

evaluate reactions and to express it what it wants to achieve. It is vital to develop a healthy and active lifestyle in early childhood.

Exercise helps in overcoming the mental defects, because the brain becomes more powerful. Not only this but also the deformities of the body caused by the faulty postures are cured.

Water: water plays a major role in daily life and in the environment of all people, adults as well as children. Water is an indispensable resource in the daily life of all human beings. Clean water is another source of good health. A great deal of sickness is caused by using unclean water. People in villages often bathe, and wash clothes and cattle in tanks. If this water is used for drinking purposes, it may bring disastrous diseases. To make water pure it should be boiled. If water is boiled for 5 to 10 minutes, all the bacteria, spores, cysts, and ova are destroyed (Dandiya, Zafer and Zafer, 2004, p. 140).

Hand washing: Our hands may come in contact with injuries germs and worms at time more easily because they are the principal organs to come in direct touch with certain aspects of the environment. A simple effective habit could prevail dierreah and respiratory diseases. Research has reveals that washing hand with soap at critical time including before eating and before preparing the food and after using the toilet can reduce the dierreah by more than 40%. So hands should be well-cleaned before taking food or eating other things and even after having food with clean water and soap. Hands should be washed for 20 seconds properly with wand nails and risen well with clean water and soap and rub all over the hand, wrists, between fingers.

Cleanliness of body and clothes: we should take bath and wash our body regularly and should wear washed clothes. After playing games and sports we should wash our hands and legs with water and soap.

Eye care: We should take great care of our eyes. Both inadequate light and excess of light are harmful to our eyes. Eyes become fatigued by study and require some rest. Bathing the eyes with cold water at night is a good hygiene habit.

Oral habits: The school plays an important role in promoting oral health. The teacher should check whether the students brush their teeth, dental cavities, dental examinations, and restrict use of sugar and refined carbohydrates. Another important aspect of oral health in the school setting is first aid for dental problems and emergencies. The primary school stage is important for teething, because children shed their milk teeth and acquire a set of new permanent teeth. It is crucial stage, because a number of problems allied to teething may also arise. For one thing, children are highly prone to cavities and tooth decay problems. Utmost care has to be taken for early detection of these, in order that corrective action can be taken.

Avoidance of bad habits: Bad habits such as biting nails with teeth, spitting and blowing of nose anywhere, use of toilet in open space, sleep late at night, cleaning ears with ear buds, doing exercise immediately after having food, touching drinking water with dirty hands, throwing waste material anywhere, etc. should be avoided and make practise from the childhood.

Sleep: Human body is just like a machine, but not machine exactly. After doing some kind of work, a human being has to take rest and sleeping is a very good way of taking rest. It is believe that to keep a person healthy; he should take a sleep of at least 8 hours. Sound sleep is very necessary for removing fatigue. Children who do not sleep for sufficient if a person is not getting proper sleep, he can be caught by various diseases.

Medical check-up: In order to judge the level of health of the students there will be need for medical examination at regular intervals. We have to be watchful regarding

their illnesses. They have to be protected from infectious diseases and treated for ailments, if any.

1-3 Health Awareness: the Concept

Awareness refers to the capability to perceive, to feel, or to be conscious of events, objects, thoughts, emotions or sensory patterns. Awareness is the first step to realization. Knowledge of one's body parts helps in understanding the various changes taking place and those that have already taken place in the child's body so far. The identification of parts and their function helps a child to convey properly if he is facing any discomfort or is unwell physically (Revised School Health Manual, 2010). Health awareness plays a vital role in the wellbeing of the children. For the maintenance of good health a person may have adequate quantities of proper nutrition, safe drinking water, proper shelter with adequate ventilation and lighting, proper clothing, proper work, exercise and rest and personal hygiene are essential (Ramachandra & Dharmalingam, 2008, p. 9). Therefore, health related awareness such as proper sanitation and hygiene, cleanliness, nutrition, etc. is necessary to be practice among the school children for the safe, secure and healthy environment and for the prevention and control of communicable and non-communicable diseases.

1-4 Need and Significance of the Study

School lays the foundation for the future and have a major effect on the issues including health. In our day to day life, school plays a very important role in children health such as physical, mental, emotion and social development of the children. School children are particularly vulnerable to neglect of basic personal hygiene. They do not naturally understand the importance of healthy practices. They should be taught in school as children spend their maximum time in school for 5-6 hours a day. The foundational and learning objectives of the elementary health education

curriculum are grouped into three interrelated and interdependent categories, they are objectives related to knowledge that to acquire students; objectives relating to skills and habits, which correspond to the 'know-how' that students must develop and the objectives relating to attitudes and values that students are to develop (Mishra, Promila & Harish, 2009). Thus the foundation objectives represent knowledge, skills and attitudes that are essential to the programme for all the students. Health and hygiene education programmes are especially important for the primary school children. Therefore, health related awareness such as proper sanitation and hygiene, cleanliness, nutrition, etc. is necessary to be practice among the school children for the safe, secure and healthy environment and for the prevention and control of communicable and non-communicable diseases. These awareness skills should start in childhood because it will usually carry those habits into their adulthood too.

Awareness is the ability to perceive, to feel, or to be conscious of events, objects, thoughts, emotions or sensory patterns. How far children are practising about the health awareness such as personal hygiene, nutrition, sanitation, physical activity, cleanliness and safe water drinking is an important component to be studied. School provide many opportunities and share a responsibility, to help children to learn healthy habits, if for no other reason than to academic performance because such habits are intrinsically link to academic success. So that, those children can learn better and better and face the challenges of future life. In the process of active learning health awareness and practices is an essential part. It includes personal hygiene, sanitation or nutritional hygiene, physical activity. If proper measures are not for making healthy, one may hamper the physical well-being and suffer from many diseases such as skin infection, dental caries, obesity, anaemia, worm infection, etc.

It is very true to say health is wealth. Health is the greatest wealth in everybody's life. In order to maintain a good health we need to eat balance food, daily mild exercises or yoga, fresh air, morning walk, drink clean water, personal hygiene, enough sleep and rest, hand-washing with soap, maintain cleanliness and regular check-ups. To improve health among the children intervention programmes with hygiene promotion remain important. Thus the investigator found the study on health awareness programme in primary school children, the beneficiaries of health awareness skills and expects highly significant improvement in knowledge on water and sanitation facilities and personal hygiene practices. However, limited research has been done to evaluate the health awareness skills among the students of primary school children. Barua (1971) conducted a comparative study of wastage in Sibsagar and Golaghat Subdivisions and concluded that poor health of pupils was the main cause of wastage. Nural Islam (1983) conducted a study to find out some basic factors which affected the effective growth of universal compulsory primary education in Bangladesh since 1947. He reported that the factors which hampered the proper growth of universal compulsory primary education in Bangladesh were lack of health and sanitation conditions. Sriratna (1983) found that the primary schools are remiss in the promotion of safety, health and food service for pupils. Roy (1987) in his study found that reading ability was influenced by health of students. Panda (2000) studied the factors affecting pupil's achievement in primary schools of Orissa. He concluded that performance of the students is affected by the infrastructure facilities and incentives like Mid-day Meal Programme, free text books, etc. Pandey (2004) had worked in the same field. He had reported that educational and attractive environment of school have positive impact on educational achievement of students. Singh (2009) conducted a study of health awareness among students of government and government aided

school and concluded that there is significant difference in health awareness of students of government and government aided primary schools. Further, she concluded that male and female students of government and government aided primary schools also differ significantly. Togoo, Yaseen, Zakirulla, Nasim, Zamzami, (2012); Priya, Devdas, Amarlal, Venkatachalapathy, (2013); Abruquah and Dsane (2014); Kamath, Bijle, Walimbe, Patil (2014); Kamran, et al., (2014); Singh, Kaur, Mengi, Singh, (2014); Kalita, Choudhury, Sarmah, Saikia (2015); Sawra and Swargiary (2015); Shah, Batra, Kabasi, Dany, Rajput, Ishrat, (2015); found that the overall level of oral health knowledge and awareness of the children was low. Further, Lopez-Quintero, Freeman, and Neumark (2009); Asiedu, Van-Ess, Papoe, Setorglo, Asiedu and Anderson (2011); Setyautami, Sermsri and Chompikul (2012); Xuan and Hoat (2013); Grimason, Masangwi, Morse, Jabu, Beattie, Taulo, and Lungu (2014) and Pang, Chau, and Hsu (2015) found most of the school going children did not practice proper hand washing with soap. However, Xuan and Hoat (2013) found the school children performed hand washing with soap satisfactorily. Therefore, keeping in view the findings of the above researches, the investigator of the present study has made an honest attempt to study the Health Awareness among Primary School Students particularly in Sikkim state. Further, no worthwhile endeavour has been made so far to investigate Health Awareness among Primary School Students, especially in context of Sikkim. To fulfil this purpose and to add more knowledge to existing one the investigator selected the following problem for the study:

Health Awareness among Primary School Students of Sikkim

1-5 Research Questions

The present study was attempted to answer the following research questions:

1) What is the nature of distribution of scores on the variable of health awareness for government primary school boys, girls and total sample?
2) What is the nature of distribution of scores on the variable of health awareness for private primary school boys, girls and total sample?
3) Do government and private primary school students differ significantly with respect to their health awareness?

1-6 Objectives of the Study

The following objectives laid down for the present study:

1) To construct and standardize health awareness scale for the primary school students.
2) To study the nature of distribution of scores on the variable of health awareness for government primary school boys, girls and total sample.
3) To study the nature of distribution of scores on the variable of health awareness for private primary school boys, girls and total sample.
4) To compare the government and private primary school students with respect to their health awareness

1-7 Hypotheses of the Study

The following hypotheses are framed for testing in the present study:

1) Government primary school boys do not differ in their level of health awareness.
2) Government primary school girls do not differ in their level of health awareness.

3) Total sample of government primary school students do not differ in their level of health awareness.
4) Private primary school boys do not differ in their level of health awareness.
5) Private primary school girls do not differ in their level of health awareness.
6) Total sample of private primary school students do not differ in their level of health awareness.
7) Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
8) Government Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
9) Private primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
10) Government primary school boys and private primary school boys do not differ significantly with respect to their mean scores on the variable of health awareness.
11) Government primary school girls and private primary school girls do not differ significantly with respect to their mean scores on the variable of health awareness.
12) Government primary school students and private primary school students do not differ significantly with respect to their mean scores on the variable of Health Awareness.

1-8 Delimitations of the Study

The present study was delimited in the following aspects:

1. The present study was delimited to the students of Sikkim state only.
2. The present study was delimited to the government and private schools only.

3. The study was delimited to the students studying in class IV only.

1-9 Operational Definitions of Key Terms

Certain terms were used in the text of the report quite frequently. The operational definitions of these terms are given as under:

1. Primary Students- It connotes the students studying in class IV in government and private primary schools of Sikkim state.

2. Health Awareness- In the present study it refers to the awareness of the primary school students on different preliminary precautionary measures to in store good health as well as different health hazards that generally encounter as a result of wrong practices.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The review of related literature involves the systematic identification, location and analysis of documents containing information related to the research problem. The major purpose of reviewing the literature is to determine what has already been done that relates to your topic. This knowledge not only prevents you from unintentionally duplicating another person's research, but it also gives you the understanding and insight you need to place your topic within a logical frame. Another important purpose of reviewing the literature is to discover research strategies and specific data collection approaches that have or have not been produce in investigations of topics similar to yours (Gay, Mills and Airasian, 2009). There are two major reasons: (1) the review establishes important links between existing knowledge and the research problem being investigated, which enhances significance, and (2) the review provides very helpful information about methodology that can be incorporated into a new study. Use of these ideas, materials, and experiences enhances the overall credibility of new studies (McMillan and Schumacher, 2010). Thus, review of related literature provides valuable help in the development of knowledge in research work. It helps the investigator to gain insight into various aspects of the problem area in formulating the frame work for the study, developing the methodology, constructing the tools for data collection and planning the analysis of data. Since the problem under investigation is the "health awareness among primary school student of Sikkim" the investigator tried to collect studies related to different components of health and health related issues and problems faced by the children. After going through the literature, the investigator

has selected only those which are relevant for the present study and some of the reviews of related literature are presented below.

Lee et al. (2006) conducted a study on a topic entitled "Evidence Based Policy and Practice: Can Health Promoting Schools contribute to the better health and well-being of young people? The Hong Kong Experience". They found that those schools that had achieved an award were adopted the Health Policy Schools (HPS) framework to a higher degree than those schools that did not reach award levels. Their students' health related outcomes were better than the non-award schools. They found school without awards had fallen short in certain criteria in comparison with those schools with award. The non-award schools needed further development in staff health education training, health promotion activities for family members, management of health education resources and broader coverage of health content in their school health education curriculum.

Medhi et al. (2006) conducted a study on a topic entitled "Study of health problems and nutritional status of tea garden population of Assam". The main objective of the study was to describe health problems and nutritional status among tea garden population of Assam. They found the prevalence of underweight among children was 59.9% (357 of 596). Worm infection (65.4%, 217 of 332); skin problems; respiratory infections, including tuberculosis; filariasis were present in a significant way. Children suffered more in various diseases. They concluded that health status of the population can be ameliorated through better hygienic practices, environmental sanitation, creating health awareness, nutritional intervention and overall improvement of socioeconomic conditions of the population.

Kremers et al. (2008) conducted a study on a topic entitled "Awareness and habit: Important factors in physical activity in children". The main objective of this study

was to gain insight into the extent to which Dutch children are aware of their own physical activity level, and to what extent children's physical activity is habitual. They found that children with high awareness of personal behaviour and high habit strength were reported to be more physically active.

O'Reilly et al. (2008) conducted a study entitled "The Impact of a School-Based Safe Water and Hygiene Programme on Knowledge and Practices of Students and Their Parents: Nyanza Province, Western Kenya, 2006". The main objective of the study was to assess its impact on students' knowledge and parents' adoption of safe water and hygiene practices. They found improvement among the students' knowledge of correct water treatment procedure (21-65 %, P <001) and knowing when to wash their hands.

Lopez-Quintero, Freeman, and Neumark (2009) found that only 33.6% of the sample reported always or very often washing hands with soap and clean water before eating and after using the toilet. About 7% of students reported regular access to soap and clean water at school.

Deb et al. (2010) conducted a study on topic entitled "Relationship of Personal Hygiene with Nutrition and Morbidity Profile: A Study among Primary School Children in South Kolkata". The main objective of the study was undertaken to find out the status of nutrition and personal hygiene among primary school children and their association with their varied morbidity profiles. They found that the mean personal hygiene score of the girls (4.15 ± 0.98) was significantly higher than that of boys (3.2 ± 1.4) [P<0.05]. Most of the boys (54.37%) and girls (74.07%) were normally nourished as per the CDC growth chart. Over 70% of the children were suffering from one or more morbidities, the most common morbidity in both the sexes being pallor, followed by worm infestation. Personal hygiene scores were

significantly higher ($P<0.05$) among those children who were normally nourished as well as those who did not suffer from any morbidity in the last 15 days. Thus they concluded that care should be taken to improve the pitiable state of personal hygiene and poor sanitary practices of these school children through coordinated and concerted health education measures by teachers as well as parents.

Vivas et al. (2010) conducted a study on topic entitled "Knowledge, Attitudes, and Practices (KAP) of Hygiene among School Children in Angolela, Ethiopia". The main objective of the study was to evaluate the knowledge, attitudes, and practices (KAP) of hygiene among rural school children in Ethiopia and assessed the extent to which proper knowledge of hygiene was associated with personal hygiene characteristics. They found that approximately 52% of students were classified as having adequate knowledge of proper hygiene. Most students reported hand washing before meals (99.0%), but only 36.2% reported using soap. Although 76.7% of students reported that washing hands after defecation was important, only 14.8% reported actually following this practice.

Asiedu et al. (2011) found that most school children observed did not practice proper hand washing with soap, both in school and at home due to the unavailability and inaccessibility of hand washing facilities such as soap, towel and clean running water. However, majority (90.2%) of those who used the school toilet practiced hand washing with soap after defecation. Private schools were found to be 63% ($p = 0.02$) less likely to wash their hands after using the toilet, 51% ($p = 0.03$) less likely to wash their hands before eating and 77% ($p<0.001$) less likely to wash their hands with soap after eating compared to their public school counterparts.

Bartfeld and Ryu (2011) conducted a study on topic entitled "The School Breakfast Program and Breakfast-Skipping among Wisconsin Elementary School Children". The main objective of the study is to examine the association between availability of the federal School Breakfast Program and breakfast-skipping among elementary school students in Wisconsin. They found that the parents of children whose school offers the program are much less likely to report that their child skips breakfast on school days than are the parents of similar children in non-participating schools. The findings suggest that these benefits are concentrated among economically vulnerable children.

Siddibhavi et al. (2011) conducted a study on topic entitled "Oral Health Attitude and Awareness among School Children". The main aim of the study is to assess the attitude and awareness regarding oral health among school children in Belgaum of age 9 to 14 years. The objectives of this study were to find out the oral health attitude and awareness among school children, collect the data regarding the same and analysing the findings based on the data. They found that 77% of the normal school children brushed once a day in the morning and only 23% of them brushed twice a day in the morning and before going to the bed, whereas 72% of the physically challenged children brushed once daily in the morning and 28% of them brushed twice daily in the morning and before going to bed.

Kakkar, Kandpal and Aggarwal (2012) conducted a study on topic entitled "Health status of children under school health services in Doiwala block, Dehradun". The main objective of the study was to study the morbidity status of the school children and elicit relationship of healthy habits with morbidity pattern. They found that overall attendance was 78.2%. Clinical anemia was higher in Girls (46.7%) as compared to Boys (34.1%). Worm infestation was higher in boys (65.1%) as

compared to Girls (57.3%). Overall abnormal visual acuity (8.5%) or eye abnormal (14%) was noticed among study subjects. Dental caries (53.1%) and dermatitis (16.3%) were more in boys. Healthy habits like bathing (82.6%), daily teeth brushing (61.1%), mouth rinsing after meal (53%) and hair clean/combed (80.2%) were more in girls as compared to boys while trimmed nail equally (55%) noticed among both the groups.

Kishor, Lal & Jyoti (2012) conducted a study on a topic entitled "Health awareness among primary school students". The main objective of the study was to investigate the health awareness among government and private primary school students. They found a significant difference between the government and private primary school students (t=2.08) boys and girls of government primary schools (t=2.09) on their health awareness respectively. Whereas, the study further revealed that boys and girls of private primary schools, boy students of government and private primary schools and girl students of government and private primary schools do not differ significantly on their health awareness.

Oyibo (2012) conducted a study titled "Personal hygiene: Knowledge and practices among school children aged 6-14 years in Abraka, Delta State, Nigeria". The objective of this study was to assess the knowledge and practices of basic personal hygiene among school children aged 6-14 years in Abraka, Delta State, Nigeria. He found that 29.4%, 37.0% and 46.3% of them washed their hands after using toilet, wash their uniform daily and wash their hands after playing respectively. The result of physical inspection of the children revealed that 17.9%, 45.2% and 57.4% of them had dirty hair, dirty uniform and dirty nails respectively.

Setyautami, Sermsri and Chompikul (2012) found that nine combinations of hand washing emerged from this study which combined washing hands by using water and

soap with two critical events: before eating and after visiting the toilet. This study demonstrates that the prevalence of proper hand washing was very low among the school students.

Tambekar & Shirsat (2012) conducted a study on topic entitled "Minimization of Illness Absenteeism in Primary School Students Using Low-Cost Hygiene Interventions". The main objective of the study was to safe water and hygiene intervention was evaluated to assess its impact on students' health, hygiene practices and reduction in illness absenteeism in primary school students. They found that by adopting correct water storage (water container with tap), handling and hand washing practices found to improve health and reduction in 20% illness absenteeism in school. Promoting these interventions and improvement in water-behavioural practices prevented in-house water contamination.

Togoo et al. (2012) found that more than half (58.4%) of the children brushed their teeth using tooth brush and paste, 32.1% used miswak, 7.2% used toothpicks and 2.3% used dental floss as a primary cleaning aid.

Dixit et al. (2013) conducted a study on topic entitled "Oral Hygiene awareness and practices among the Nepalese school children in Bhaktapur". The main objective of the study was to evaluate the oral health awareness and practices of school children in Bhaktapur. They found that all the school children selected were using tooth brush and tooth paste to clean their teeth. 66% of the students were brushing once daily and only 34% of students were brushing twice a day. Our study also revealed that 73% children were brushing only in the morning before meal whereas only 27% students were brushing after meal in the night. Only 54% of students were rinsing always after meal whereas 9% never rinsed their mouth after meal. This shows that children were not aware that they should be brushing their teeth twice a day after meal and rinse

their mouth after every meal. Our study also showed that most of the students were not aware of interdental cleaning tools like dental floss and interdental brush, 41% of students were unaware when the tooth brush had to be changed and only 44% students had previous dental visit whereas 54% of students never visited any a dentist before. It was also seen that 67% students were using horizontal brushing strokes and only 21% were using vertical strokes and 12% were using circular strokes.

El-Sabely, Tork and Hussien (2013) conducted a study on topic entitled "Comparative Study of Nutritional Status and Dietary Habits of Children from Public and Private Primary Schools in Zagazig City, Egypt". The main objective of the study was to determine the nutritional status and dietary habits of school aged children (6-12 years) attending public (non-fee paying-NFP) and private (fee paying-FP) primary schools in Zagazig city; capital of Sharqia governorate, Egypt. They found the result that based on the World Health Organization (WHO) standard mean of Body Mass Index (BMI), obesity and overweight constituted higher percentage among students in the private school than in the public school, while underweight was high among students in the public school (18.7%) compared to students in private school (7.5%). More than half of the public school students (52.7%) complaining of short stature compared to 27.4% of the private school students. A statistically significant difference between the two studied groups regarding taking lunch meal (P-value = 0.03) and the students' preference of eating fried food (P-value = 0.00) were detected. Thus they concluded that there were statistically significant differences between the two studied groups regarding their Body Mass Index and daily food consumption.

Islam, Rahaman, and Sarker (2013) conducted a study on topic entitled "Water Supply and Sanitation Facilities in Primary Schools of Gaibandha District in Bangladesh". The main objective of the study was to monitor the present status of

water supply and sanitation facilities of primary school in Gaibandha Sadar, Bangladesh. The study found that, about 86% school had shallow tube well as a source for their drinking water supply and sanitation. About 18% schools had no sanitation facility or inactive sanitation unit. Separate toilet facility for girls and teachers was found in about 69 and 55% schools respectively but only one school has separate toilet facility for male and female teacher. Availability of water, soap and hand washing facility inside girls and boys latrine is in average amount but in teachers toilet it was satisfactory. Most of the schools (69%) have active drainage system at water point where 41% schools have basket in all classes for dumping of solid wastes. In this regard, the proper management and monitoring of existing facilities are required to improve the present water supply and sanitation situation in primary schools of Bangladesh.

Motakpalli et al. (2013) conducted a study on topic entitled "A study on health hygiene among school children in rural field practice area of AJIMS Mangalore in Karnataka: India". The main aim and objectives of the study include to Study the hygiene status among rural school children and to assess the school Water and Sanitation condition and Sanitation condition. They found that out of 500 children examined 63.4% had good personal hygiene 9.6% had fair personal hygiene and 27% had poor personal hygiene. Out of the total, 31% of Children had Caries. 15% had fully blocked Wax in the ear. 21% had coated tongue. 11% had skin infections. This Indicates that more stress on personal hygiene practices like Oral Hygiene to avoid bad breath, trimming of nails, regular cleaning of ears, Washing of hands body and hair etc. frequently at regular bases in schools.

Priya et al. (2013) conducted a study on topic entitled "Oral health attitudes, knowledge and practice among school children in Chennai, India". The main

objective of the study is to investigate the dental health attitudes, knowledge and practice of school children in Chennai using a questionnaire. They found that the overall level of oral health knowledge among the surveyed children was low.

Sarkar (2013) conducted a study on titled "Personal hygiene among primary school children living in a slum of Kolkata". The main objectives of this study was undertaken to find out the knowledge and practice of personal hygiene among the primary school children living in a slum area, to identify any misconception among them regarding the maintenance of personal hygiene, to find out their morbidity pattern, and also to elicit the relationship between practice of personal hygiene among the children and the literacy status of their mother. The study found that the female students were more knowledgeable than the male students regarding the maintenance of personal hygiene. There was a wide gap between practice and knowledge of personal hygiene among the primary school children living in the slum area.

Sibiya and Gumbo (2013) conducted a study entitled topic "Knowledge, Attitude and Practices (KAP) Survey on Water, Sanitation and Hygiene in Selected Schools in Vhembe District, Limpopo, South Africa". The main objective of the study was to assess the knowledge, attitude and practices (KAP) of learners on issues related to water, sanitation and hygiene in selected schools in Vhembe District, South Africa. The found that the level of knowledge about waterborne diseases was relatively high (76.7 ± 1.75%), but knowledge on transmission routes was inadequate. The majority of the respondents had no knowledge when it comes to water-based diseases and their prevention (78.4 ± 1.71%).The attitude and practice on hygiene was also found to be high (91.40 ± 1.16%). Some schools from the urban area had proper hand washing facilities, but there was no soap available. The borehole water quality for rural schools appeared clear, but the microbial quality was unknown. The water supply and

sanitation facilities were inadequate in rural schools, with no hand washing areas and no sanitary bins for girls. Some schools had toilets with broken doors which did not offer privacy.

Takalkar et al. (2013) conducted a study on topic entitled “Hand Hygiene: Perception and Practices of School Going Children from Rural Government Schools of Nalgonda, Andhra Pradesh”. The main objective of the study is to assess the hand-washing behaviour among school children of rural area in Andhra Pradesh. They found that about 80% were washing hands regularly before eating and 87.5% after using the toilet / latrine while in school. About 73% of students were washing their hands under running water. Only 40.0% school children were using soap along with water before eating. Knowledge level observed to be high in the areas of ideal hand washing time (up to 90.0%) and use of soap (87.5%). They concluded that though the frequency of hand washing practices among students was found to be high, soap usage was found to be suboptimal. Also there is a wide gap between knowledge and hand washing practices that needs to be addressed.

Xuan and Hoat (2013) conducted a study on entitled “Hand washing among school children in an ethnically diverse population in northern rural Vietnam”. They found that all 20 homes of school children visited had soap and none of the six schools had soap for hand washing.

Abruquah and Dsane (2014) conducted a study on a topic entitled “Oral Hygiene Awareness among Junior High School Students in Ghana”. This study aimed at evaluating the oral health awareness, attitudes and behaviour of Junior High School (JHS) students of Wenchi in the Brong Ahafo Region of Ghana. They found that found that 77% brushed their teeth twice daily, 54% brushed for 3 or more minutes at any particular tooth brushing time, 92% used fluoride tooth paste whiles 97% had

never visited a dentist before. Public education on proper oral hygiene practices is therefore imperative and of crucial importance.

Ansari & Warbhe (2014) conducted a study titled "Assessment of the Knowledge and Practice Regarding Personal Hygiene among School Children from an Urban Area". The main objectives of the study are to assess the knowledge among school student regarding personal hygiene and to assess the practice of school student regarding personal hygiene. They found that 3% took bath on every alternate day. 90% of student took bath with soap and water. 29% washed their hair once a week 49% used soap and water for hair wash. 3% brushed alternately and 31% brushed twice a day. 95% students used tooth brush and paste to brush their teeth. 70% of them brushed early morning. 52% students visited dentist with complain of dental pain. 78% of student used water with soap to wash their hands. 89% of them cut their nails, 83% students get personal hygiene education in their curriculum. 53% students are aware of daily school hygiene inspection.

Ashok, Kavitha and Kulkarni (2014) conducted a study on topic entitled "A comparative study of nutritional status between government and private primary school children of Mysore city". The main objective of the study was to assess the nutritional status of government and private primary school children of Mysore city. They found that out of 1566 children, 385 (24.5%) were underweight, 132 (8.4%) were overweight, and 65 (4.1%) were obese. Majority of underweight children 226 (32.5%) were found in government school. Except for two overweight children in government school, all overweight and obese children were found in private schools. Socioeconomic status, dietary habits, and physical activity of the child were found to be the determinants of their nutritional status.

Grimason et al. (2014) conducted a study on topic entitled “Knowledge, awareness and practice of the importance of hand-washing amongst children attending state run primary schools in rural Malawi”. They found that pupil appreciation of hygiene issues was reasonable. The standard of facilities for sanitation and hygiene did not significantly impact on the level of knowledge or percentage of school children's hands harbouring faecal bacteria. Evidence from pupils and teachers indicated a poor understanding of principles of disease transmission. Latrines and hand-washing facilities constructed were not child friendly.

Kamath et al. (2014) conducted a study on a topic entitled “Oral hygiene awareness among school children of rural Mangalore”. The main aim of the survey was to assess awareness regarding oral hygiene practice amongst children toward oral health in rural population of Mangalore city. They found that 52% children brush their teeth twice a day and 98.9% children brushed in horizontal direction.

Kamran et al. (2014) conducted a study on topic entitled “Survey of Oral Hygiene Behaviour, Knowledge and Attitude among School Children: A Cross-Sectional Study from Iran”. The study is aimed to evaluate oral hygiene practice, knowledge and attitude among (10-15 yrs.) school children. They found that 83% reported that use of fluoride strengthens teeth and only 18.2% knew that healthy teeth are strong and caries free teeth. Only 5% participant reported the reason for dental visit was general dental check-up while 75% visited dentist only when dental pain. 8.2% had the habit of rinsing their mouth after eating. A linear positive correlation was found between knowledge, attitude and behaviour.

Paliwal et al. (2014) conducted a study on topic entitled “personal Hygiene Habits among School-Going Children in Rural Areas of Jaipur, Rajasthan, India”**.** The main objective of the study was to analyse the level of personal hygiene of the school going

children in rural area of Jaipur. They found that most of the school going children of rural area had developed a good sense of hygiene and the awareness towards keeping themselves clean. Sense of hygiene was found to be increasing among the children of the rural area. It was concluded that the school going children of the rural area are having a good sense of hygiene. They take care of their cleanliness regularly and also spread awareness regarding personal hygiene among others in their locality.

Sekhon Harinder and Minhas (2014) conducted a study on topic entitled "A school based survey on hygiene in a rural area of northern India". The main objective of the study was to find out the prevalent status of personal hygiene. They found that all the children adhered to the good habit of washing their hands after using the toilet or latrine, always, or at least most of the times; and also most of the children used soap and water always to wash hands. Thus they conclude that the study revealed a good standard of hygiene amongst the study population. However, steps are required to be taken so as to improve the status of personal hygiene of all the school children, who are found lacking in this aspect, through various coordinated primordial as well as primary preventive measures like imparting health education.

Singh et al. (2014) conducted a study on topic entitled "A Study of Dental Caries among School Children in rural area of Jammu". The main objective of the study was to assess the children for dental caries by "Oral Cavity Examination" in outdoor daylight or with a torch. They found that over all prevalence of dental caries was 18.01%. The prevalence was slightly higher 18.63% in girls as compared to 17.39% prevalence seen in boys. Low prevalence (7.65%) of Dental caries was seen in children of literate mothers as compared to illiterate mothers having high prevalence rate of 34.12%. The prevalence was higher (100 %) in children with bad oral

cleanliness as compared to prevalence (14.28%) seen in children with good oral hygiene.

Ahad and S. Gheena (2015) conducted a study on topic entitled "Awareness of Tooth Brushing Techniques and Proper Oral Hygiene among School Children". The main aim of the study was to study 250 school children on their awareness of proper tooth brushing techniques and related to knowledge of oral health. When asked about brushing habits, the results show that the majority (53.20%) brush their teeth twice a day, while 46% brush once daily. The rest 0.8% are not sure about their brushing practice.

Biswas et al. (2015) conducted a study on topic entitled "Quantification of Perception Status of Hand Washing Practice among School Children in A Rural Area of West Bengal". The main objective of the study was to know the status of knowledge and practice of hand washing of students in a rural school. They found that students of higher age and higher class had better knowledge and it was significant in both bivariate and multivariable analysis. Female, higher age and higher class were also important determinants of good hand washing practice. Knowledge regarding hand washing was up to the mark while practice was poor.

Jordanova et al. (2015) conducted a study on topic entitled "Water, Sanitation, and Hygiene in Schools in Low Socio-Economic Regions in Nicaragua: A Cross-Sectional Survey". The main objective of the study was to gathered information on: school characteristics; teacher and community participation; water and sanitation infrastructure; and hygiene education and habits. They found that wash coverage was significantly higher in urban than rural areas. Presence of drinking water infrastructure (43%) was lower than sanitation infrastructure (64%). Eighty-one per cent of schools had no hand washing stations and 74% of schools lacked soap.

Sanitation facilities were not in use at 28% of schools with sanitation infrastructure and 26% of schools with water infrastructure had non-functional systems. Only 8% of schools had budgets to purchase toilet-cleaning supplies and 75% obtained supplies from students' families.

Kalita, Choudhury, Sarmah and Saikia (2015) conducted a study on topic entitled "Caries prevalence of school going boys and girls according to sweet taking frequency among different age groups in and around Guwahati city". The objective of this study was to determine the caries prevalence of school going boys and girls in and around Guwahati city, Assam, India. They found that 43.40% boys and girls were affected by caries. Boys (45.85%) showed higher prevalence than girls (40.92%) with a mean value of 5.60 ± 0.03 and 5.28 ± 0.03 respectively, and the difference was statistically significant. Caries is very negligible (1.82% in males and 1.75% in females) among those who occasionally take sweets or never take.

Sawra and Swargiary (2015) conducted a study on topic entitled "Dental caries among schoolchildren of Baksa district, Assam". The main objective of the study was to assess the dental health status of schoolchildren of different schools in Baksa district of Assam. The children belonged to standard one to tenth and were in the age group of 5 to 15 years. They found that the overall prevalence of caries was 7.4 % (n=516). The prevalence of dental caries among the different schools varied from less than 10% to 50%. Most affected were those belonging the 7 to 10 years age group (45.5%). Males (8.1%) had a higher prevalence as compared to females (7.8%). The data of the study reveals that dental caries is prevalent among schoolchildren in this region.

Shah et al. (2015) conducted a study on topic entitled "Dental caries experience among 6-12 year old school children of Budgam district, Jammu and Kashmir State,

India". The main objective of the study was to investigate the caries experience in 6 - 12-yearold schoolchildren in Kashmir Division of Jammu and Kashmir state, India. They found that the females had lower caries experience in both the dentitions as compared to boys.

Shrestha and Angolkar (2015) conducted a study on topic entitled "Improving hand washing among school children: an educational intervention in South". The main objective of the study was to improve hand washing knowledge and practice among school children through health education intervention. They found that the mean knowledge score of personal hygiene was 53.86 which increased to 77.54 after health education intervention, which was statistically significant at paired t 5.17, df 6 and $p<0.01$. They concluded that the change in behaviour of school children was possible if the health education intervention is properly implemented.

Talukdar and Baruah (2015) conducted a study on topic entitled "Prevalence of Skin Infection and Personal Hygiene Practices amongst Primary School Children: A Community Based Cross-Sectional Study in Kamrup (Rural) District of Assam". The main objectives of the study were (a) to assess the prevalence of skin infection among primary schoolchildren and association with socioeconomic status, (b) to assess the personal hygiene practices of the school children. They found that 337 (84.25%) reported of washing their hands before eating and 342 (85.5%) of hand washing after defecation with soap and water. 34.25% of the children were found to wear footwear. 320 (80%) of the school children practiced daily bath; 82.25% had the habit of brushing their teeth daily while only 47.25% children were found to change their clothes daily.

Watharkar et al. (2015) conducted a study on topic entitled "Assessment of risk factors for overweight and obesity among school going children in Kanpur, Uttar

Pradesh". The main objective of the study was to determine risk factors for overweight and obesity among school going children of age group 12-15 years in Kanpur. They found that the prevalence of obesity and overweight was 3.97% and 9.80% respectively and consuming fast foods and carbonated drinks regularly, low levels of physical activity, watching television for more than 2 hours per day or playing computer games for more than 2 hours per day were significantly associated with overweight and obesity. They conclude that unhealthy dietary habits and sedentary lifestyle are the major risk factors for overweight/ obesity in adolescents. Intervention measures focusing mainly on increasing the physical activity, decreasing consumption of energy dense foods and providing psychological support is essential to fight this new emerging problem of obesity in adolescents.

Almansour et al. (2016) conducted a study on topic entitled "Knowledge, attitude, and practice (KAP) of food hygiene among schools students' in Majmaah city, Saudi Arabia". The main objective of the study was to determine the level of knowledge, attitude, and practice of food hygiene among primary, intermediate and high school students and explore association, if any, with socio-demographic differences. They found that the knowledge level was less in primary school students compared to high school students ($p=0.026$). Attitude level was high in primary school students compared to intermediate school students ($p<0.001$). No significant difference was observed between groups with regard to practical levels ($p=0.152$).

Ganganahali, Tondare and Durgawale (2016) conducted a study on topic entitled "Nutritional Assessment of Private Primary School Children in Western Maharashtra: A Cross-sectional Study". The main objective of the study was to study among private primary school children from class I to V were assessed for nutritional status, personal hygiene measures and their mothers regarding knowledge about nutritious

foods. They found that 19.9% of private schools children were undernourished, 8% were grade I short/stunted whereas 10.2% were overweight and 5.7% obese.

Lal and Kavitha (2016) conducted a study on topic entitled "Assessment of Personal Hygiene Knowledge and Practices: An Empirical Study of Schooling Children in Warangal". The main objective of the study was to study the knowledge of personal hygiene of school going children, to find out level of understanding of personal hygiene of children and to examine the practice of personal hygiene in the individual levels. They found that majority of school going boys are practicing personal hygiene. 100% boys do regular bath and 91% brush their teeth daily. 100% students practicing hand wash and 48% used soap for hand wash. 66% students replied that they wash hands after toilet. 85% students are maintaining their clothes clean and neat. It is also observed that 64% students share their combs with other students. 84% students trim their nails regularly and 58% percent students used handkerchief at the time of cough and sneezing. 56% students get awareness on personal hygiene issues from their teachers.

Seenivasan et al. (2016) conducted a study on topic entitled "A Cross Sectional Study on the Health Hygiene Status of School Children in North Chennai". The main objective of the study was to assess the basic hygiene practices among school children in North Chennai. They found that 76.4% students had healthy hygiene practices. Most of the hygiene practices like brushing teeth, hand washing, bathing and throwing wastes in dustbin were good and certain practices like trimming nails once a week, not biting nails, wearing washed clothes daily and drinking boiled water moderate in the study participants.

Subait et al. (2016) conducted a study on topic entitled "Oral health knowledge, attitude and behaviour among students of age 10–18 years old attending Jenadriyah

festival Riyadh; a cross-sectional study". The main objective of the study was to assess the level and aspects of knowledge, attitudes, and behaviours related to oral health among school students who attended a major festival in the City of Riyadh. They found that around 67% students reported brushing their teeth daily. We found significant difference in brushing habit between genders ($P = 0.001$) with girls showing a better dental practice. Compared to boys, girls were more aware about bleeding gums (P value $= 0.001$), oral health effects general health (P value $= 0.004$) and importance of dental check-up (P value $=0.001$). Compared to boys' girls were significantly more conscious about tooth colour (P value $= 0.05$).

Conclusion

A close scrutiny of earlier research studies depicts that there is a difference in the research findings with respect to health awareness among students. Medhi et al. (2006) and Deb et al. (2010) found that children suffering from worm infestation. Whereas Kakkar, Kandpal and Aggarwal (2012) found worm infestation was higher in boys (65.1%) as compared to girls. El-Sabely, Tork and Hussien (2013) and Ashok, Kavitha & Kulkarni (2014) found underweight was high among the students in government school as compared to the students in private school. Whereas Wartharkar et al. (2015) found prevalence of obesity and overweight.

Further, Deb et al. (2010) and Sarkar (2013) found that female students were more knowledgeable than the male students regarding the maintenance of personal hygiene. Whereas, Sibiya and Gumbo (2013); Paliwal et al. (2014); Sekhon, Harinder & Minhas (2014); Seenivasan et al (2016); Motakpali (2013) revealed a good sense of hygiene practice amongst the school going children.

O’Reilly et al. (2008); Oyibo (2012) and Takalkar et al. (2013) found improvement among the students’ knowledge and practice when to wash their hand. Whereas Lopez-Quintero, Freeman and Neumark (2009); Asiedu et al. (2011) observed most school children did not practice proper hand washing with soap.

Togoo et al. (2012) and Abruquah and Dsane (2014) found children have oral hygiene awareness. Whereas, Dixit et al. (2013); Priya et al. (2013) and Ahad and S. Gheena (2015) found overall level of oral health knowledge among the children was low. On the other hand, Kalita et al. (2015); Shah et al. (2015) and Subait et al. (2015) found prevalence of dental caries was higher in boys than girls. Whereas Singh et al. (2014) found prevalence of dental caries was higher in girls as compared to boys.

However in order to reach at a decisive conclusion in this respect, the present study was designed to investigate the health awareness among primary school students.

CHAPTER 3

METHOD AND PROCEDURE

The objective of the present investigation was to study the health awareness among primary school students. To serve this purpose, it was required to draw an adequate sample of primary school students; construct suitable tool for measuring the characteristics under study; and collect the relevant data with the help of this tool. The details regarding these aspects of the study are given as under.

3-1 Method

The aim of present investigation is to develop health awareness scale and to study the health awareness among primary school students. In other words, the present study seeks to describe and interpret what conditions or relationships exist at present in case of primary school students with respect to the variables health awareness. The further purpose of the study is to collect detailed description of existing phenomena with the intent of employing the same to justify current conditions and to make intelligent plans for improving them.

Hence, it is decided to use Descriptive Method of research in the present case which is relevant and justified in view of the objectives of the study.

3-2 The Sample

Sampling is the basis of any scientific investigation. Since in educational research it is neither practically expedient nor scientifically desirable to approach to the total population. Therefore, technique of sampling is employed in which instead every unit of population being tapped only a part of population is drawn and studied.

In the present study the sample was drawn from the primary school students studying in class IV of government and primary schools situated in East and South districts of Sikkim. The sample for the present investigation was drawn by employing the following sampling techniques described below:

Firstly, a district of Sikkim was selected conveniently. From the selected District, 10 (5 government and 5 private) schools were taken on the basis of convenience. However, while choosing the schools it was observed that they are well distributed in the district and are situated at a considerable distance from each other. Further, a sample of 100 (10 from each school) students will be selected randomly for carrying out item analysis of preliminary draft of health awareness scale. The detail distribution of the sample selected for carrying out item analysis of preliminary draft is given below in Table: 3.1:

Table 3.1: The distribution of the sample for carrying out item analysis of preliminary draft of health awareness scale

S. No.	Name of the School	Type of the Institution	Boys	Girls	Number of Students
1	C.S. Rai Jr. Govt. High School	Government	5	5	10
2	Upper Syari Jr. High School		5	5	10
3	Lumsey Jr. High School		5	5	10
4	Lower Syari Sec. School		5	5	10
5	Govt. Secondary School, Sichey		5	5	10

6	Kyi-Di-Khang School	Private	5	5	10
7	Baha'i Sr. Secondary School, Ranipool		5	5	10
8	Sai Gurukul Academy		5	5	10
9	Sri Sathya Sai Prashanti Vidya Mandir Secondary School		5	5	10
10	Baha'i Secondary School, Tadong		5	5	10
Total			**50**	**50**	**100**

Secondly, a sample of 60 students was selected randomly for estimating test-retest reliability of scale. The detail distribution of the sample selected for estimating the test-retest reliability of the scale is given below Table: 3.2:

Table 3.2: The distribution of the sample for estimating the test-retest reliability of health awareness scale

S No.	**Name of the School**	**Boys**	**Girls**	**No. of the Students**
1.	C.S. Rai Jr. Govt. High School	15	15	30
2.	Kyi-De-Khang School	15	15	30
Total		**30**	**30**	**60**

Thirdly, a sample of 60 students was selected randomly for computing the split-half reliability of the scale. The detail distribution of the sample selected for computing the split-half reliability of the scale is given below Table: 3.3:

Table 3.3: The distribution of the sample for estimating the split-half reliability of health awareness scale

S No.	Name of the School	Boys	Girls	No. of the Students
1.	C.S. Rai Jr. Govt. High School	15	15	30
2.	Modern Sr. Sec School	15	15	30
Total		30	30	**60**

Fourthly, a sample of 500 (250 boys and 250 girls) students was selected randomly from two districts of Sikkim state i.e. East and South for establishing norms and interpretation of scores obtained on the health awareness scale. The detail distribution of the sample selected for establishing norms is given below Table: 3.4:

Table 3.4: The distribution of the sample for establishing the norms of health awareness scale

S. No.	Name of the School	Type of the Institution	District	Boys	Girls	Number of Students
1.	C.S. Rai Jr. Govt. High School	Government	East	16	23	39
2.	Upper Syari Jr. High School	Government		15	18	33
3.	Govt. Secondary School, Sichey	Government		15	14	29
4.	Lower Syari Sec. School	Government		11	10	21
5.	Lumsey Jr. High School	Government		1	3	4
6.	Modern Sr. Sec. School	Government		17	16	33
7.	Kyi-Di-Khang School	Private		17	11	28
8.	Sri Sathya Sai Prashanti Vidya Madir Secondary School	Private		17	15	32

9.	Baha'i Sr. Secondary School, Ranipool	Private		16	15	31
10.	Govt. Sr. Sec School, Namchi	Government	South	15	16	31
11.	Govt. Purano Namchi Primary School	Government		0	5	5
12.	Govt. New Sec School	Government		19	31	50
13.	Govt. Primary School, Singithang	Government		5	7	12
13.	Sumbuk Sr. Sec. School	Government		14	12	26
14.	Kamerray Jr. High School	Government		9	6	15
15.	Govt. Sec School Assangthang	Government		8	5	13
16.	Mt. Carmel School	Private		36	28	64
17.	Bethang School	Private		10	6	16
18.	New Light Academy	Private		9	9	18
Total				**250**	**250**	**500**

At the last stage, a sample of 200 (100 from government and 100 from private) students from East district of Sikkim was drawn randomly to study the gender and type of school differences among primary school students with respect to their health awareness. The detail distribution of the sample selected for studying the gender and type of school differences among primary school students with respect to their health awareness is given below Table: 3.5:

Table 3.5: The distribution of the sample for studying the gender and type of school differences among primary school students with respect to their health awareness

S. No.	Name of the School	Type of the Institution	Boys	Girls	Number of Students
1	C.S. Rai Jr. Govt. High School	Government	10	10	20
2	Upper Syari Jr. High School		10	10	20
3	Modern Sr. Sec. School		10	10	20
4	Govt. Secondary School, Sichey		10	10	20
5	Lower Syari Sec. School		10	10	20

6	Sri Sathya Sai Prashanti Vidya Mandir Secondary School	Private	10	10	20
7	Kyi-Di-Khang School		10	10	20
8	Baha'i Sr. Secondary School, Ranipool		10	10	20
9	Sai Gurukul Academy		10	10	20
10	Baha'i Secondary School, Tadong		10	10	20
Total			**100**	**100**	**200**

3-3 Tool Used

Every scientific research is processed through certain well designed tools. Tools are nothing but the instrument that helps the researcher to gather data. To collect the requisite data for present study the investigator developed and standardized the Health Awareness Scale in both English and Hindi version for primary school students. The Health Awareness Scale consists of 36 items selected out of a total of 70 items consisting of positively (22) or negatively (14) phrased statements pertaining to the sanitation, Food and Nutrition, Cleanliness, Yoga and Exercise, and Safe Drinking Water areas. The instrument uses a 2-point scale i.e. 'Yes' and 'No'. The maximum possible score for the present scale is 36, children are asked to read the statement carefully and ask to place tick mark (√) on either "Yes" or "No". Each correct answer is given a score of 1 and an incorrect answer a score of 0 (zero). The scale consists of both positive and negative items. All the positive items that are endorsed by the children as "Yes" and all the negative items that are endorsed by the children as "No" are given a score of 1. A score of 0 (zero) is awarded to all other answers. The test-retest and split-half reliability of the scale was found to be 0.77 and 0.85 respectively.

3-4 Procedure for Data Collection

Keeping in view the objectives of the present study the investigator had collected the data with the prior permission of the headmaster of the concerned institutions as mentioned in the tables 3.1 to 3.5. Before administering the tool the students were given all the necessary instructions. After ensuring that the students have responded to all the items, the sheets were collected back. After completing the administration of the tool, the investigator thanked the headmaster, class teacher and the students for their whole hearted cooperation. The collected booklets scored and the data thus obtained were tabulated for further analysis.

CHAPTER 4

DEVELOPMENT OF RESEARCH TOOL

The objective of the present investigation was to study the health awareness among primary school students. To serve this purpose, it was required to construct a suitable tool for measuring the characteristics under study; and collect the relevant data with the help of this tool. The details regarding construction and standardization of the tool is given as under.

4-1 Health Awareness Scale (HAS)

Scale for assessing the health awareness has been specially developed for the primary school children. The scale has been divided into five dimensions, like (a) Sanitation (b) Food and Nutrition (c) Cleanliness (d) Yoga and Exercise; and (e) Safe Drinking Water. The development of the scale involved different phases: collection and writing items, scrutiny and critique, try out, scoring and item analysis followed by reliability, validity, norms and usefulness.

4-2 Collection and Writing of Items

The first step in constructing scale was to collect a number of statements about the subject that provided an adequate sample of primary school students' health awareness. For this purpose the researcher surveyed the relevant information available in the electronic and print media, textbooks, existing psychometric scales and research articles. The investigator also added the statements on the basis of discussions with researchers, doctors, and health workers. Initial investigation generated a long list of statements pertaining to the health

awareness. The list was then categorised in terms of the several aspects of health awareness as given below:

(a) Sanitation

(b) Food and Nutrition

(c) Cleanliness

(d) Yoga and Exercise

(e) Safe Drinking Water

The five dimensions of health awareness scale are briefly discussed here under:

(i) *Sanitation:* In this dimension the items are related to the awareness on personal hygiene habits of primary school students. This dimension indicates how much they are aware of regarding their health especially when using the toilet.

(ii) *Food and Nutrition:* The items which included under this dimension shows the awareness of students towards their food habits like, nutritious food, washing of vegetables and fruits before eating, avoid junk food, drink milk daily, eat light food at night etc.

(iii) *Cleanliness:* Under this dimension the items related to cleanliness habits of the children such as bathing, brushing teeth, hand washing with soap, etc. are included.

(iv) *Yoga and Exercise:* Under this dimension, items regarding awareness on importance of regular physical exercise, swimming, jogging, yoga, dancing, and walking are included.

(v) *Safe Drinking Water:* Everyone needs water to drink and to take bath. There are many diseases those are related to unsafe drinking water like diarrhoea, cholera, typhoid, jaundice, worms, schistosomiasis (bilharzia), guinea worm, skin diseases,

etc. This dimension included the items based on awareness on clean and safe drinking water which is essential to life and good health.

A preliminary draft of 60 items was prepared to explore all the possible dimensions of health awareness. These items were initially prepared in English language in order to improve their usefulness by bringing better understanding among the individuals for whom it is mainly intended for.

4-3 Scrutiny and Critique

After preparing initial draft of the scale, the items were reviewed by seeking the experts' opinion. The initial list of 60 items were given to 10 experts for rating each item on a scale i.e. '0' for item 'not acceptable', '1' for 'doubtful' item and '2' for 'acceptable' item. The experts were researchers, medical officers, psychologists and teachers. On the basis of criticisms and comments offered by experts, only those items which received at last 80% approval of the experts were retained for try-out form of health awareness scale. In the light of this, 6 items were rejected from the initial draft. Thus, after getting the expert's approval, the revised version of the scale consisting of 54 items were used for try out. In addition to this, the help of language experts were also sought in order to remove any sort of linguistic ambiguity contained in the items. Their suggestions were taken into consideration and necessary changes were made.

4-4 Try Out

The number of items constructed were considerably larger than the number needed for the final test. The initial form of "Health Awareness Scale" consisting of 54 items was administered over a sample of 100 primary school students randomly selected from ten

government and private primary schools of East district of Sikkim state. The investigator provided all the necessary instructions required to fill up the scale and also requested them to respond each and every item.

4-5 Scoring

4-5.1 Scoring procedure for try-out

The instrument uses a 2-point scale i.e. 'Yes' and 'No'. The maximum possible score for the doing the tryout of the present scale is 54, children are asked to read the statement carefully and ask to place tick mark (√) on either "Yes" or "No". Each correct answer is given a score of 1 and an incorrect answer a score of 0 (zero). Table 4.1 shows the correct answers that are to be given a score of 1

TABLE 4.1
SCORING KEY FOR TRY-OUT

Items No.	Response	Items No.	Response	Items No.	Response
1.	Yes	19.	Yes	37.	No
2.	Yes	20.	No	38.	No
3.	No	21.	Yes	39.	Yes
4.	Yes	22.	Yes	40.	No
5.	Yes	23.	No	41.	No
6.	Yes	24.	Yes	42.	Yes
7.	Yes	25.	Yes	43.	No
8.	Yes	26.	No	44.	Yes
9.	Yes	27.	Yes	45.	No
10.	Yes	28.	Yes	46.	Yes

11.	No	29.	Yes	47.	Yes
12.	No	30.	Yes	48.	Yes
13.	Yes	31.	Yes	49.	Yes
14.	Yes	32.	Yes	50.	Yes
15.	Yes	33.	Yes	51.	No
16.	No	34.	Yes	52.	No
17.	No	35.	Yes	53.	Yes
18.	No	36.	No	54.	Yes

4-5.2 Scoring procedure for final draft of the scale

As discussed in the preceding paragraph that the present instrument uses a 2-point scale i.e. 'Yes' and 'No'. The maximum possible score for the present scale is 36, children are asked to read the statement carefully and ask to place tick mark (√) on either "Yes" or "No". Each correct answer is given a score of 1 and an incorrect answer a score of 0 (zero).The scale consists of both positive and negative items. All the positive items that are endorsed by the children as "Yes" and all the negative items that are endorsed by the children as "No" are given a score of 1. A score of 0 (zero) is awarded to all other answers. The high score on this scale indicates higher level of health awareness and low score indicates lower level of health awareness. Table 4.2 shows the correct answers that are to be given a score of 1 and Table 4.3 represents the detailed analysis of the possible maximum and minimum scores on different dimensions of health awareness scale.

TABLE 4.2

SCORING KEY FOR FINAL DRAFT OF THE SCALE

A=Sanitation **स्वच्छता**	B=Food and Nutrition **खाद्य और पोषण**	C=Cleanliness **सफाई**
D=Yoga and Exercise **योग और व्यायाम**	E=Safe Drinking Water **सुरक्षित पेय जल**	

D	1	NO	(नहीं)	B	19	YES	(हाँ)
C	2	NO	(नहीं)	B	20	NO	(नहीं)
C	3	YES	(हाँ)	B	21	YES	(हाँ)
C	4	YES	(हाँ)	B	22	NO	(नहीं)
C	5	NO	(नहीं)	D	23	YES	(हाँ)
C	6	YES	(हाँ)	C	24	YES	(हाँ)
D	7	NO	(नहीं)	B	25	NO	(नहीं)
D	8	YES	(हाँ)	C	26	NO	(नहीं)
C	9	YES	(हाँ)	C	27	YES	(हाँ)
B	10	YES	(हाँ)	C	28	NO	(नहीं)
D	11	NO	(नहीं)	D	29	YES	(हाँ)
D	12	YES	(हाँ)	B	30	NO	(नहीं)
E	13	YES	(हाँ)	C	31	YES	(हाँ)
B	14	YES	(हाँ)	A	32	YES	(हाँ)
E	15	YES	(हाँ)	A	33	NO	(नहीं)
E	16	NO	(नहीं)	A	34	YES	(हाँ)
B	17	NO	(नहीं)	A	35	YES	(हाँ)
B	18	YES	(हाँ)	C	36	YES	(हाँ)

Table 4.3
Maximum and Minimum Possible Scores on Different Dimensions of Health Awareness Scale

Sr. No.	Dimension	Possible Score	
		Maximum	Minimum
1	Sanitation	4	0
2	Food and Nutrition	10	0
3	Cleanliness	12	0
4	Yoga and Exercise	7	0
5	Safe Drinking Water	3	0
	Total Score	**36**	**0**

4-6 Item Analysis

An item analysis was done for the selection and rejection of statements for preparing final draft of Health Awareness Scale. For this, the scale was administered on 100 primary school students including both boys and girls studying class IV. Afterwards, 27% of students with lowest total scores and 27% of students with highest total scores on health awareness scale were taken into consideration. The middle 46% students were weeded out and not considered for future analysis. Afterwards, item difficulty and discrimination power were calculated for each and every item. In selecting the items first preference was given to those items which had high positive discrimination index. Finally after the procedure of item analysis, altogether 18 items were rejected as they were not able to meet the criterion and the final scale consisted of 36 items only. Item difficulty and

discrimination power for each of the 54 items is given in table 4.4.

TABLE 4.4
Item difficulty and discrimination power for each of the 54 items of Health Awareness Scale

Item No.	ID	DP	Item No.	ID	DP	Item No.	ID	DP
1	**78.48**	**0.22**	19	92.22	0.55	**37**	**71.48**	**0.14**
2	94.44	0.03	20	100.00	0.00	38	98.14	0.03
3	**68.89**	**0.22**	**21**	**70.74**	**0.18**	**39**	**51.48**	**0.22**
4	**70.74**	**0.11**	**22**	**75.74**	**0.24**	**40**	**59.25**	**0.66**
5	**60.74**	**0.19**	23	100.00	0.00	41	98.14	0.03
6	92.59	0.15	**24**	**65.18**	**0.22**	42	96.29	0.00
7	98.15	0.03	**25**	**72.59**	**0.14**	**43**	**74.07**	**0.22**
8	**37.77**	**0.18**	**26**	**68.51**	**0.33**	**44**	**62.59**	**0.14**
9	**75.92**	**0.20**	**27**	**77.77**	**0.44**	45	100.00	0.00
10	86.29	0.40	**28**	**73.33**	**0.33**	46	92.59	0.07
11	**69.62**	**0.11**	**29**	**54.44**	**0.11**	**47**	**70.74**	**0.18**
12	**62.96**	**0.59**	**30**	**62.59**	**0.14**	48	96.29	0.07
13	**75.92**	**0.25**	**31**	**53.70**	**0.55**	**49**	**42.59**	**0.47**
14	**64.81**	**0.48**	**32**	**62.59**	**0.14**	50	98.14	0.03
15	**72.22**	**0.33**	**33**	**44.44**	**0.11**	**51**	**58.14**	**0.23**
16	**77.77**	**0.29**	**34**	**70.74**	**0.18**	52	100.00	0.00
17	**42.59**	**0.40**	35	94.44	0.11	53	98.14	0.03
18	**77.77**	**0.29**	**36**	**75.92**	**0.25**	54	96.29	0.00

In table 4.4 some items those are selected for the final draft of the scale are in bold letters. For final draft of the scale only those items are retained which have item difficulty and discrimination values ranged from 20% to 80% and 0.10 to 0.70 respectively. After discarding few items a list of 36 items for final draft of the scale is presented below:

TABLE 4.5

List of 36 items for final draft of Health Awareness Scale

Item No.	ID	DP	Item No.	ID	DP
1	78.48	0.22	19	68.51	0.33
2	68.89	0.22	20	77.77	0.44
3	70.74	0.11	21	73.33	0.33
4	60.74	0.19	22	54.44	0.11
5	37.77	0.18	23	62.59	0.14
6	75.92	0.20	24	53.70	0.55
7	69.62	0.11	25	62.59	0.14
8	62.96	0.59	26	44.44	0.11
9	75.92	0.25	27	70.74	0.18
10	64.81	0.48	28	75.92	0.25
11	72.22	0.33	29	71.48	0.14
12	77.77	0.29	30	51.48	0.22
13	42.59	0.40	31	59.25	0.66
14	77.77	0.29	32	74.07	0.22
15	70.74	0.18	33	62.59	0.14
16	75.74	0.24	34	70.74	0.18
17	65.18	0.22	35	42.59	0.47
18	72.59	0.14	36	58.14	0.23

The detailed distribution of the items including both positive and negative items are presented in Table 4.6.

TABLE 4.6 Distribution of items (both Positive and Negative) over five Dimensions of Health Awareness Scale

Sr. No.	Dimension	Nature of Item	Items No.	Items	Total
1	Sanitation	Positive	32,34,35	3	4
		Negative	33	1	
2	Food and Nutrition	Positive	10,14,18,19,21	5	10
		Negative	17,20,22,25,30	5	
3	Cleanliness	Positive	3,4,6,9,24,27,31,36	8	12
		Negative	2,5,26,28	4	
4	Yoga and Exercise	Positive	8,12,23,29	4	7
		Negative	1,7,11	3	
5	Safe Drinking Water	Positive	13,15	2	3
		Negative	16	1	
Items= 3+5+8+4+2			**Total Positive**	**22**	**36**
Items= 1+5+4+3+1			**Total Negative**	**14**	

4-7 Reliability

Reliability is the degree of consistency that the instrument or procedure demonstrates: whatever it is measuring, it does so consistently (Best and Kahn, 2007). It refers to the level of consistency of an instrument and the degree to which the same results are obtained when the instrument is used repeatedly with the same individuals or group. This consistency may be determine by using the same measure twice, administering two equivalent forms of the measures or using a series of items designed to measure similar concept (Ravid, 2011). "Test-Retest Method" and "Split-Half Method" were applied for establishing the reliability of the scale. Firstly, for establishing the test-retest reliability, the health awareness scale was administered twice on a sample of 60 primary school students. After that, the co-efficient of correlation was calculated. It was calculated to be 0.77 which

came out to be significantly high. The time interval between the two tests were 10 days. Secondly, to compute the split-half reliability the whole scale was divided into two halves by taking all odd numbered items as one group and all even numbered items as another group. The co-efficient of reliability was computed between the two halves of the scores by using the "Product Moment Correlation". The co-efficient of reliability of the whole scale came out to be 0.85.

4-8 Validity

Validity of a test or evaluation device can be defined as the degree to which the test measures what it is intended to measure (Aggarwal, 1998). The validity of the health awareness scale was determined in two ways:

(i) Content Validity: The content validity of the scale was established by seeking the opinions of experts. The experts were researchers, medical officers, psychologists and teachers. The preliminary draft of the scale containing 60 items were given to 10 experts for rating each item on a scale i.e. '0' for item 'not acceptable', '1' for 'doubtful' item and '2' for 'acceptable' item. On the basis of comments offered by experts, only those items which received at last 80% approval of the experts were retained for try-out form of health awareness scale. In the light of this, 6 items were rejected from the initial draft. Thus, after getting the expert's approval, the revised version of the scale consisting of 54 items were used for try out. In addition to this, the help of language experts were also sought in order to remove any sort of linguistic ambiguity contained in the items. Their suggestions were taken into consideration and necessary changes were made.

(ii) Concurrent Validity: In order to ascertain the concurrent validity of the health

awareness scale, the scores from each dimension were inter-correlated. These values have been presented in Table 4.7.

Table 4.7
Matrix of inter-correlation between various elements of health awareness scale (N=120) Dimensions of health awareness

Dimension	I	II	III	IV	V
I	----	.314	.483	.381	.316
II	.314	----	.665	.539	.440
III	.483	.665	----	.519	.338
IV	.381	.539	.519	----	.267
V	.316	.440	.338	.267	----

All the correlations are significant at the 0.01 level

It is evident from the matrix of the table 4.7 that inter-correlations range from .267 to .665, which are statistically significant beyond 0.01 level of significance.

4-9 Norms

Norms represent a descriptive framework for interpreting the test score of an individual or a group (Sharma, 2009). Mean and percentile norms were constructed for the health awareness scale. For constructing mean and percentile norms a sample of 500 (250 boys and 250 girls) students was selected randomly from two districts of Sikkim state i.e. East and South. Tables 4.8 to 4.10 summarizes the mean and percentile norms with respect to gender variable of primary school students.

Table 4.8
Mean norms for primary school students of class IV

Group	N	Mean	S.D.	SE_M
Male	250	28.82	4.16	0.26
Female	250	29.02	4.22	0.27

Table 4.9
Percentile norms for primary school students of class IV

Percentile	Score	
	Boys	**Girls**
P99	35	35
P95	34	35
P90	33	34
P80	32	33
P75	32	32
P70	31	31
P60	31	31
P50	29	30
P40	28	29
P30	27	28
P25	26	27
P20	26	26
P10	23	23
P5	21	20

The mean, median and mode of the scores for a sample of 500 (250 boys and 250 girls) students were found to be 28.82, 29.50, 31.00 for boys and 29.02, 30.00, 30.00 for girls respectively. The 75^{th} percentile was calculated to be 32 for both boy and girls. Further, 25^{th} percentile was calculated to be 26 and 27 for boy and girls respectively. Hence, the

qualitative description of the obtained percentile ranks are defined as follows:

Table 4.10
Qualitative description of the obtained percentile rank

Percentile	Scores on HAS		Description
	Boys	Girls	
P99	35	35	Very High level of Health Awareness
P95	34	35	
P90	33	34	
P80	32	33	High level of Health Awareness
P75	32	32	
P70	31	31	Medium level of Health Awareness
P60	31	31	
P50	29	30	
P40	28	29	
P30	27	28	
P25	26	27	Low level of Health Awareness
P20	26	26	
P10	23	23	Very Low level of Health Awareness
P5	21	20	

4-10 Usefulness

This scale consist of 36 items which can be used to know the level of health awareness among primary school students. It appears to be useful for parents, counsellors, health workers, policy makers, teachers and research scholars. The students of different

disciplines like, sociology, social work, physical education, education and psychology etc. can also use it to study the health awareness among primary school students. Further, studies are now needed in order to test the usefulness of this scale in specific research context.

CHAPTER 5
ANALYSIS AND INTERPRETATION OF DATA

The present study aimed at studying the health awareness among primary school students. In order to achieve this objective, a sample of 200 students studying in class IV comprising of 100 boys and 100 girls belonging to government and private schools was drawn from ten government and private primary schools situated in East district of Sikkim. The Health Awareness Scale developed and standardized by the investigator was administered to the selected sample in order to collect the requisite data as discussed in Chapter 3. The data available on the selected variable was tabulated, analyzed and interpreted in the following manner.

5-1 Statistical Techniques Used

In view of the objectives of the study, the following statistical techniques were used to analyze the data.

1) The objective numbers 2 and 3 aimed at studying the nature of distribution of scores of selected samples of government and private primary school boys and girls as well as total sample on the variable of health awareness. Hence, the technique of frequency distribution followed by bar and line diagrams was used in all these cases.
2) Objective number 4 seeks to compare government and private school students with respect to their mean scores on the variable of health awareness. In view of this, the technique of t-test was used in this case.

5-2 Analysis of Data

The data gathered from the sampled students was analyzed objective-wise using the relevant statistical techniques specified above. The detail of the analyses of data collected from the selected sample on the variable of Health Awareness is presented as under.

5-2.1 Studying the Nature of Distribution of Scores

5-2.1.1 Health Awareness among Government Primary School Students

A. Distribution of Scores for Government Primary School Boys on the Variable 'Health Awareness'

The distribution of scores for government primary school boys on the variable 'Health Awareness' is given in Table 5.1.

Table 5.1: Distribution of Scores for Government Primary School Boys on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	25	50.00	100.00
28-31	15	30.00	50.00
24-27	5	10.00	20.00
20-23	4	8.00	10.00
16-19	0	0.00	2.00
12-15	1	2.00	2.00
Total	**50**	**100**	**100**

Highest Score = 35
Lowest Score = 15
Range = 20

B. Distribution of Scores for Government Primary School Girls on the Variable 'Health Awareness'

The distribution of scores for government primary school girls on the variable 'Health Awareness' is given in Table 5.2.

Table 5.2: Distribution of Scores for Government Primary School Girls on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	23	46.00	100.00
28-31	17	34.00	54.00
24-27	7	14.00	20.00
20-23	1	2.00	6.00
16-19	0	0.00	4.00
12-15	2	4.00	4.00
Total	**50**	**100.0**	**100.0**

Highest Score = 35

Lowest Score = 14

Range = 21

C. Distribution of Scores for Total Sample of Government Primary School Students on the Variable 'Health Awareness'

The distribution of scores for total sample of government primary school students on the variable 'Health Awareness' is given in Table 5.3.

Table 5.3: Distribution of Scores for Total Government Primary School Students on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	48	48.00	100.00
28-31	32	32.00	52.00
24-27	12	12.00	20.00
20-23	5	5.00	8.00
16-19	0	0.00	3.00
12-15	3	3.00	3.00
Total	**100**	**100.0**	**100.0**

Highest Score = 35
Lowest Score = 14
Range = 21

Figure 5.1: Bar Diagrams Based upon Frequency Distributions for Boys, Girls and Total Sample of Government Primary Schools for the Scores on Health Awareness

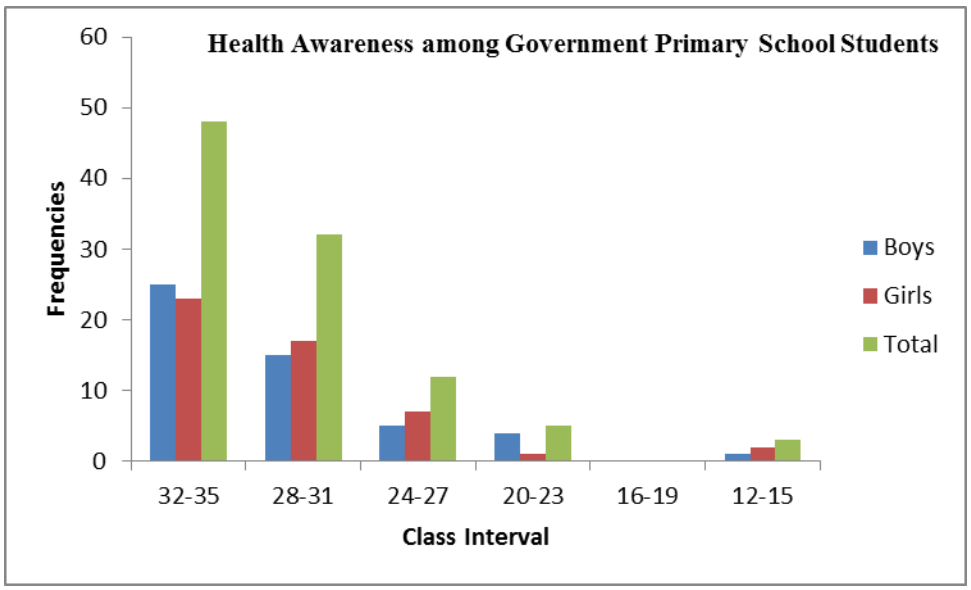
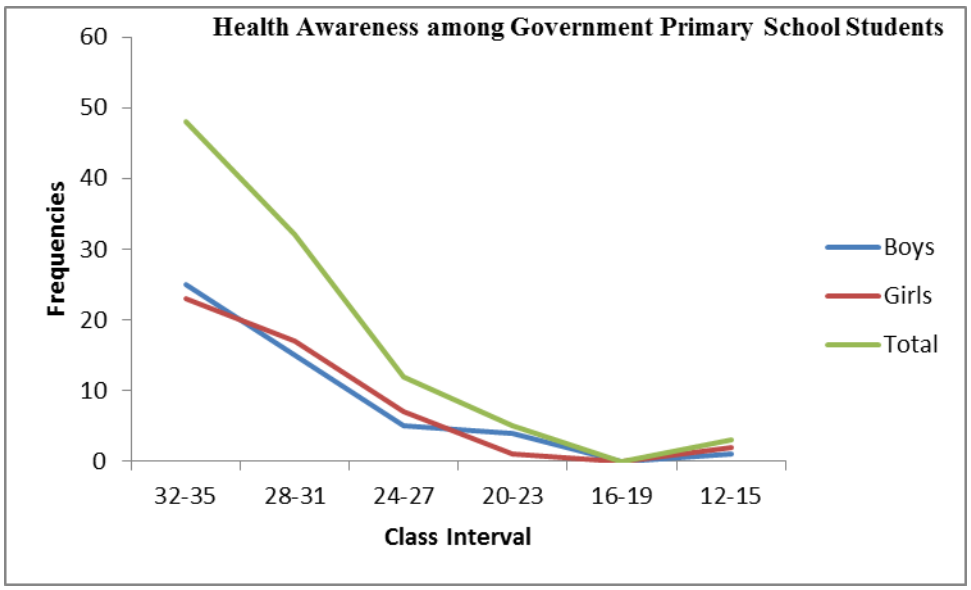


Figure 5.2: Line Diagrams Based upon Frequency Distributions for Boys, Girls and Total Sample of Government Primary Schools for the Scores on Health Awareness



Interpretation

It is revealed from frequency distributions for boys, girls and total sample given in Table 5.1, 5.2 and 5.3 and corresponding bar and line diagrams given in Figures 5.1 and 5.2 that the scores on the variable of Health Awareness are distributed over a range of 20 for boys, 21 for girls and 21 for the total sample. Thus, it may be said that the government primary school students differ in their level of health awareness. Hence, the hypotheses that *"Government primary school boys do not differ in their level of health awareness"; "Government primary school girls do not differ in their level of health awareness" and "Total sample of government primary school students do not differ in their level of health awareness"* are rejected.

It is further revealed from the Tables and Figures that the nature of distribution of scores on the variable of Health Awareness is more or less similar for government primary school boys, girls and total sample. This is evident from the

fact that 90.00, 94.00 and 92.00 per cent subjects fall between the scores 24 to 35 for the boys, girls and total sample respectively indicating almost similar concentration of scores in a limited range.

5-2.1.2 Health Awareness among Private Primary School Students

D. Distribution of Scores for Private Primary School Boys on the Variable 'Health Awareness'

The distribution of scores for private primary school boys on the variable 'Health Awareness' is given in Table 5.4.

Table 5.4: Distribution of Scores for Private Primary School Boys on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	16	32.00	100.00
28-31	19	38.00	68.00
24-27	10	20.00	30.00
20-23	3	6.00	10.00
16-19	2	4.00	4.00
12-15	0	0.00	0.00
Total	**50**	**100**	**100**

Highest Score= 35
Lowest Score = 16
Range = 19

E. Distribution of Scores for Private Primary School Girls on the Variable 'Health Awareness'

The distribution of scores for private primary school girls on the variable 'Health Awareness' is given in Table 5.5.

Table 5.5: Distribution of Scores for Private Primary School Girls on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	19	38.00	100.00
28-31	18	36.00	62.00
24-27	9	18.00	26.00
20-23	3	6.00	8.00
16-19	0	0.00	2.00
12-15	1	2.00	2.00
Total	**50**	**100.0**	**100.0**

Highest Score = 35

Lowest Score = 12

Range = 23

F. Distribution of Scores for Total Sample of Private Primary School Students on the Variable 'Health Awareness'

The distribution of scores for total sample of private primary school students on the variable 'Health Awareness' is given in Table 5.6.

Table 5.6: Distribution of Scores for Total Private Primary School Students on the variable 'Health Awareness'

Class Interval	Frequency	Percent	Cumulative Frequency
32-35	35	35.00	100.00
28-31	37	37.00	65.00
24-27	19	19.00	28.00
20-23	6	6.00	9.00
16-19	2	2.00	3.00
12-15	1	1.00	1.00
Total	**100**	**100.0**	**100.0**

Highest Score = 35

Lowest Score = 12

Range = 23

Figure 5.3: Bar Diagrams Based upon Frequency Distributions for Boys, Girls and Total Sample of Private Primary Schools for the Scores on Health Awareness

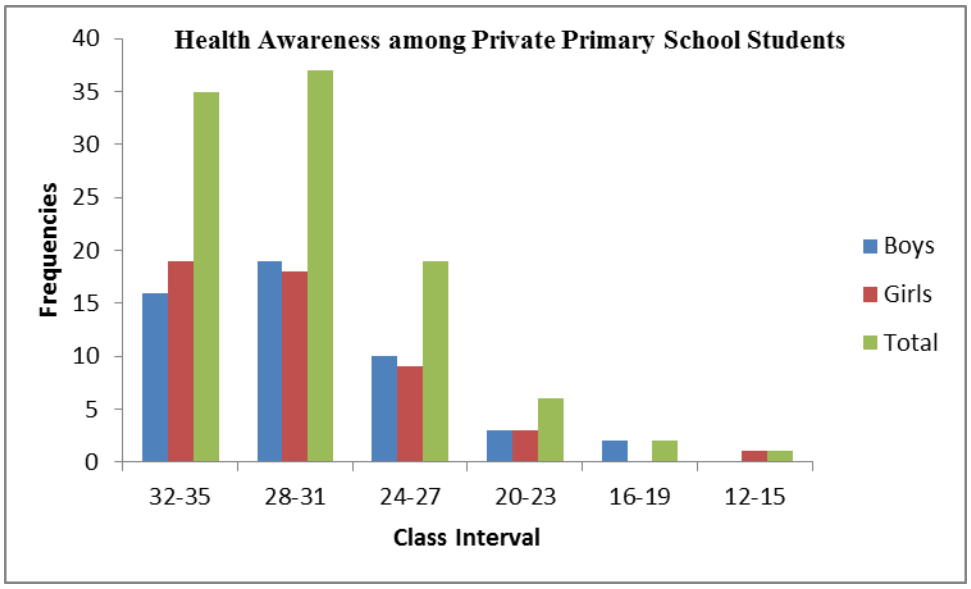
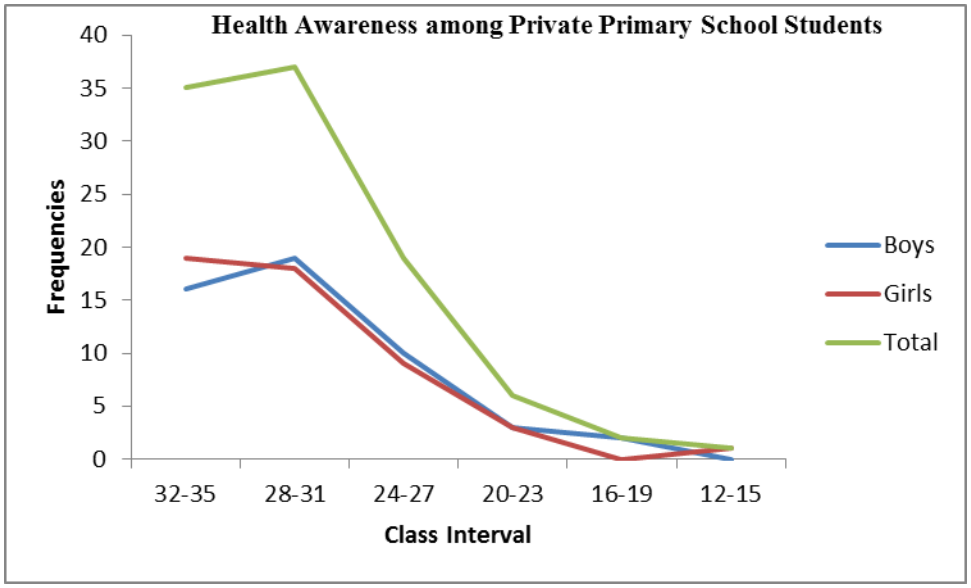


Figure 5.4: Line Diagrams Based upon Frequency Distributions for Boys, Girls and Total Sample of Private Primary Schools for the Scores on Health Awareness



Interpretation

It is revealed from frequency distributions for boys, girls and total sample given in Table 5.4, 5.5 and 5.6 and corresponding bar and line diagrams given in Figures 5.3 and 5.4 that the scores on the variable of Health Awareness are distributed over a range of 19 for boys, 23 for girls and 23 for the total sample. Thus, it may be said that the private primary school students differ in their level of health awareness. Hence, the hypotheses that *"Private primary school boys do not differ in their level of health awareness"; "Private primary school girls do not differ in their level of health awareness" and "Total sample of Private primary school students do not differ in their level of health awareness"* are rejected.

It is further revealed from the Tables and Figures that the nature of distribution of scores on the variable of Health Awareness is more or less similar for private primary school boys, girls and total sample. This is evident from the fact

that 90.00, 92.00 and 91.00 per cent subjects fall between the scores 24 to 35 for the boys, girls and total sample respectively indicating almost similar concentration of scores in a limited range.

5-3 Studying the Gender and Type of School Differences on the Variable of Health Awareness

5-3.1 Primary School Boys and Girls

Table 5.7 presents the t-value for primary school boy and girl students in respect of the variable of health awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.7: t-value for primary school boy and girl students in respect of the variable of health awareness

Group	N	Mean	SD	SE_M	df	t-value
Boys	100	29.77	4.16	0.42	198	0.07 (NS)
Girls	100	29.73	4.45	0.44		

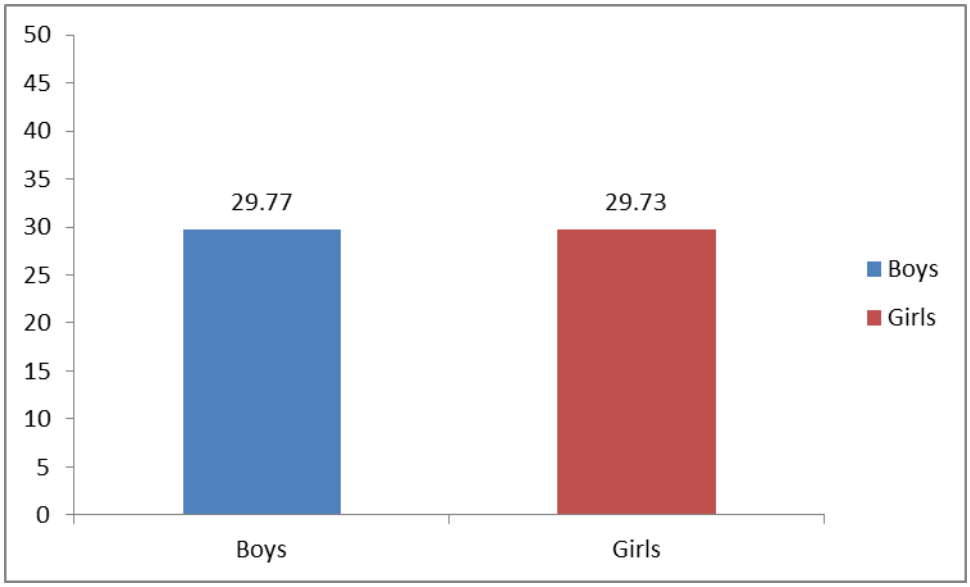
NS- Not Significant

It is revealed from Table 5.7 that t-value came out to be 0.07, which is not significant. This indicates that primary school boy and girl students do not differ significantly with respect to their mean scores on health awareness. Hence, the hypothesis that *"Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness"* is accepted.

Since, the mean score on Health Awareness is higher for boys (29.77) as compared to girls (29.73), it may be inferred that primary school boy students exhibit significantly superior health awareness in comparison to the girls. Such data

for its better understanding have been presented in figure 5.5 in the form of bar diagram.

Figure 5.5: Bar Diagram depicting mean scores on health awareness among boy and girl primary school students



5-3.2 Government Primary School Boy and Girl Students

Table 5.8 presents the t-value for government primary school boy and girl students in respect of the variable of health awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.8: t-value for government primary school boy and girl students in respect of the variable of health awareness

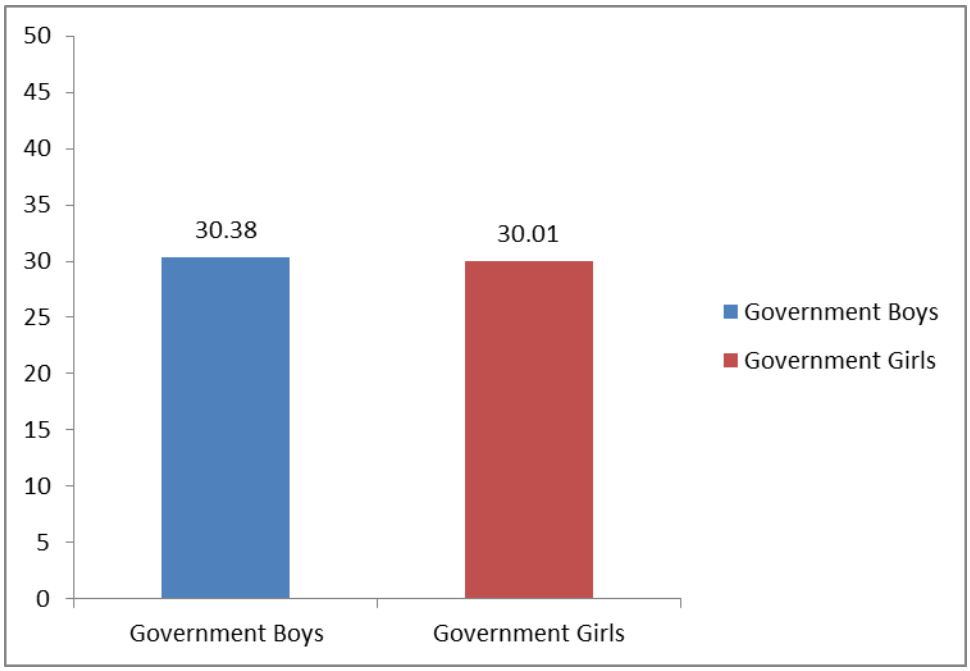
Group	N	Mean	SD	SE_M	df	t-value
Government Boys	50	30.38	4.19	0.59	98	0.45 (NS)
Government Girls	50	30.01	4.33	0.61		

NS- Not Significant

It is revealed from Table 5.8 that t-value came out to be 0.45, which is not significant. This indicates that government primary school boy and girl students do not differ significantly with respect to their mean scores on Health Awareness. Hence, the hypothesis that *"Government primary school boys and girls do not differ significantly with respect to their mean scores on the variable health awareness"* is accepted.

Since, the mean score on Health Awareness is higher for government primary school boys (30.38) as compared to girls (30.01), it may be inferred that government primary school boys exhibit significantly superior Health Awareness in comparison to girls. Such data for its better understanding have been presented in figure 5.6 in the form of bar diagram.

Figure 5.6: Bar Diagram depicting mean scores on health awareness among government boy and girl primary school students



5-3.3 Private Primary School Boy and Girl Students

Table 5.9 presents the t-value for private primary school boy and girl students in respect of the variable of Health Awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.9: t-value for private primary school boy and girl students in respect of the variable of health awareness

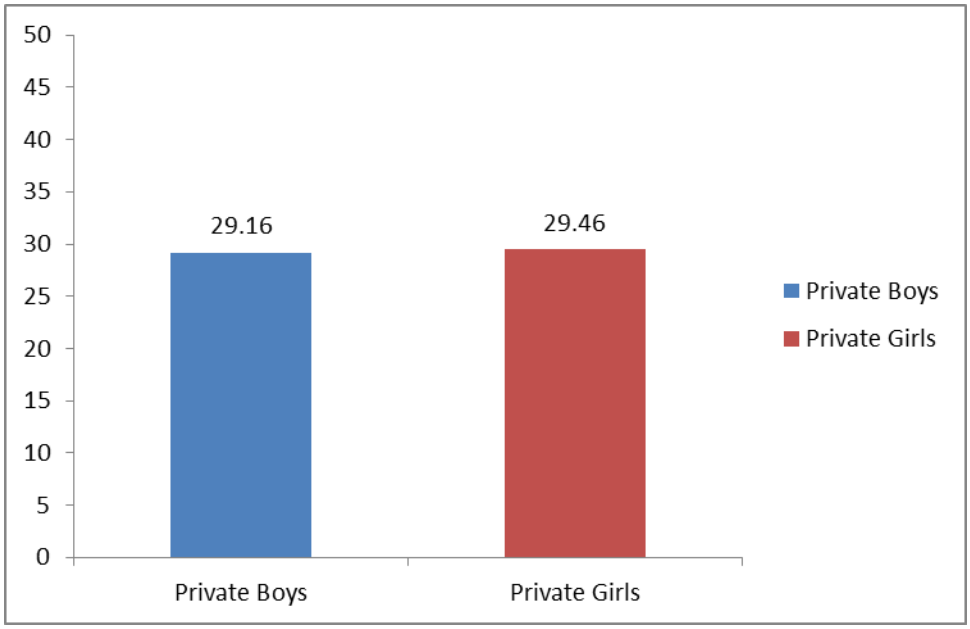
Group	N	Mean	SD	SE_M	df	t-value
Private Boys	50	29.16	4.08	0.58	98	0.35 (NS)
Private Girls	50	29.46	4.59	0.65		

NS- Not Significant

It is revealed from Table 5.9 that t-value came out to be 0.35, which is not significant. This indicates that private primary school boy and girl students do not differ significantly with respect to their mean scores on health awareness. Hence, the hypothesis that *"Private primary school boys and girls do not differ significantly with respect to their mean scores on the variable health awareness"* is accepted.

Since, the mean score on health awareness is higher for private primary school girls (29.46) as compared to boys (29.16), it may be inferred that private primary school girls exhibit significantly superior health awareness in comparison to private primary school boys. Such data for its better understanding have been presented in figure 5.7 in the form of bar diagram.

Figure 5.7: Bar Diagram depicting mean scores on health awareness among private boy and girl primary school students



5-3.4 Government Primary School Boy and Private Primary School Boy Students

Table 5.10 presents the t-value for government primary school boy and private primary school boy students in respect of the variable of health awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.10: t-value for government primary school boy and private primary school boy students in respect of the variable of health awareness

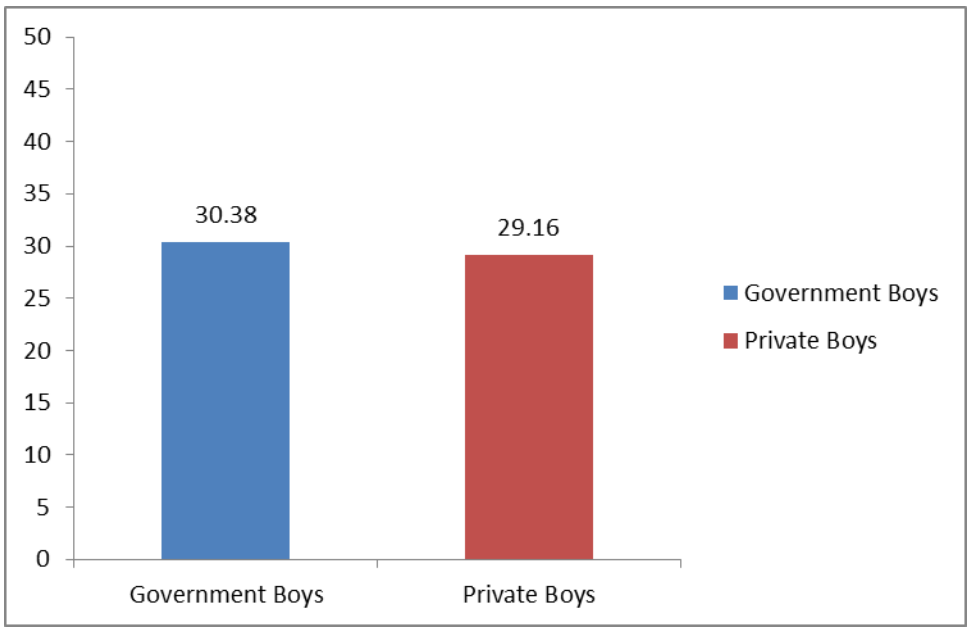
Group	N	Mean	SD	SE_M	df	t-value
Government Boys	50	30.38	4.19	0.59	98	1.47 (NS)
Private Boys	50	29.16	4.08	0.58		

NS- Not Significant

It is revealed from Table 5.10 that t-value came out to be 1.47, which is not significant. This indicates that government primary school boys and private primary school boys do not differ significantly with respect to their mean scores on health awareness. Hence, the hypothesis that *"Government primary school boys and private primary school boys do not differ significantly with respect to their mean scores on the variable health awareness"* is accepted.

Since, the mean score on Health Awareness is higher for government primary school boys (30.38) as compared to private primary school boys (29.16), it may be inferred that government primary school boys exhibit significantly superior health awareness in comparison to the private primary school boys. Such data for its better understanding have been presented in figure 5.8 in the form of bar diagram.

Figure 5.8: Bar Diagram depicting mean scores on health awareness among government primary school boy and private primary school boy students



5-3.5 Government Primary School Girl and Private Primary School Girl Students

Table 5.11 presents the t-value for government primary school girl and private primary school girl students in respect of the variable of health awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.11: t-value for government primary school girl and private primary school girl students in respect of the variable of health awareness

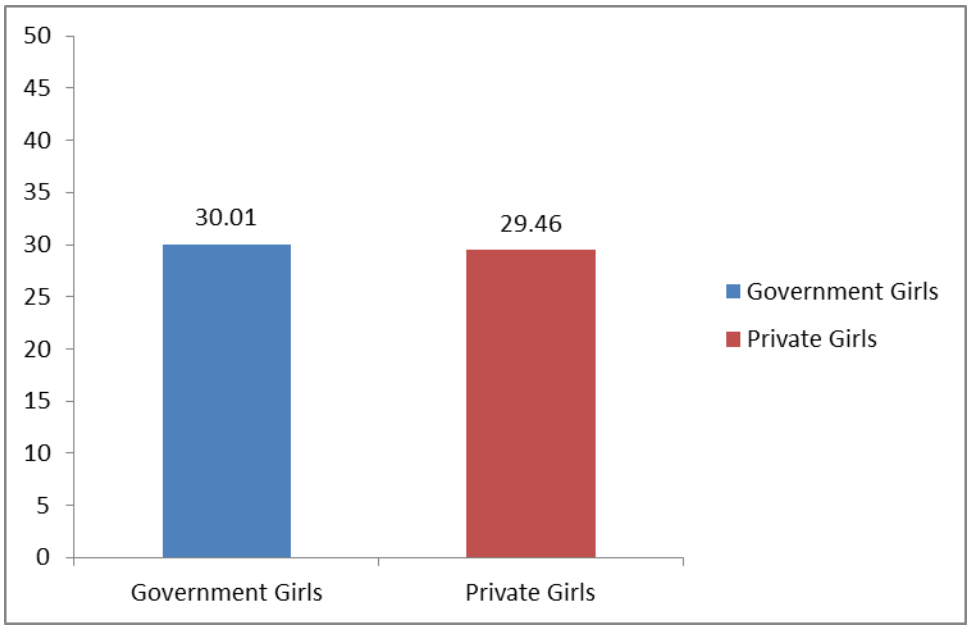
Group	N	Mean	SD	SE_M	df	t-value
Government Girls	50	30.01	4.33	0.61	98	0.61 (NS)
Private Girls	50	29.46	4.59	0.65		

NS- Not Significant

It is revealed from Table 5.11 that t-value came out to be 0.61, which is not significant. This indicates that government primary school girls and private primary school girls do not differ significantly with respect to their mean scores on health awareness. Hence, the hypothesis that *"Government primary school girls and private primary school girls do not differ significantly with respect to their mean scores on the variable health awareness"* is accepted.

Since, the mean score on Health Awareness is higher for government primary school girls (30.01) as compared to private primary girls (29.46), it may be inferred that government primary school girls exhibit significantly superior health awareness in comparison to private primary schools girls. Such data for its better understanding have been presented in figure 5.9 in the form of bar diagram.

Figure 5.9: Bar Diagram depicting mean scores on health awareness among government and private primary school girl students



5-3.6 Government Primary School and Private Primary School Students

Table 5.12 presents the t-value for government primary school and private primary school students in respect of the variable of health awareness along with Ns, Means, SDs and Standard Error of Means for the two groups.

Table 5.12: t-value for government primary school and private primary school students in respect of the variable of health awareness

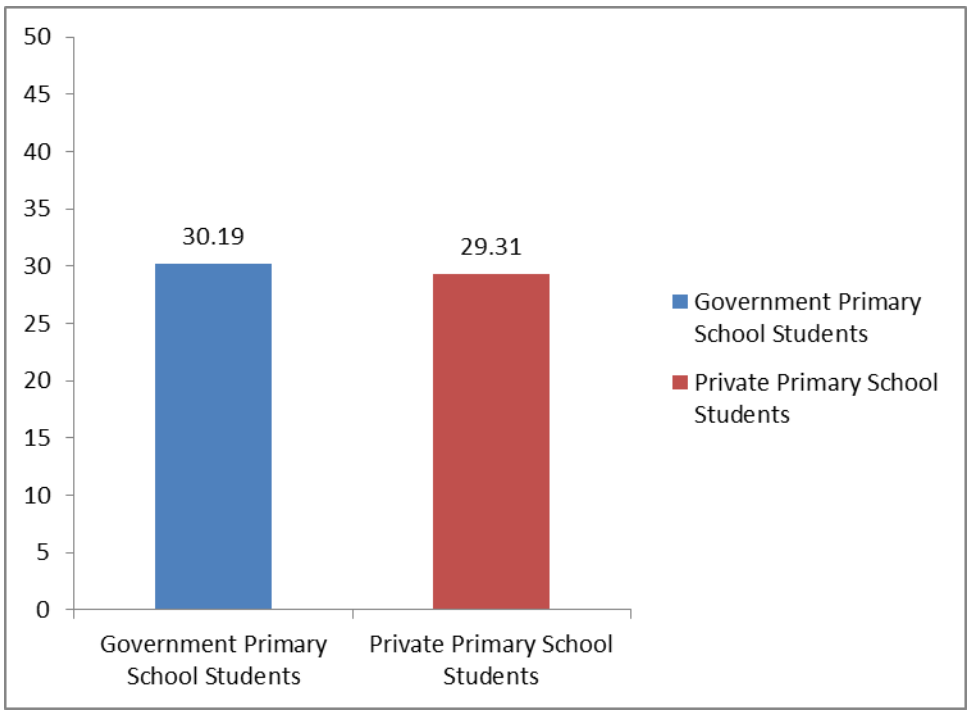
Group	N	Mean	SD	SE_M	df	t-value
Government Primary School Students	100	30.19	4.24	0.42	198	1.45 (NS)
Private Primary School Students	100	29.31	4.32	0.43		

NS- Not Significant

It is revealed from Table 5.12 that t-value came out to be 1.45, which is not significant. This indicates that government primary school students and private primary school students do not differ significantly with respect to their mean scores on health awareness. Hence, the hypothesis that *"Government primary school students and private primary school students do not differ significantly with respect to their mean scores on the variable health awareness"* is accepted.

Since, the mean score on Health Awareness is higher for government primary school students (30.19) as compared to private primary school students (29.31), it may be inferred that government primary school students exhibit significantly superior health awareness in comparison to private primary school students. Such data for its better understanding have been presented in figure 5.10 in the form of bar diagram.

Figure 5.10: Bar Diagram depicting mean scores on health awareness among government primary school and private primary school students



CHAPTER 6

REVIEW, CONCLUSIONS, EDUCATIONAL IMPLICATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

School lays the foundation for the future and have a major effect on the issues including health. In our day to day life, school plays a very important role in children health such as physical, mental, emotion and social development of the children. School children are particularly vulnerable to neglect of basic personal hygiene. They do not naturally understand the importance of healthy practices. They should be taught in school as children spend their maximum time in school for 5-6 hours a day. The foundational and learning objectives of the elementary health education curriculum are grouped into three interrelated and interdependent categories, they are objectives related to knowledge that to acquire students; objectives relating to skills and habits, which correspond to the 'know-how' that students must develop and the objectives relating to attitudes and values that students are to develop (Mishra, Promila & Harish, 2009). Thus the foundation objectives represent knowledge, skills and attitudes that are essential to the programme for all the students. Health and hygiene education programmes are especially important for the primary school children. Therefore, health related awareness such as proper sanitation and hygiene, cleanliness, nutrition, etc. is necessary to be practice among the school children for the safe, secure and healthy environment and for the prevention and control of communicable and non-communicable diseases. These awareness skills should start in childhood because it will usually carry those habits into their adulthood too.

Awareness is the ability to perceive, to feel, or to be conscious of events, objects, thoughts, emotions or sensory patterns. How far children are practising about the health awareness such as personal hygiene, nutrition, sanitation, physical activity, cleanliness and safe water drinking is an important component to be studied. School provide many opportunities and share a responsibility, to help children to learn healthy habits, if for no other reason than to academic performance because such habits are intrinsically link to academic success. So that, those children can learn better and better and face the challenges of future life. In the process of active learning health awareness and practices is an essential part. It includes personal hygiene, sanitation or nutritional hygiene, physical activity. If proper measures are not for making healthy, one may hamper the physical well-being and suffer from many diseases such as skin infection, dental caries, obesity, anaemia, worm infection, etc.

It is very true to say health is wealth. Health is the greatest wealth in everybody's life. In order to maintain a good health we need to eat balance food, daily mild exercises or yoga, fresh air, morning walk, drink clean water, personal hygiene, enough sleep and rest, hand-washing with soap, maintain cleanliness and regular check-ups. To improve health among the children intervention programmes with hygiene promotion remain important. Thus the investigator found the study on health awareness programme in primary school children, the beneficiaries of health awareness skills and expects highly significant improvement in knowledge on water and sanitation facilities and personal hygiene practices. However, limited research has been done to evaluate the health awareness skills among the students of primary school children. Barua (1971) conducted a comparative study of wastage in Sibsagar and Golaghat Subdivisions and concluded that poor health of pupils was the main cause of wastage. Nural Islam (1983) conducted a study to find out some basic factors which affected

the effective growth of universal compulsory primary education in Bangladesh since 1947. He reported that the factors which hampered the proper growth of universal compulsory primary education in Bangladesh were lack of health and sanitation conditions. Sriratna (1983) found that the primary schools are remiss in the promotion of safety, health and food service for pupils. Roy (1987) in his study found that reading ability was influenced by health of students. Panda (2000) studied the factors affecting pupil's achievement in primary schools of Orissa. He concluded that performance of the students is affected by the infrastructure facilities and incentives like Mid-day Meal Programme, free text books, etc. Pandey (2004) had worked in the same field. He had reported that educational and attractive environment of school have positive impact on educational achievement of students. Singh (2009) conducted a study of health awareness among students of government and government aided school and concluded that there is significant difference in health awareness of students of government and government aided primary schools. Further, she concluded that male and female students of government and government aided primary schools also differ significantly. Togoo, Yaseen, Zakirulla, Nasim, Zamzami, (2012); Priya, Devdas, Amarlal, Venkatachalapathy, (2013); Abruquah and Dsane (2014); Kamath, Bijle, Walimbe, Patil (2014); Kamran, et al., (2014); Singh, Kaur, Mengi, Singh, (2014); Kalita, Choudhury, Sarmah, Saikia (2015);Sawra and Swargiary (2015); Shah, Batra, Kabasi, Dany, Rajput, Ishrat, (2015); found that the overall level of oral health knowledge and awareness of the children was low. Further, Lopez-Quintero, Freeman, and Neumark (2009); Asiedu, Van-Ess, Papoe, Setorglo, Asiedu and Anderson (2011); Setyautami, Sermsri and Chompikul (2012); Xuan and Hoat (2013); Grimason, Masangwi, Morse, Jabu, Beattie, Taulo, and Lungu (2014) and Pang, Chau, and Hsu (2015) found most of the school going children did not

practice proper hand washing with soap. However, Xuan and Hoat (2013) found the school children performed hand washing with soap satisfactorily. Therefore, keeping in view the findings of the above researches, the investigator of the present study has made an honest attempt to study the Health Awareness among Primary School Students particularly in Sikkim state. Further, no worthwhile endeavour has been made so far to investigate Health Awareness among Primary School Students, especially in context of Sikkim. To fulfil this purpose and to add more knowledge to existing one the investigator selected the following problem for the study:

Health Awareness among Primary School Students of Sikkim

6-1 Objectives of the Study

The following objectives laid down for the present study:

1) To construct and standardize health awareness scale for the primary school students.
2) To study the nature of distribution of scores on the variable of health awareness for government primary school boys, girls and total sample.
3) To study the nature of distribution of scores on the variable of health awareness for private primary school boys, girls and total sample.
4) To compare the government and private primary school students with respect to their health awareness

6-2 Hypotheses of the Study

The following hypotheses are framed for testing in the present study:

1) Government primary school boys do not differ in their level of health awareness.
2) Government primary school girls do not differ in their level of health awareness.

3) Total sample of government primary school students do not differ in their level of health awareness.
4) Private primary school boys do not differ in their level of health awareness.
5) Private primary school girls do not differ in their level of health awareness.
6) Total sample of private primary school students do not differ in their level of health awareness.
7) Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
8) Government Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
9) Private primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
10) Government primary school boys and private primary school boys do not differ significantly with respect to their mean scores on the variable of health awareness.
11) Government primary school girls and private primary school girls do not differ significantly with respect to their mean scores on the variable of health awareness.
12) Government primary school students and private primary school students do not differ significantly with respect to their mean scores on the variable of Health Awareness.

6-3 Delimitations of the Study

The present study was delimited in the following aspects:

1. The present study was delimited to the students of Sikkim state only.
2. The present study was delimited to the government and private schools only.

3. The study was delimited to the students studying in class IV only.

6- 4 Operational Definitions

Certain terms were used in the text of the thesis quite frequently. The operational definitions of these terms are given as under:

1. Primary Students- It connotes the students studying in class IV in government and private primary schools of Sikkim state.

2. Health Awareness- In the present study it refers to the awareness of the primary school students on different preliminary precautionary measures to in store good health as well as different health hazards that generally encounter as a result of wrong practices.

6- 5 Method

The aim of present investigation is to develop health awareness scale and to study the health awareness among primary school students. In other words, the present study seeks to describe and interpret what conditions or relationships exist at present in case of primary school students with respect to the variables health awareness. The further purpose of the study is to collect detailed description of existing phenomena with the intent of employing the same to justify current conditions and to make intelligent plans for improving them.

Hence, it is decided to use Descriptive Method of research in the present case which is relevant and justified in view of the objectives of the study.

6-6 The Sample

In the present study the sample was drawn from the primary school students studying in class IV of government and primary schools situated in East and South districts of Sikkim. The sample for the present investigation was drawn by employing multistage sampling techniques.

6-7 Tools Used

To collect the requisite data for present study the investigator developed and standardized the Health Awareness Scale in both English and Hindi version for primary school students. The Health Awareness Scale consists of 36 items selected out of a total of 70 items consisting of positively (22) or negatively (14) phrased statements pertaining to the sanitation, Food and Nutrition, Cleanliness, Yoga and Exercise, and Safe Drinking Water areas. The instrument uses a 2-point scale i.e. 'Yes' and 'No'. The maximum possible score for the present scale is 36, children are asked to read the statement carefully and ask to place tick mark (√) on either "Yes" or "No". Each correct answer is given a score of 1 and an incorrect answer a score of 0 (zero). The scale consists of both positive and negative items. All the positive items that are endorsed by the children as "Yes" and all the negative items that are endorsed by the children as "No" are given a score of 1. A score of 0 (zero) is awarded to all other answers. The test-retest and split-half reliability of the scale was found to be 0.77 and 0.85 respectively.

6-8 Statistical Techniques Used

1) The objective numbers 2 and 3 aimed at studying the nature of distribution of scores of selected samples of government and private primary school boys and girls as well as total sample on the variable of health awareness. Hence, the technique of frequency distribution followed by bar and line diagrams was used in all these cases.
2) Objective number 4 seeks to compare government and private school students with respect to their mean scores on the variable of health awareness. In view of this, the technique of t-test was used in this case.

6-9 Conclusions

On the basis of analysis and interpretation of data the following conclusions were drawn for the present study:

1) Government primary school boys differ in their level of health awareness.
2) Government primary school girls differ in their level of health awareness.
3) Total sample of government primary school students differ in their level of health awareness.
4) Private primary school boys differ in their level of health awareness.
5) Private primary school girls differ in their level of health awareness.
6) Total sample of private primary school students differ in their level of health awareness.
7) Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
8) Government Primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
9) Private primary school boys and girls do not differ significantly with respect to their mean scores on the variable of health awareness.
10) Government primary school boys and private primary school boys do not differ significantly with respect to their mean scores on the variable of health awareness.
11) Government primary school girls and private primary school girls do not differ significantly with respect to their mean scores on the variable of health awareness.

12) Government primary school students and private primary school students do not differ significantly with respect to their mean scores on the variable of Health Awareness.

6-10 Educational Implications

The findings of the study have some important implications for educational practices:-

1) Teachers must sort out the list of activities that impart the knowledge about health related issues and practices in the students and conduct those in class.
2) Comprehensive health education needs to be implemented.
3) School should provide necessary information, counseling and health care referral.
4) Special programme are needed to educate the students for proper transmission at health awareness to students.
5) Parents and teacher should provide health education to their children/students.
6) Information, education and communication should be intensified to make students aware of the health problem issues.
7) Different activities should be organized in schools such as lectures, drawing, documentaries, short film, and movies on health awareness.

6-11 Suggestions for Further Research

On the basis of above findings, the investigator is inclined to have following suggestions for further research:-

1. Research can be conducted on more samples on state wise or district wise basis.
2. Research can be conducted on seeking the opinion of the teachers/parents for developing the health awareness among students.
3. Similar study may be conducted on high school students.

4. The study can be extended over more number of samples including the various levels of education.
5. A study can be conducted to see the relationship between health awareness status and academic achievement.
6. A comparative study can be conducted to study the health awareness in relation to locality.

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Health Awareness Scale for Primary School Students

(First Draft for Expert Opinion)

Please fill up the following information:

Name of the Student: ……..

Age: …… Sex: Male/Female……...

Name of the School: …….....

Class: …… Locality: Rural/Urban: ……...

Father's Occupation: ……. Mother's Occupation: ……..

Instructions

Given on the following pages are lists of 60 statements describing some of the dimensions of Health related issues. There is no right or wrong answer for these statements. Please read out each statement carefully and tick (√) mark your option in the appropriate cell either "yes", or "no".

	A. SANITATION	**Response**	
Sl. No.	**Statement**	**Yes**	**No**
1.	I use soap/hand wash bar to wash my hands after using toilet.		
2.	I wash my hands with ash if soap is not available.		
3.	I wear slippers/ shoes while entering in the toilet.		
4.	I use open space for toilet.		
5.	I use sufficient water for the toilet.		
6.	I wash my hands and excretory organs after going to lavatory.		
7.	I use washed and sanitized lavatory.		
8.	I use dustbin to throw waste materials in the toilet.		

	B. FOOD AND NUTRITION	**Response**	
Sl. No.	**Statement**	**Yes**	**No**
9.	I eat fruits and green vegetables for my good health.		
10.	I wash vegetables and fruits with clean water before eating.		
11.	I chew the food nicely before swallowing it.		

12.	I like to swallow my food very fast.		
13.	I eat stale food in the morning.		
14.	I eat nutritive diet.		
15.	I eat lite food at night.		
16.	I wash my hand before eating food.		
17.	I wash my mouth and hand after eating food.		
18.	I drink plenty of 6-8 glasses of water daily.		
19.	I drink a glass of milk every day.		
20.	I skip my breakfast.		
21.	I eat mostly junk food and street food.		
22.	I like to eat too much of sweet because it is good for my health.		
23.	I do not eat chocolate; it may create carriage in teeth.		
24.	I eat food while watching television.		

	C. CLEANLINESS	**Response**	
Sl. No.	**Statement**	**Yes**	**No**
25.	I like to keep my surroundings clean.		
26.	I take bath every day to prevent skin diseases and body odour.		
27.	I may suffer from fever if I take bath daily.		
28.	I wash my face, whole body and limbs with water and soap when I take bath.		
29.	I wash my hands and legs with water and soap after I play.		
30.	I shake my dirty hands with others.		
31	I touch drinking water with dirty hands.		
32.	I do not drink dirty water because germs may get into the body.		
33.	I wash my hands before eating food.		
34.	I wash my mouth and hands after eating food.		
35.	I cover my mouth and nose with a handkerchief when other persons' cough and sneeze.		
36.	I brush my teeth regularly twice in a day.		
37.	I go for regular medical check-ups.		
38.	I clean and comb my hair daily.		
39.	I cut my hair every month.		
40.	I check and cut my finger and toe nails every week.		
41.	I like to increase the length of my nails.		
42.	I bite my finger nails with my teeth.		
43.	I clean my ears with ear buds.		
44.	I always wear clean cloths.		
45.	I throw the waste material any and everywhere.		

	D. YOGA AND EXERCISE	Response	
Sl. No.	**Statement**	**Yes**	**No**
46.	I always sleep late at night.		
47.	I get up early in the morning.		
48.	I do exercise daily.		
49.	I do exercise immediately after having food.		
50.	I participate in games.		
51.	I do not play because it may hamper my body.		
52.	I do morning walk every day.		
53.	I watch television or play video games more than two hours a day.		
54.	I do physical exercise to make my body healthy, active and fit.		

	E. SAFE DRINKING WATER	Response	
Sl. No.	**Statement**	**Yes**	**No**
55.	I drink clean water.		
56.	I drink water in clean pots and cups.		
57.	I drink boiled water every time.		
58.	I touch drinking water with dirty hands.		
59.	I drink water directly from the tap/well.		
60.	I drink filtered water or kept in a pot which is clean and has a lid.		

Health Awareness Scale for Primary School Students
(Preliminary Draft for Try Out)

Please fill up the following information:

Name of the Student: ……..…..….

Age: …… Sex: Male/Female…….....

Name of the School: …….....

Class: …….. Locality: Rural/Urban: ……...

Father's Occupation: ……. Mother's Occupation: ……

Instructions

Following are some statements that are related to health awareness. Please read out each statement carefully and tick (√) mark in the appropriate cell either "yes", or "no". There is no right or wrong answer for these statements. Your views and answers will be kept confidential.

Bhanu Basumatary,
M.Phil. Student,
Department of Education,
Sikkim University,
Sikkim.

Sr. No.	STATEMENTS	RESPONSE	
		YES	NO
1	I always sleep late at night.	☐	☐
2	I always wear clean clothes.	☐	☐
3	I bite my finger nails with my teeth.	☐	☐
4	I brush my teeth regularly twice a day.	☐	☐
5	I check and cut my finger and toe nails every week.	☐	☐
6	I chew the food nicely before swallowing it.	☐	☐
7	I clean and comb my hair daily.	☐	☐
8	I clean my ears with ear buds.	☐	☐
9	I cover my mouth and nose with a handkerchief when other persons' cough and sneeze.	☐	☐
10	I cut my hair every month.	☐	☐
11	I do exercise immediately after having food.	☐	☐
12	I do morning walk every day.	☐	☐
13	I do not drink dirty water because germs may get into the body.	☐	☐
14	I do not eat chocolate; it may create cavities in teeth.	☐	☐
15	I do not play because it may hamper my body.	☐	☐
16	I do physical exercise to make my body healthy, active and fit.	☐	☐
17	I drink 6-8 glasses of water daily.	☐	☐
18	I drink a glass of milk every day.	☐	☐

19	I drink boiled water every time.	☐	☐
20	I drink clean water.	☐	☐
21	I drink filtered water or keep in a pot which is clean and has a lid.	☐	☐
22	I drink water directly from the tap.	☐	☐
23	I drink water in clean pots and cups.	☐	☐
24	I eat food while watching television.	☐	☐
25	I eat fruits and green vegetables for my good health.	☐	☐
26	I eat light food at night.	☐	☐
27	I eat mostly junk food and street food.	☐	☐
28	I eat nutritive diet.	☐	☐
29	I eat stale food in the morning.	☐	☐
30	I get up early in the morning.	☐	☐
31	I go for regular medical check-ups.	☐	☐
32	I like to eat too much of sweet because it is good for my health.	☐	☐
33	I like to increase the length of my nails.	☐	☐
34	I like to keep my surroundings clean.	☐	☐
35	I like to swallow my food very fast.	☐	☐
36	I may suffer from fever if I take bath daily.	☐	☐
37	I participate in games.	☐	☐
38	I shake my dirty hands with others.	☐	☐

39	I skip my breakfast.	☐	☐
40	I take bath every day to prevent skin diseases and body odour.	☐	☐
41	I throw the waste material any and everywhere.	☐	☐
42	I touch drinking water with dirty hands.	☐	☐
43	I use dustbin to throw waste materials in the toilet.	☐	☐
44	I use open space for toilet.	☐	☐
45	I use soap to wash my hands after using toilet.	☐	☐
46	I use sufficient water for the toilet.	☐	☐
47	I use washed and sanitized lavatory.	☐	☐
48	I wash my face, whole body and limbs with water and soap when I take bath.	☐	☐
49	I wash my hands and excretory organs after going to lavatory.	☐	☐
50	I wash my hands and legs with water and soap after I play.	☐	☐
51	I wash my hands before eating food.	☐	☐
52	I wash my mouth and hands after eating food.	☐	☐
53	I wash vegetables and fruits with clean water before eating.	☐	☐
54	I wear slippers/ shoes while entering in the toilet.	☐	☐

Thanking You.

Health Awareness Scale for Primary School Students

प्राथमिक विद्यालय के छात्रों के लिए स्वास्थ्य जागरूकता स्केल

(Final Draft)

Please fill up the following information (कृपया निम्नलिखित जानकारी भरें):

Name (नाम): ……..…..……..…

Age (आयु): ……..…… Sex (लिंग): ……..…….

Name of the School (स्कूल का नाम):..……..

Class (कक्षा): ….……...Locality: Rural/Urban (इलाका: ग्रामीण / शहरी): ……..……

Father's Occupation (पिता का व्यवसाय): ……..

Mother's Occupation (मां का व्यवसाय): ……

Instructions (निर्देश)

Following are some statements that are related to health awareness. Please read out each statement carefully and tick (√) mark in the appropriate cell either "yes" or "no". There is no right or wrong answer for these statements. Your views and answers will be kept confidential.

निम्नलिखित कुछ कथन हैं जो स्वास्थ्य के प्रति जागरूकता से संबंधित हैं। कृपया ध्यान से प्रत्येक कथन को पढ़ें और उचित सेल में या तो "हाँ" या "नहीं" पर टिक (√) निशान लगाएं। इन कथनो के लिए कोई सही या गलत जवाब नहीं है। आपके विचार और जवाब गोपनीय रखे जाएंगे।

Sr. No. क्र.सं.	STATEMENTS कथन	RESPONSE प्रतिक्रिया	
		YES हाँ	NO नहीं
1	I always sleep late at night. मैं हमेशा रात को देर से सोता/सोती हूँ।	☐	☐
2	I bite my finger nails with my teeth. मैं दांतों से अंगुलियों की नाखून काटता/काटती हूँ।	☐	☐
3	I brush my teeth regularly twice a day. मैं नियमित रूप से दिन में दो बार दाँत माँजता/माँजती हूँ।	☐	☐
4	I check and cut my finger and toe nails every week. मैं हर हफ्ते अपने हाथ और पैर की अंगुलियों की नाखूनों की जांच और नाखून काटता/काटती हूँ।	☐	☐
5	I clean my ears with ear buds. मैं इअरबड्स से कान साफ करता/करती हूँ।	☐	☐
6	I cover my mouth and nose with a handkerchief when other persons' cough and sneeze. जब अन्य लोग खाँसते और छींकते हैं, तब मैं अपना मुँह और नाक रुमाल से ढक लेता/लेती हूँ।	☐	☐
7	I do exercise immediately after having food. मैं खाना खाने के तुरंत बाद व्यायाम करता/करती हूँ।	☐	☐
8	I do morning walk every day. मैं हर दिन सुबह को टहलता/टहलती हूँ।	☐	☐
9	I do not drink dirty water because germs may get into the body. मैं गंदा पानी नहीं पीता/पीती हूँ, कारण किटाणु शरीर में आ सकती हैं।	☐	☐
10	I do not eat chocolate; it may create cavities in teeth. मैं चॉक्लेट नहीं खाता/खाती हूँ, इससे मेरी दांतों में छेद हो सकती है।	☐	☐
11	I do not play because it may hamper my body. मैं नहीं खेलता/खेलती हूँ, क्यूंकि इससे शरीर को नुकसान हो सकती है।	☐	☐
12	I do physical exercise to make my body healthy, active and fit. मैं अपने शरीर को स्वस्थ, सक्रिय और फिट रखने के लिए शारीरिक व्यायाम करता/करती हूँ।	☐	☐

Sr. No. क्र.सं.	STATEMENTS कथन	RESPONSE प्रतिक्रिया	
		YES हाँ	NO नहीं
13	I drink 6-8 glasses of water daily. मैं प्रतिदिन 6-8 गिलास पानी पीता/पीती हूँ।	☐	☐
14	I drink a glass of milk every day. मैं प्रतिदिन एक गिलास दूध पीता/पीती हूँ।	☐	☐
15	I drink filtered water or keep in a pot which is clean and has a lid. मैं फिल्टर किया हुआ पानी अथवा पात्र में ढक्कन से ढका हुआ साफ पानी पीता/पीती हूँ।	☐	☐
16	I drink water directly from the tap. मैं सीधे टैप से पानी पीता/पीती हूँ।	☐	☐
17	I eat food while watching television. मैं टेलिविजन देखते हुए खाना खाता/खाती हूँ।	☐	☐
18	I eat fruits and green vegetables for my good health. मैं अपने सुस्वास्थ्य के लिए फल और हरी सब्जियाँ खाता/खाती हूँ।	☐	☐
19	I eat light food at night. मैं रात को हल्का खाना खाता/खाती हूँ।	☐	☐
20	I eat mostly junk food and street food. मैं ज़्यादातर अस्वास्थ्यकर खाना और सड़क में तुरंत बनाए गए खाना खाता/खाती हूँ।	☐	☐
21	I eat nutritious diet. मैं पौष्टिक आहार खाता/खाती हूँ।	☐	☐
22	I eat stale food in the morning. मैं सुबह को बासी खाना खाता/खाती हूँ।	☐	☐
23	I get up early in the morning. मैं सुबह जल्दी उठता/उठती हूँ।	☐	☐
24	I go for regular medical check-ups. मैं नियमित रूप से चिकित्सा जांच के लिए जाता/जाती हूँ।	☐	☐
25	I like to eat too much of sweet because it is good for my health. मैं बहुत ज्यादा मीठा खाना पसंद करता/करती हूँ, क्यूंकि यह मेरे स्वास्थ्य के लिए अच्छा है।	☐	☐

Sr. No. क्र.सं.	STATEMENTS कथन	RESPONSE प्रतिक्रिया	
		YES हाँ	NO नहीं
26	I like to increase the length of my nails. मैं अपने नाखूनों को बढ़ाना पसंद करता/करती हूँ।	☐	☐
27	I like to keep my surroundings clean. मुझे मेरे आस पास की जगहों को साफ रखना अच्छा लगता है।	☐	☐
28	I may suffer from fever if I take bath daily. अगर मैं हर रोज नहाता/नहाती हूँ तो मैं बीमार पर सकता/सकती है।	☐	☐
29	I participate in games. मैं खेल-कूद में भाग लेता/लेती हूँ।	☐	☐
30	I skip my breakfast. मैं सुबह का नाश्ता छोड़ता/छोड़ती हूँ।	☐	☐
31	I take bath every day to prevent skin diseases and body odour. मैं त्वचा रोगों से बचने और शरीर की गंध को रोकने के लिए हर रोज नहाता/नहाती हूँ।	☐	☐
32	I use dustbin to throw waste materials in the toilet. मैं शौचालय में अपशिष्ट सामग्रियों को फेंकने के लिए कूड़ेदान का इस्तेमाल करता/करती हूँ।	☐	☐
33	I use open space for toilet. मैं शौचालय के लिए खुली जगह का उपयोग करता/करती हूँ ।	☐	☐
34	I use washed and sanitized lavatory. मैं धोया हुआ और साफ शौचालय का इस्तेमाल करता/करती हूँ।	☐	☐
35	I wash my hands and excretory organs after going to lavatory. मैं शौचालय जाने के बाद हाथ और मलत्याग करनेवाले अंगों को धोता/धोती हूँ।	☐	☐
36	I wash my hands before eating food. मैं खाना खाने से पहले हाथ धोता/धोती हूँ।	☐	☐

Thanking You.