

**HEALTH RISK BEHAVIOUR AND ATTITUDE TOWARDS
PHYSICAL ACTIVITY AMONG HIGHER SECONDARY
SCHOOL STUDENTS IN KERALA**

By

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for the Degree of Doctor of Philosophy*

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DECLARATION

I hereby, declare that the thesis entitled “HEALTH RISK BEHAVIOUR AND ATTITUDE TOWARDS PHYSICAL ACTIVITY AMONG HIGHER SECONDARY SCHOOL STUDENTS IN KERALA” submitted to the University of Calicut for the award of the Degree of Doctor of Philosophy in Physical Education is a record of bonafied research work done by me under the guidance and supervision of Dr. K.P. Manoj, Assistant Director and Head, Department of Physical Education, University of Calicut, Calicut and it has not previously formed the basis for award of any degree, diploma, associateship, fellowship or other similar title or recognition of any other University.

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LIST OF APPENDIX

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Dedicated

To

My Mother

Chapter One

INTRODUCTION

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 - ↓ Delimitations
 - ↓ Limitations
 - ↓ Definition and Explanation of Terms
 - ↓ Significance of the Study
-

A decade ago, health professionals were worried about communicable diseases of childhood or the effects of malaria, polio, malnutrition, small pox, tuberculosis, cholera and other traditional ailments. Today, urban India is more concerned with degenerative and man made disease like AIDS, with India having the largest AIDS-infected population in the world (5.7 million adults and children in 2005), or lifestyle diseases like stress, diabetes, cancer and cardiovascular problems stemming from unhealthy diet, smoking and lack of regular exercise. If, countries too like human beings, volunteered for comprehensive health checks, India's diagnostic chart 2006 would show some interesting squiggles and wiggles. The verdict? The country is going through what experts call a 'health transition', a term used to describe visible shifts in demographics, changing lifestyles, behaviour and disease patterns.

For the first time in human history, the number of overweight rivals out numbered the underweight, according to a report from the World Watch Institute, a Washington, DC-based research organization. In 1999, the world's underfed population was 1.1 billion showing a decline since 1980, while the number of overweight people was 1.1 billion showing an increase (Gardner and Brian, 2000). At the other end of the malnutrition scale, obesity is one of today's most blatantly visible – yet most neglected – public health problems (WHO, 2002). Malnutrition, as understood now, encompasses a whole spectrum of nutritional disorders including overweight and obesity. The public health impact is enormous: more than half of the world's disease

burden measured in “years of healthy life lost”-is attributable to hunger, overeating, and widespread vitamin and mineral deficiencies. Paradoxically coexisting with under nutrition, an escalating global epidemic of overweight and obesity is taking over many parts of the world. If immediate action is not taken, millions will suffer from an array of serious health disorders.

Obesity is a complex condition with serious social and psychological dimensions, that affects virtually all age and socio-economic groups and threatens to overcome both developed and developing countries. The hungry and the overweight share high levels of sickness and disability, shortened life expectancies, and lower levels of productivity-each of which is a drag on a country’s development. In 1995, there were an estimated 200 million obese adults worldwide and another 18 million under-five children classified as overweight. As of 2000, the number of obese adults has increased to over 300 million. Contrary to conventional wisdom, the obesity epidemic is not restricted to industrialized societies; in developing countries, it is estimated that over 115 million people suffer from obesity-related problems.

Generally, although men have higher rates of overweight, women have higher rates of obesity. For both, obesity poses a major risk for serious diet-related non-communicable diseases, including diabetes mellitus, cardiovascular disease, hypertension and stroke, and certain forms of cancer. Its health consequences range from increased risk of premature death to

serious chronic conditions that reduce the overall quality of life (International Obesity Task Force, 1997). Obesity in the developing world can be seen because of a series of changes in diet, physical activity, health and nutrition, collectively known as the 'nutrition transition.'

As poor countries become more prosperous, they acquire some of the benefits along with some of the problems of industrialized nations. These include obesity. Since urban areas are much advanced in the transition than rural ones, they experience higher rates of obesity. Cities offer a greater range of food choices, generally at lower prices. Urban work often demands less physical exertion than rural work. In addition, as more and more women work away from home, they may be too busy to shop for, prepare and cook healthy meals at home. The fact that more people are moving to the city compounds the problem. In 1900, just 10% of the world population inhabited cities; today, it is 50%.

There is increasing evidence that children and adolescents of affluent families are overweight. It is possibly because of decreased physical activity, sedentary lifestyle, altered eating patterns with more fat content in the diet as found in some studies (Umesh Kapil et al, 2002). Only 19% of school children were found to be engaged in outdoor activities while 90% of the obese children did not engage in any outdoor activity at all. Several other studies in India (Vedavati Subramanyam, 2003) have shown that changes in

dietary patterns, physical activity levels, life styles associated with affluence and migration to urban areas are related to increasing frequencies of obesity and the risk of diseases, such as coronary heart disease and diabetes. Four percent of males and 14% of females above 40 years in India are obese (Vedavati Subramanyam, 1997).

The problem of obesity was found to be more prevalent in the upper-middle class than among slum dwellers according to a study in Delhi by the Nutrition Foundation of India. As against the prevalence rate of obesity of 1% for males and 4% for females in the slums, the corresponding figures for the high-income group among the middle class were 32.2% and 50% respectively. Apart from dietary errors and excesses, the lack of regular physical exercise among urban middle class persons with sedentary occupations is a major contributor to overweight and obesity (Vedavati Subramanyam, 1997). With regard to obesity in adolescents, during 1963-80, the prevalence of childhood obesity increased by 54% among 6-11 year old and 39% among adolescents (12-17 years); severe obesity increased by 98% and 64% respectively. In 1999, 13% of children aged 6-11 years and 14% of adolescents aged 12-19 years in the US were overweight; the prevalence has nearly tripled for adolescents in the past two decades. Risk factors for heart disease, such as high cholesterol and high blood pressure, occur with increased frequency in overweight children and adolescents compared to children with a healthy weight. Type-II diabetes, previously considered an

adult disease, has increased considerably in children and adolescents. Overweight and obesity are closely linked to Type- II diabetes.

Overweight adolescents have a 70% chance of becoming overweight or obese adults. This increases to 80% if one or more parent is overweight or obese. The immediate consequence of overweight as perceived by the children themselves is social discrimination. This is associated with poor self-esteem and depression. Overweight in adolescents may have deleterious effects on their subsequent self-esteem, social and economic characteristics, and physical health (SGC, 2000). Overweight in children/adolescents mainly caused by lack of physical activity, unhealthy eating patterns, or a combination of both with genetics and lifestyle playing important roles in determining a child's weight. Television, computer and video games contribute to children's inactive lifestyles; 43% of adolescents watch TV for 2 hours/day. Children, especially girls, become less active as they move through adolescence. Food preferences developed in childhood remain constant into adulthood. In a society that boasts "super size" meals, all-you-can-eat buffets and spends multi million of rupees advertising to youngsters, it can be quite a challenge for a child to develop good eating habits. Children are eating more meals away from home and those meals are often high in fat and low in fiber-rich carbohydrates such as fruits, vegetables and whole grains. It is easy for children to consume high fat, calorie-dense foods because many kids are

provided with pocket money, have the freedom of choice in meals, especially breakfast, and lunch (Jennifer Gargiulo, 2001).

Another trend that is important to mention is the shift from drinking milk to more non-citrus juices, juice drinks and other calorie-dense beverages. Excessive juice consumption can lead to tooth decay and, in studies where children consumed more than 340 ml a day, found to be associated with increased obesity and reduced height in 2-5 year old children. Large number of overweight children entering adulthood together with weight gain in adulthood an enormous burden - human suffering, lost productivity, and health care expenditures (Jennifer Gargiulo, 2001).

Cost of obesity-related diseases accounts for 2-8% of the total health care expenditure (International Obesity Task Force, 1997). A recent study shows a significant increase in costs with increasing BMI, from Euro 81/month for subject with $25 < \text{BMI} < 30$, to Euro 112.5/month for subjects with $30 < \text{BMI} < 40$, to Euro 162/month for individuals with $\text{BMI} > 40$ ($P < 0.0001$, Kruskal Wallis test). The most important item of cost was hospital care (64% of total costs), followed by drugs (7%), diagnostics, laboratory exams and physicians' visits (6% each), indicating that the major component of the cost of obesity and overweight is not prevention and treatment, but the care for complications (Lorenzo Gmantomani et al, 2002).

The National Institute of Public Health in Stockholm estimates that 4% of Disability-Adjusted Life Year (DALY) lost in the European Union is due to overweight and obesity. Cardiovascular diseases and cancer, together with diabetes, account for about 30% of the total DALYs lost every year in WHO's European Region. Preliminary analysis from the Institute of Public Health in Sweden suggests that 4.5% of DALYs are lost in EU countries due to poor nutrition, with an additional 3.7% and 1.4% due to obesity and physical inactivity. The total percentage of DALYs lost related to poor nutrition and physical inactivity is therefore 9.6%, compared with 9% due to smoking. Obesity is a serious illness that can lead to many medical complications. It is relatively rare (unfortunately) for physicians to treat obesity itself because it is a difficult long-term process to treat effectively. However, treatment for complications are done at enormous cost and the complications include hypertension, diabetes, cancer, heart attacks, strokes, degenerative arthritis, high cholesterol, gallstones, sleep disorders and depression. These confer increased morbidity and mortality on persons who are obese. Obesity is also directly responsible for loss in quality of life through a reduced capacity to perform a range of common daily activities, and through social and psychological effects. It is relatively rare (unfortunately) for physicians to treat obesity itself because it is a difficult long-term process to treat effectively.

Hygiene

Hygiene is commonly understood as preventing infection through cleanliness. In broader call, scientific term hygiene is the maintenance of health and healthy living. Hygiene ranges from personal hygiene, through domestic up to occupational hygiene and public health; and involves healthy diet, cleanliness, and mental health.

The term hygiene originates as a reference to “Hygieia”, who was a daughter of Asclepius and the goddess of health, cleanliness and sanitation. Outward signs of good hygiene include the absence of visible dirt (including dust and stains on clothing) or of bad odour/smells. Since the development of the germ theory of disease, hygiene has come to mean any practice leading to the absence of harmful levels of bacteria.

Good hygiene is an aid to health, beauty, comfort, and social interactions. It directly aids in disease prevention and/or disease isolation. i.e., good hygiene will help keep one healthy and thus avoid illness. If one is ill, good hygiene can reduce one's contagiousness to others.) Washing (with water) is the most common example of hygienic behaviour. Washing is often done with soap or detergent that helps to remove oils and to break up dirt particles so they may be washed away. Frequent hand washing is one among the most common hygienic advice. Hygienic practices—such as frequent hand washing or the use of autoclaved (and thus sterilized) water in

surgery/medical operations—have a profound impact on reducing the spread of disease, this is because they kill or remove disease-causing microbes (germs) in the immediate surroundings. For instance, washing one's hands after using the toilet and before handling food reduces the chance of spreading *E. coli* bacteria and Hepatitis A, both of which are spread from faecal contamination of food. Thus adequate hygiene requires an adequate and convenient supply of clean water.

A four-phased School Sanitation and Hygiene Education (SSHE) programme, jointly organised by the United Nations International Children Emergency Fund and the District Rural Development Agency, to improve the health of school children through better hygiene and sanitation practices, have begun in Tuticorin district in Tamil Nadu (School Sanitation and Hygiene Education' begins, 2006).

One of the salient features and objectives of the SSHE project is that it would ensure safe, secure and healthy environment for the school children and equip them to face the challenges in the life in a better manner. Saying that open defecation posed health threats, the programme was formulated to create awareness of the potential health and subsequent economic benefits of proper sanitation facilities. The UNICEF sources said that estimates suggested that about 65 percent of the country's population still defecate in the open,

with a faecal load of 2 lakh tonnes per day finding its way to the soil and water bodies contaminating them with pathogens.

The programme would further tell the children to wash their hands with soaps after each visit to the toilet and use purified water for consumption to prevent dysentery, gastroenteritis etc. In all, the children would be taught to realise their rights to a healthy and safe learning environment (Hindu, 2006).

Violence in Schools

What are the differences between conflict and violence? If two students are yelling at one another, is that violence? If they are yelling and shoving, is that violence? If they are making threats toward each other, is that violence? The answers are not always clear. Each person, each family, each school, and each community may have a unique definition of conflict and violence.

Conflict is a natural part of relating to others. Conflict is also a great teacher. When handled well, it can increase our understanding of ourselves and lay the foundation for creative solutions. However, conflict too often leads to violence.

What do we know about violence in schools? Sometimes, it seems inevitable. Educator Leroy Robinson tells us that secondary students body

language keep changing since they are together for eight hours a day. There are going to be some types of altercations" (Currie C, Hurrelmann K, Settertobulte W, Smith R, Todd J, eds. Health and Health Behaviour Among Young People, 2000)

By violent behaviour, means serious and extreme behaviour that is intended to cause physical harm to another person. This behaviour can be distinguished from aggressive behaviour, which is often less extreme and more normative and is not necessarily limited to physical harm. From a practical perspective, however, studies have rarely differentiated aggressive behaviour from violent behaviour, although some have indicated differences in the seriousness of the aggressive acts measured (e.g., pushing and shoving versus using a knife). Thus, considering the studies that focused on either aggression or violence, noting the seriousness of behaviours should be measured whenever possible. Because violence as an extreme form of antisocial and delinquent behaviour, often occurs as part of a general involvement in antisocial behaviour, and is not frequently studied apart from other types of antisocial behaviour, hence studies related to serious antisocial behaviour and delinquency should also be considered. Besides, it is acknowledged that not all antisocial and delinquent behaviour, such as use of drugs or burglary, is violent or aggressive, but such behaviours typically are highly correlated with violence and aggression. In addition, focus is confined to violence that is not self-inflicted (e.g., suicide) or carried out as a socially

sanctioned behaviour (e.g., police and military actions). These forms of violence may be undesirable, but they are of a different nature with regard to impact, causes, outcomes, and need for intervention than the behaviours we have examined.

Many psychologists and clinical psychiatrists compile extensive lists and do studies on what may be the cause of school violence. The only common denominator that exists between them all is the fact that there is no one determining factor. School violence does not start in the school. Most behaviour is learned responses to circumstances and situations that are exhibited in our everyday life. Home life conditions are influences on all children. If a child grows up in a home where one of the parents is abused, whether verbally or physically, the child will take this as the norm.

Like all problems that exist in today's society, school violence will not go away overnight. It is a concern that will require diligent work of all parties combined. Parents, teachers, police, counsellors, and communities should work together with the students guiding them in the right direction, giving them the tools necessary to become non-violent individuals. Providing a safe environment in which they can learn and grow thus lessening the fears produced by outside forces, and help them to mature into responsible adults. There will always be someone who wants to hurt them or cause trouble

because of an insecurity that they are suffering, but with the proper instruction students can handle their problems in a non-violent way.

The rising prominence of adolescent violence among national concerns has prompted increasing demands for efforts to curb this urgent problem. These demands have resulted in a torrent of programmes by schools, neighbourhood organizations, police, courts, social services, and health agencies. Unfortunately, the effectiveness of these programs are seldom been tested. Most have been local community responses, packaged curricula that can be "plugged into" ongoing classes, or attempts to apply programmes developed for other problems. Although often based on good intentions and promising ideas, these programmes have rarely been subjected to empirical evaluation of their actual impact on adolescent violence. It is common to find groups claiming the effectiveness of a programme simply because either it has existed for a substantial period or it serves a large number of persons or because testimonials have been collected from clients and authority figures.

Mental Health

It is not unusual for young people to experience "the blues" or feel "down in the dumps" occasionally. Adolescence is always an unsettling time, with the many physical, emotional, psychological and social changes that accompany this stage of life.

Unrealistic academic, social, or family expectations can create a strong sense of rejection and can lead to deep disappointment. When things go wrong at school or at home, teens often overreact. Many young people feel that life is not fair or that things "never go their way." They feel "stressed out" and confused. To make matters worse, teens are bombarded by conflicting messages from parents, friends and society. Today's teens see more of what life has to offer — both good and bad — on television, at school, in magazines and on the Internet. They are also forced to learn about the threat of AIDS and drugs, even if they are not sexually active or using drugs.

Teens need adult guidance more than ever to understand all the emotional and physical changes they are experiencing. When teens' moods disrupt their ability to function on a day-to-day basis, it may indicate a serious emotional or mental disorder that needs attention.

Adolescent depression is increasing at an alarming rate. Recent surveys indicate that as many as one in five teens suffers from clinical depression. This serious problem calls for prompt, appropriate treatment. Depression can take several forms, including bipolar disorder (formally called manic-depression), which is a condition that alternates between periods of euphoria and depression.

Depression can be difficult to diagnose in teens because adults may expect teens to act moody. In addition, adolescents do not always understand

or express their feelings very well. They may not be aware of the symptoms of depression and may not seek help.

These symptoms may indicate depression, particularly when they last for more than two weeks:

- Poor performance in school
- Withdrawal from friends and activities
- Sadness and hopelessness
- Lack of enthusiasm, energy or motivation
- Anger and rage
- Overreaction to criticism
- Feelings of being unable to satisfy ideas
- Poor self-esteem or guilt
- Indecision, lack of concentration or forgetfulness
- Restlessness and agitation
- Changes in eating or sleeping patterns
- Substance abuse
- Problems with authority
- Suicidal thoughts or actions

Teens may experiment with drugs or alcohol or become sexually promiscuous to avoid feelings of depression. Teens also may express their

depression through hostile, aggressive, risk-taking behaviour. Nevertheless, such behaviours only lead to new problems, deeper levels of depression and destroyed relationships with friends, family, law enforcement or school officials.

The suicide attempts among young people may be based on long-standing problems triggered by a specific event. Suicidal adolescents may view a temporary situation as a permanent condition. Feelings of anger and resentment combined with exaggerated guilt can lead to impulsive, self-destructive acts.

Four out of five teens those who have attempted suicide have given clear warnings. Pay attention to these warning signs:

- Suicide threats, direct and indirect
- Obsession with death
- Poems, essays and drawings that refer to death
- Dramatic change in personality or appearance
- Irrational, bizarre behaviour
- Overwhelming sense of guilt, shame or rejection
- Changed eating or sleeping patterns
- Severe drop in school performance
- Giving away belongings

When adolescents are depressed, they have a tough time believing that their outlook can improve. However, professional treatment can have a dramatic impact on their lives. It can put them back on track and bring them hope for the future.

When teens feel down, there are ways they can cope with these feelings to avoid serious depression. All of these suggestions help develop a sense of acceptance and belonging that is so important to adolescents.

- **Try to make new friends.** Healthy relationships with peers are central to teens' self-esteem and provide an important social outlet.
- **Participate in sports, job, school activities or hobbies.** Staying busy helps teens focus on positive activities rather than negative feelings or behaviour.
- **Join organizations that offer programs for young people.** Special programs geared to the needs of adolescents help develop additional interests.
- **Ask a trusted adult for help.** When problems are too much to handle alone, teens should not be afraid to ask for help.

But sometimes, despite everyone's best efforts, teens become depressed. Many factors can contribute to depression. Studies show that some depressed people have too much or too little of certain brain chemicals. Also, a family history of depression may increase the risk for developing

depression. Other factors that can contribute to depression are difficult life events (such as death or divorce), side effects from some medications and negative thought patterns.

It is extremely important that depressed teens receive prompt, professional treatment. Depression is serious and, if left untreated, can worsen to the point of becoming life threatening. If depressed teens refuse treatment, it may be necessary for family members or other concerned adults to seek professional advice.

Therapy can help teens understand why they are depressed and learn how to cope with stressful situations. Depending on the situation, treatment may consist of individual, group or family counselling. Medications that can be prescribed by a psychiatrist may be necessary to help teens feel better.

Some of the most common and effective ways to treat depression in adolescents are:

- **Psychotherapy** provides teens an opportunity to explore events and feelings that are painful or troubling to them. Psychotherapy also teaches them coping skills.
- **Cognitive-behavioural therapy** helps teens change negative patterns of thinking and behaving.

- **Interpersonal therapy** focuses on how to develop healthier relationships at home and at school.
- **Medication** relieves some symptoms of depression and is often prescribed along with therapy.

When depressed adolescents recognize the need for help, they have taken a major step toward recovery. However, remember that few adolescents seek help on their own. They may need encouragement from their friends and support from concerned adults to seek help and follow treatment recommendations (NMHA, 2006).

India, the second most populated country of the world with a population of 1.027 billion, is a country of contrasts. It is characterized as one of the world's largest industrial nations, yet most of the negative characteristics of poor and developing countries define India too. The population is predominantly rural, and 36% of people still live below poverty line.

There is a continuous migration of rural people into urban slums creating major health and economic problems. India is one of the pioneer countries in health services planning with a focus on primary health care. Improvement in the health status of the population has been one of the major thrust areas for social development programmes in the country. However, only a small percentage of the total annual budget is spent on health. Mental health is part of the general health services, and carries no separate budget.

The National Mental Health Programme serves practically as the mental health policy. Recently, there was an eight-fold increase in budget allocation for the National Mental Health Programme for the Tenth Five-Year Plan (2002-2007). India is a multicultural traditional society where people visit religious and traditional healers for general and mental health related problems. However, wherever modern health services are available, people do come forward. India has a number of public policy and judicial enactments, which may affect mental health. These have tried to address the issues of stigma attached to the mental illnesses and the rights of mentally ill people in society. A large number of epidemiological surveys done in India on mental disorders have demonstrated the prevalence of mental morbidity in rural and urban areas of the country and are comparable to global rates. Although India is well placed as far as trained workers in general health services is concerned, the mental health trained personnel are quite limited, and these are mostly based in urban areas. Considering this, development of mental health services has been linked with general health services and primary health care. Training opportunities for various kinds of mental health personnel are gradually increasing in various academic institutions in the country and recently, there has been a major initiative in the growth of private psychiatric services to fill a vacuum that the public mental health services have been slow to address. A number of non-governmental organizations have also initiated activities related to rehabilitation programmes, human rights of mentally ill

people, and school mental health programmes. Despite all these efforts and progress, a lot has still to be done towards all aspects of mental health care in India in respect of training, research, and provision of clinical services to promote mental health in all sections of society (Khandelwal et al, 2004).

Tobacco Use

Researchers have found that children in India smoke more tobacco at a younger age, which could indicate a new wave of tobacco use in developing countries. The result shows that sixth-grade students in Delhi and Chennai used significantly more tobacco than eighth-grade students (Liz Bryan, 2006). Early use of tobacco predicts greater likelihood of addiction, longer lifetime use, and higher rates of lung cancer.

The difference in rates of tobacco use strongly suggests that sixth-grade students in urban India use tobacco at two to four times the rate that eighth graders. These findings warrant confirmation and early intervention in young students.

Perry and her colleagues (2002) surveyed more than 11, 600 students in the sixth and eighth grades at 32 schools in Delhi and Chennai, India about their use of chewing tobacco, cigarettes, and bidis (hand-rolled cigarettes). They also found that male students were more likely to smoke tobacco than female students, and those that attended government schools smoked more than private school students.

The study busts the commonly held belief that higher-grade students use tobacco products more. Besides, significant differences may also be found in the use of various kinds of tobacco in accordance to the school, whether government or private on the basis of sex, age, and grade.

Eleven percent of the surveyed girls (5226) were found to be using tobacco. "Many did so since it was fashionable," the study says. This study, incidentally, also matches the national data available from National Sample Survey (NSS), which shows that tobacco consumption is on the rise among women.

According to the study, while students in private schools said they used tobacco due to the "negative influence of peer group," those in government schools believed it was "fun" to smoke with friends and "the rings of smoke fascinated them."

"Government school students also referred to smoking styles of heroes in films that glamorized the act of smoking. They found the advertisements of cigarettes, beedis and chewing tobacco to be attractive," says Dr Reddy. "Children are receptive to advertisements even if they are surrogate."

The study corroborates the 2005 report on 'Tobacco Control in India' brought out by the Ministry of Health and Family Welfare, which found that between 11 and 22 per cent of school-going students in Mumbai smoke tobacco.

Tobacco use continues to be the leading cause of preventable death worldwide. The burden of tobacco use, however, is shifting from developed to developing countries. By 2030, scientists estimate that 10 million people per year will die from tobacco use, with 70 percent of those deaths occurring in developing countries.

As the United States continues to struggle with the practice of smoking and its links to cancer and other illnesses, less-developed nations are facing even more staggering challenges around tobacco use.

In middle- and low-income countries like India, for instance, between 68,000 and 84,000 children take up smoking every day, compared to roughly 14,000 a day in high-income countries. Thus more than 80 percent of the world's 1.1 billion smokers live in low- and middle-income nations, where tobacco consumption is on the rise.

These and other alarming statistics helped inspire Dana-Farber's Glorian Sorensen, PhD, MPH, to spend five sabbatical months in India this past year studying tobacco use among teachers and workers. Supported by a Fulbright Award, she lived in Mumbai (formerly Bombay) and collaborated with colleagues at the Tata Institute of Fundamental Research, the Tata Memorial Hospital, and other organizations.

According to a recent release from the World Health Organization Representative to India, India counts an estimated 250 million tobacco users and more than 800,000 related premature deaths each year.

Addressing the topic in India is complicated by regional differences in usage and the multitude of tobacco products available there, ranging from cigarettes, cigars, and bidis (traditional leaf-wrapped unfiltered cigarettes) to smokeless tobacco options that are inhaled, chewed, or placed against the gums.

Sorensen looked at the educational and occupational variations in tobacco use in a large sample of residents, collected in the 1990s, in Mumbai, a city of 10 million. The team's analysis, to be published in the *American Journal of Public Health*, indicates that tobacco consumption in India, as in the West, is more common among low-income and less-educated populations.

This problem puts an especially big strain on unemployed and homeless individuals in India, according to Sorensen. "People who have very limited incomes and are addicted to tobacco are making choices to buy it to feed their addiction, rather than feed themselves and their children."

Another project, Sorensen examined tobacco use from the perspective of teachers. Tapping data from two major international surveys (the Global School Personnel Survey and the Global Youth Tobacco Survey), she and colleagues compared consumption patterns and prevention efforts among

educators in two Indian states: Bihar, where 78 percent of teachers consume it, and Maharashtra, where 31 percent do.

In Bihar schools (Bihar — located in the northeast of India, just south of Nepal) they learned, tobacco-control policies were virtually nonexistent, and few teachers taught students about avoidance. Nearly 60 percent of all students who were taken as subjects in 2000 used tobacco products, and their use is "deeply embedded in the social fabric of the community," the paper states.

On the contrary, in Maharashtra, the west-coast state containing Mumbai, about 13 percent of students said they were users. More than one-fourth of teachers said tobacco use was prohibited at school, and instruction about health risks and prevention was much more common than in Bihar, a poorer and more rural state. Such teaching was strongly linked with having tobacco-control policies for staff and students and with teachers' own habits.

The researcher underscores the importance of developing and enforcing such policies and programs. "Given that the majority of tobacco users take up use in their teens and that the risks of tobacco use are highest among those who start smoking early and continue for prolonged periods, it is of paramount importance that successful prevention efforts are implemented in these regions," Sorensen co-wrote in an article to be published in *Preventive Medicine*.

To complement the data analysis, Sorensen and colleagues conducted focus groups in a dozen rural and urban schools in the two states. They asked teachers (in either English or Indian languages) why some consume tobacco, what they teach in the classroom, and what they know about the related health hazards. Some participants described the social pressures to smoke or chew — and the lack of support available for stopping (Glorian, 2004).

Alcohol and Other Drug Use

Alcohol use starts early in life, between the beginning and the middle of adolescence, with peers or even at home (Laranjeira, 1996). This use has medical, psychological and social implications, and can be, for many people, the beginning of a course that leads to alcohol dependence (Galuroz, 2000). Therefore, the knowledge of factors associated with alcohol use in adolescence is highly relevant, as it would allow interventions to reduce risk behaviours.

Use of tobacco and alcohol during childhood is associated with unresponsiveness to school-based prevention programs and greater risk of substance use during adolescence and adulthood. Demonstration studies of middle-school prevention programmes consistently find that children are most likely to report substance use after completing such programme.

There are many theories on the causes of substance abuse. They range from a genetic basis to personality characteristics. Drug or alcohol abuse in children usually seems to be a symptom of confusion, unhappiness, or alienation. Let us look at four general areas of characteristics often seen in these children.

- **Lack of self-discipline.** Children who lack self-discipline often show a lack of internal control and responsibility. They have a self-centered, pleasurable approach to the environment, and feel little personal or social responsibility. These youngsters are often impulsive, act before they think, and have difficulty adhering to duties and responsibilities imposed by others. Trouble with authority figures very frequently and they show poor academic performance because they lack a sense of responsibility. They often set very high goals for themselves, but do not have the self-discipline or knowledge of the process necessary to achieve these goals.
- **Lack of motivation:** Some teenagers appear to lack interest in activities, things, and events. They are disinterested in school and do not have any hobbies. They live day-to-day and moment-to-moment and they show little or no interest in personal achievement or success, or put no value on them. They don't plan ahead or show any concern for future events or consequences they may experience.

- Unhappiness, dissatisfaction, depression, anxiety, boredom. These are frequent symptoms in teenagers who have a negative picture of themselves and see others as better than they are. They generally lack confidence in their abilities. They are unhappy in their home setting and often feel alienated as a part of their family unit.
- Socialization problems: Teens with socialization problems usually maintain friendships on a superficial level or else do not have many friends. Often they do not have a close friend and feel isolated from their peers. They have trouble with authority, difficulties at home, conflicts with family members and peers can easily influence them.

These characteristics are typical, but not conclusive. Adolescents who abuse drugs or alcohol have different personality characteristics and do have different reasons for using them. Given below are some of the most frequent reasons for this behaviour.

- Experimentation: Almost all teenagers try alcohol or drugs. If the child is only experimenting, this behavior will be seen very infrequently or observed a few times, then discontinued. Experimentation is the first stage in the four steps toward substance dependency. It is usually followed by occasional use, which is less than once a week, then regular use, where the child is actively involved with drinking or drugs. The final stage is dependence.

- Peer pressure: All the teenager's friends are involved with drugs or alcohol. He may not be able to go against the influence or pressure of the peer group.
- Rebellion: Sometimes drug or alcohol use is based on the child's tendency to rebel against parental or societal values.
- Confidence problems: Teenagers with negative self-concept are often insecure and lack confidence. This may be the basis of some drug and alcohol usage.
- To promote and enhance social interaction: Some teenagers who have difficulty in interacting with age-mates or with the opposite sex feel that using drugs or alcohol releases inhibitions and makes it easier for them to relate to peers.
- To mask depressive feelings: Some teenagers use drugs or alcohol as self-medication. Their emotional difficulties centre round depression, hopelessness, and unhappiness. These substances seem to help alleviate the symptoms.
- They like it: Some teens are involved because drinking or using drugs makes them feel good and they enjoy the pleasurable feeling of getting high.

There are many symptoms of substance abuse. The list that follows is not conclusive. If your child shows one or two of the symptoms, it does not mean he is using drugs or alcohol. Be concerned when you observe a cluster of symptoms. Look first for symptoms you can see. Often, appearance is affected by the use of drugs or alcohol.

- Seeing the child drunk: The child is drunk frequently. Alcohol or medications disappear from the home. You find hidden drugs or alcohol. You discover store-bought drug paraphernalia (packets of rolling paper, various types of pipes, syringes). You frequently find household items that may be used as drug paraphernalia (plastic bags, baggies, lock-type pouches, aluminum-foil strips, small bottles, boxes, razor blades, weighing scales, kitchen spoons, and bottle caps burnt black on the bottom).
- Loss of interest: Loss of ambition. Loss of interest in hobbies, sports, or activities. Overall deterioration of morals or values.
- Physical changes: Deterioration in health and/or physical appearance. Appetite swings, either a loss or an increase. Bloodshot eyes, hyperactivity, frequent "colds" or nosebleeds.
- Personality changes: The child doesn't seem to like himself. Mood swings. Violent or destructive behavior. Severe depression. Threats of

suicide or actual attempts. Running away from home or threats to run away.

- Loss of interest in school: Grades start to drop. Missing school.
- Secretive behavior: The door to his room is locked, Very private phone calls, and Chronic tardiness (late for school, dates, activities).
- Avoidance of others; Avoiding family functions, neighbors, or old friends. Hanging out with older children. Verbal and/or physical abuse of parents or siblings. Changes in friends or hangouts.
- Money problems; Money disappearing from the house. Vague money needs. Sudden expenses. The child has money but you don't know where it is coming from.
- Chronic lying: Frequent alibis, excuses, and justifications (Teachers don't like me. Everybody is picking on me. You don't understand me). Inability to keep promises. Excuses, such as: Everyone smokes (or drinks). Why should you care? It's not hurting you.
- Trouble with police: Police involvement of any kind. Driving-under-the-influence citations. Automobile or motorcycle accidents.

Recent surveys by national organizations of various countries related to drug abuse and alcoholism shows:

1. The average age of first drug use is 13. The average age of first alcohol use is 12.
2. Over 50% of high-school seniors have tried drugs. Over 33% have tried a drug other than marijuana.
3. Nearly 33% of all high-school seniors claim that most of their friends get drunk at least once a week.
4. Nearly one in 16 has tried cocaine or its powerful, addictive derivative, crack.
5. High-school senior girls ingest more stimulants and tranquilizers than boys. Girls almost match the boys' use of alcohol, marijuana, and other drugs.
6. Approximately 33% of fourth-graders reported peer pressure to try alcohol and marijuana.

Elementary school-aged initiators of cigarette smoking are least likely to attempt to quit or to succeed in quit attempts, and are most likely to smoke as adults. Similarly, the earlier children begin alcohol use, the greater their risk of alcohol misuse during adolescence. According to Kandel's 20 years cohort study of stages of drug use, early use of tobacco and alcohol is the strongest predictor of progression to the use of marijuana and other illicit drugs. Indeed, Kandel et al. conclude that early intervention to delay the onset

of tobacco and alcohol use should constitute our principal approach to drug-use prevention.

Studies showed that alcohol use, in general, starts in childhood and consolidates in adolescence. The results of study conducted by Meire Soldera (2004) showed that the mean age of the first alcohol experimentation was very early (12 years of age). What is worrying is the fact that the earlier start of contact with alcohol the higher the probability of developing dependence on this drug. Regarding the different studied schools (private and central and peripheral public schools), it was identified that, central public schools have patterns more similar to private than to peripheral public schools. Heavy alcohol use was verified among 14.8% and 12.3% of the students in central public and private schools respectively, as to peripheral public schools, it was noted lower heavy alcohol use (8.6%). These results do indicate that students of peripheral schools, for having less money, consume less alcohol.

HIV/AIDS Related Knowledge

The spread of HIV/AIDS depends on, and exposes, almost every weakness in the society. It spreads if there is poverty, illiteracy, lack of public health, if women do not have reproductive rights, if the use of alcohol and narcotics is high and widespread, and if corruption becomes part of daily life. The last, corruption, also precludes the possibility of adequate response by the

government or the bureaucracy. It is for these reasons that HIV/AIDS is not simply a medical disease but also a social one.

India has a very large migrant work force, both industrial and agricultural, estimated at over 20 crores, and increasing in numbers due to the growing population. Furthermore, every natural disaster (cyclone in Orissa, drought in Rajasthan, earthquake in Bhuj) displaces people and adds to the ranks of the migrants. A majority of those on the move are men who work under harsh conditions to save as much as possible for their families. Their life styles and conditions expose them to alcohol and drug addiction and to risky sex. They return home sporadically, often carrying diseases to their spouses. This migrant labour force is very often served by a community of sex workers, that is itself migrant and indistinguishable; many cities do not have well-defined "red-light" areas which serve as focal points for sex work. Reaching these sex workers is, therefore hard hence, their education and empowerment remains at the same level as that of the work force at large.

India is sandwiched between the two major heroin-producing areas of the world - the golden triangle (Myanmar, Laos, Thailand) and the golden crescent (Afghanistan and Pakistan) - which account for roughly 95 percent of the world's heroin production. India itself produces significant quantities of opium, hashish, and ganja. Historically, the use of these narcotics has been a part of the life of rural Indians, blue-collared workers, and urban slum

dwellers. They have used it as part of evening entertainment, relaxation, and community activities. What is different today is the amount, variety, and toxicity of drugs available. For example, opium use is a widespread and huge problem in the districts of Punjab bordering Pakistan and in Rajasthan west of Jodhpur. The concentration of narcotics in chewing tobacco and "gutka" is growing along with the increase in the number of people using them throughout the day.

Intravenous use of heroin has already resulted in an HIV crisis in Mizoram, Manipur, and Nagaland. There is growing incidence of IV heroin use (and of other opiates, tranquilizers, and sedatives that are easily available from many pharmacists) among school and college students in all major cities and, widespread in Punjab, Haryana, and Rajasthan. This growing threat of drugs is, in itself, a nightmare for the nation and needs a major intervention programme, when coupled with HIV it will be devastating as demonstrated by the experience in Mizoram, Manipur, and Nagaland. The authorities are aware of the severity of the problem in the border states, however, lack of political will and corruption has, and is, preventing adequate response to the widespread drug problem.

In the affluent classes, evening entertainment is synonymous with hours of intensive drinking. The quality and quantity of single malt scotch consumed has become a status symbol. It should, therefore, come as no

surprise that younger and younger children are imitating their parents and elders, and for them risky behaviour includes alcohol, drug and sex (A very high correlation has been observed between these three risky behaviours). These children are often left without responsible supervision and with ample funds for days at end and while the parents are on business trips. Sexual experimentation, with HIV ever waiting, is proving deadly for many. Alcohol use among the poor has reached nightmarish proportions; the government, mindful only of the welcome increase in taxes collected, is seemingly oblivious of the eventual cost to the society and the nation.

The increasing reliance on television, alcohol and gambling as the most common outlets for stress and tensions, and as the predominant form of entertainment is a devastating social behaviour with far reaching consequences. For example, it has become an underlying cause of risky sexual behaviour. To counter this "way of life" requires the development of alternate forms of entertainment, and the awareness on why the constructive use of leisure time is a necessary life-long habit (life-skill), which needs to be developed early in life. (Possible activities include voluntary community improvement programs, spending more time with children, reading, sports and other outdoor activities). Facilitating such a change in lifestyle is a Herculean task considering the fact that a significant fraction of the society of 1 billion has already become addicted to television and alcohol. The problem

of drug addiction, however, will only become worse if people do not develop such life-skills.

It has become amply clear that in India's middle and upper classes, the onset of sexual experimentation and development of risky sexual behaviour is occurring in mid-to-late teens. The most vulnerable time being the transition from school to college, especially among boys and girls from rural backgrounds going to colleges in cities. Consequently, awareness and intervention programs have to begin in schools and before risky behaviours become addictive habits. Schools are very open to providing awareness, but are relying on external speakers since their staffs are reluctant and/or unprepared to speak on relevant issues of sexuality and sex. Thus, the exposure is sporadic, hurried, and inadequate; only a fraction of the senior classes attend a given session and the information is expected to trickle down to the rest, or they must wait for the next speaker who may come months or years later. This is true even in the very elite schools of India which have English as the medium of instruction; a language that possesses a clinical vocabulary on sex. In most Indian languages, the lack of such a vocabulary has attached a perception of vulgarity to discussions of sexuality, reproductive health, methods of birth control, and sexually transmitted diseases. As a result, most students still do not get adequate information from reliable sources - parents, trained teachers or counsellors.

On the treatment front there is very good news. The year 2001 has already provided the world with two miraculous gifts, whose resonant application can start to make a difference immediately. First, is the growing widespread acceptance of the Brazilian experiment - providing Highly Aggressive Anti-Retroviral Therapy (HAART) to all HIV/AIDS patients. This has resulted, in Brazil, in holding down the rate of new infections at the 1995 level, and given a life to those infected.

The above two breakthroughs, while being landmarks and essential in the fight against the spread of HIV/AIDS, are, by themselves, not enough. For example, most of the estimated 40 lakhs Indians infected with HIV are not aware of their status. In fact, only a few percent are. So, in view of a long-term solution, having HAART available is not very helpful, unless we have the capacity to prevent infections or, if they happen, to intervene very early. Given the non-specific symptoms of HIV infection in early stages, which may last years, there is no motivation for the masses to seek the specific blood test unless the awareness levels are very high. Today, most HIV infections are being detected at very late stages when serious opportunistic infections force the poor and the marginalized to seek medical help. Diagnosis late in the progression of the disease has two disastrous consequences. First, the continued risky behaviours during the time of the undetected infection put others at risk, and second, since HAART does not undo the damage to the body and the immune system already caused by the virus (HAART

significantly reduces further degeneration by reducing the viral load to negligible amounts and hence the transmission rate), late detection means living with a highly compromised system even if HAART was made available.

Today, there is much debate whether India has the infrastructure in place to administer HAART. Today, the majority of doctors are decoupled and disengaged from the HIV/AIDS crises because they feel powerless, as there is nothing they can do to help the infected. Making drugs available to them to administer will lead to their becoming engaged, learning about the disease, and thus providing the infrastructure that is arguably missing today. It will also go a long way in removing the stigma associated with the disease, give a life to those infected, and allow many of the HIV+ to become peer educators.

As India gears up implementation of national plans to fight HIV, infectious diseases experts are pointing out serious gaps in public knowledge about the disease and identifying early problems in private clinics, where 70 percent of HIV-infected Indians receive their everyday medical care. India recently surpassed South Africa as having the largest number of people infected with HIV, at 5.7 million and 5.2 million, respectively. Only one-third of 1,667 HIV-infected men and women surveyed in Mumbai and three other Indian cities had ever heard of antiretroviral therapy, let alone understood

what it was. Indeed, 19 percent of those surveyed, all of whom were patients in a mix of six public and private clinics known for treating people infected with HIV, thought that antiretroviral were an actual cure for HIV disease instead of long-term therapy.

Results came from one of two surveys led by Hopkins researchers, where knowledge-based interviews were conducted among patients from February to June 2004. Patients came from all socioeconomic classes and ranged in age from 28 to 39. Other findings were that 57 percent of those interviewed also had not heard of a CD4 T-cell, the body's key immune cell that fights HIV, and only one-third had ever had a CD4 T-cell count taken. Moreover, only 20 percent of those surveyed knew about viral load testing, a key measurement used to monitor disease progression, and only 11 percent had ever undergone the test.

Though only 20 percent were found to be taking antiretroviral, researchers say, those being cared for in private clinics were four times more likely to be on the medications than those seeking treatment in public hospitals. Other key predictors for using antiretroviral included age (1.6 times more likely for every decade older), or some knowledge of drugs (2.8 times more likely), and having had a CD4 T-cell count taken (3.7 times more likely). However, the survey also showed that cost was a key disincentive for one-third of those not yet taking the medications.

Mumbai, formerly Bombay, is considered the epicenter of India's AIDS epidemic. It is the nation's economic hub and home to its largest concentration of citizens infected with HIV. Interview results from the second survey, which focused specifically on how well or not 279 infected men and women took their medications as prescribed, revealed that 73 percent of patients stuck closely to their drug regimens. However, for those who missed taking some, reasons cited included running out of pills, traveling, forgetting, or that the pills cost too much. An additional burden, they found, was that 25 percent of those on antiretroviral drugs were also being treated for active tuberculosis.

Average spending on antiretroviral was 30 percent to 50 percent of disposable income for survey respondents, all at three private clinics in Mumbai, with 39 percent citing cost of drugs as a strain on their household budget. The median cost was Rs.2160/- per month per patient, but some received their medications for free while others paid more than Rs.96000/- per month for the very latest drugs. Sixty-three percent of those on therapy managed to suppress viral levels to less than 400 copies per cubic milliliter of blood. Yet, 19 percent were found to be using only two antiretroviral therapies, when the typical combination therapy consists of at least three drugs. This, researchers warn, could lead to the buildup of drug resistance within the local population.

In public clinics in heavily infected regions, researchers say the financial burden is much less, because the government at no cost provides antiretroviral therapy. However, they note, India's national plan provides free antiretroviral only to patients in some selected public clinics, not to the vast majority being cared for privately.

According to study lead researcher, Amita Gupta, M.D., government programs to combat HIV infection will have to focus on care in private clinics as much as, if not more than, they do in public clinics because most Indians are going to the fee-for-service clinics. Gupta, an assistant professor at The Johns Hopkins University School of Medicine and deputy director of its Center for Clinical, Global Health Education, adds that solving the problems of HIV infection in India must also involve awareness-raising initiatives to educate the public about the disease, and programs to develop the skills of physicians and other local health care providers on how best to inform patients about their illness, encourage testing, promote adherence, and minimize the development of drug resistance as the epidemic spreads (David, 2006).

Attitude towards Physical Activity

An active lifestyle during childhood directly benefits the health both during adulthood and at old age. However, due to the modern way of living and technological developments (e.g. cars, elevators, computers and

television), both children and adults have become less physically active. In certain cultures, inactivity and the resultant obesity and diseases have reached 'crisis proportions'. New research shows that Indians are genetically more likely to get heart attacks than any other ethnic group in the world. One out of four Indian-Americans had high levels of Lipoprotein (a) as compared to the Japanese, Chinese, Caucasians and Hispanics. (Enas EA, 98). However, genes alone do not explain the sudden spurt in heart disease among the youth. The answer, in a word, is lifestyle. "Genetics load the gun, lifestyle pulls the trigger" is how Enas describes. (Dr Enas K. Enas, Director, CADI). WHO predicts that, India will have 10 crore or 60 percent of the world's heart patients by 2010 (India Today, June 11, 2001). It shows that the declining level of exercise has the potential to increase the burden of chronic diseases in our population, directly as an independent risk factor and indirectly through increased obesity. Lifestyle choices have never been more important in determining the outcome of a national problem.

Moreover, the school curriculum should not overemphasize sports and other activities that selectively eliminate children who are less skilled. Besides, the benefits of exercise, the development and maintenance of a healthy lifestyle and a positive attitude towards exercise conditioning throughout life should be promoted in schools. But, unfortunately we do not have a structured Physical Education programme. In most of the schools, majority of the students are not exposed to any type of physical education

programmes. Always, the school authorities do make the selection and impart training only to a few gifted students. The school authorities cannot be blamed for such an attitude, because paucity of work force, infrastructure facilities, lack of proper motivational techniques and failure to make awareness among the parents are some reasons that contribute to such a phenomenon.

Apart from a healthy diet and not smoking, appropriate regular daily physical activity is another major component in preventing chronic disease. For individuals, physical activity is a powerful means of preventing chronic diseases and for nations, it can provide a cost-effective way of improving public health across the population. Regular physical activity will also help to build greater peak bone mass, thereby reducing adult risk for osteoporosis (Vogel, P. G., 1986). Involvement in physical activity, exercise and sport promotes psychological well-being, the therapeutic use of physical activity and exercise for improving the mental health of adolescents goes beyond both traditional treatment and mental health programmes. Available experience and scientific evidence show that regular physical activity provides people, both male and female, of all ages and conditions - including disabilities - with a wide range of physical, social and mental health benefits. Physical activity interacts positively with strategies to improve diet, discourage the use of tobacco, alcohol and drugs, helps reduce violence, enhances functional capacity and promotes social interaction and integration.

One of the major benefits of physical activity is that it helps people to improve their physical fitness. Fitness is a state of well-being that allows people to perform daily activities with vigour, thereby reducing their risks for health problems. Five basic components of fitness that found to be important for good health are cardio respiratory endurance, muscular strength, muscular endurance, flexibility, and body composition (percentage of body fat). The essential characteristic of health-related physical fitness is that exercise has a positive influence on these components, and that an adequate level of development in the above said components is necessary for positive health.

Facts

- Appropriate regular physical activity is a major component in preventing the growing global burden of chronic diseases.
- At least 60% of the global population fails to achieve the minimum recommendation of 30 minutes per day moderate intensity physical activity.
- The risk of getting a cardiovascular disease increases by 1.5 times in people who do not follow minimum physical activity recommendations.
- Inactivity greatly contributes to medical costs - by an estimated \$75 billion in US in 2000 alone.

- Increasing physical activity is a societal, not just an individual problem, and demands a population-based, multi-sector, multi-disciplinary, and culturally relevant approach.

Extent of the problem

Physical inactivity is estimated to cause 2 million deaths worldwide annually. Globally, it is estimated to cause about 10-16% of cases each of breast cancer, colon cancers, and diabetes, and about 22% of ischemic heart disease. Estimated attributable fractions are similar in men and women. Opportunities for people to be physically active exist in the four major domains of their day.

These are:

- At work (whether or not the work involves manual labour)
- For transport (walking or cycling to work, to shop etc)
- During domestic duties (housework, gathering fuel etc)
- In leisure time (sports and recreational activities)

The global estimate for the prevalence of physical inactivity among adults is 17%. Estimates for prevalence of some, but insufficient, activity (<2.5 hours per week of moderate activity) ranged from 31% to 51%, with a global average of 41% across the sub-regions. World Health Review 2002 used a number of direct and indirect data sources and a range of survey instruments

and methodologies to estimate activity levels in these four domains. Most of the data was available for leisure time activity, with less direct data available on occupational activity, and little direct data available for activity related to transport and domestic tasks. In addition, the World Health Review 2002 data only estimates the prevalence of physical inactivity among people aged 15 years and over, which suggests that the total figures could be higher. Physical activity declines with age, falling off from adolescence, as physical activity and physical education is declining in schools worldwide. Inactivity is generally higher amongst girls and women.

Why is regular physical activity necessary?

Physical inactivity, along with other key risk factors, is a significant contributor to the global burden of chronic diseases. Regular physical activity reduces the risk of heart disease, stroke, breast and colon cancers. These benefits are mediated through a number of mechanisms. In general, physical activity improves glucose metabolism, reduces body fat and lowers blood pressure; these are the main ways in which it is thought to reduce the risk of CVD and diabetes. It can also help manage and mitigate the effects of these diseases. Physical activity may also reduce the risk of colon cancer by its effects on prostaglandins, reduced intestinal transit time, and higher antioxidant levels.

Physical activity is associated with low risk of breast cancer, which may be the result of effects on hormonal metabolism. Participation in physical activity can also improve musculoskeletal health, control body weight, and reduce symptoms of depression. The possible beneficial effects on musculoskeletal conditions such as lower back pain, osteoporosis and falls, as well as on obesity, depression, anxiety and stress, have been well reported in a number of studies.

Physical activity also has economic benefits, especially in terms of reduced health care costs, increased productivity, and healthier physical and social environments. Data from developed countries indicate that the direct costs of inactivity are enormous. The costs associated with inactivity and obesity accounted for some 9.4% of the national USA health expenditure in 1995. Physically active individuals in the USA save an estimated \$500 per year in health care costs according to 1998 data. Inactivity alone may have contributed as much as \$75 billion to US medical costs in the year 2000. In Canada, physical inactivity accounts for about 6% of total health care costs. No much data is available about the cost of inactivity in India.

Progress must be a product of all efforts and use of resources must result in productive findings. Keeping the above factors in mind the research scholar felt a need to undertake a research project with purpose to understand

the status of priority health-risk behaviour, which contribute to the leading causes of morbidity and mortality among adolescents in Kerala.

STATEMENT OF THE PROBLEM

The purpose of the study is to assess the health-risk behaviours and attitude towards physical activities among higher secondary school students in Kerala state.

The topics include height, weight, dietary behaviour, over weight, hygiene, violence, mental health, prevalence of tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity which are the priority health-risk behaviours and often established during youth thus extending into adulthood and that contribute to the leading causes of mortality, morbidity, and social problems among youth and adults

DELIMITATIONS

The study was delimited to the following:

1. A sample size of 5067 students studying in higher secondary schools in Kerala State (2546 boys and 2521 girls).
2. Schools following the State Higher Secondary, CBSE, ISE and VHSE syllabus of education.
3. Selected questionnaire in assessing the gender differences, dietary behaviour, over weight, hygiene, violence, mental health, tobacco use,

alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity.

LIMITATIONS

The following are considered as limitations of this study:

1. All data are self-reported except height and weight, and the extent of underreporting of behaviours cannot be determined.
2. Survey data apply only to youth who attend school and, therefore, are not representative of all persons in this age group.
3. Questionnaire research has its limitations, any bias that may have entered into the subject on this account may be considered as a limitation to this study.
4. Owing to the social sanctions and cultural differences, many questions coming under the survey of health-risk behaviours may not provide correct responses.
5. Life style of the subjects was beyond the control of researcher.
6. Environmental factors, socio-economic and religious factors, which cannot be controlled by the scholar, might have affected the responses of the students.
7. Finally, survey only address behaviours that contribute to the leading causes of morbidity and mortality among youth and adults.

DEFINITION AND EXPLANATION OF TERMS

Health – Risk Behaviour

Health-risk behaviours, which contribute to the leading causes of morbidity and mortality among youth and adults, often are established during youth and extend into adulthood, are interrelated, and are preventable. Six categories of priority health-risk behaviours among youth and young adults — behaviours that contribute to unintentional injuries and violence; tobacco use; alcohol and other drug use; sexual behaviours that contribute to human immunodeficiency virus (HIV) infection; unhealthy dietary behaviours; and physical inactivity — plus overweight (Jo Anne Grunbaum et al, 2004).

Attitude

It is a complex mental state involving beliefs, feelings, values, and dispositions to act in certain ways.

A positive attitude toward exercise may be the primary determinant of a physically active lifestyle (Terry, 1996). Allport (1947) introduced the classic definition of attitude as a "mental and neural state of readiness, organized through experiences, exerting a direct or dynamic influence upon the individual's response to all objects and situations with which it is related". Attitudes are directed towards attitude objects, such as classes of people,

objects, or ideas. Thus if a person has a positive attitude toward physical fitness, his/her behaviour should reflect this attitude (Gill, 1986).

Physical Activity

Physical activity is an important part of both a healthy lifestyle and a child's daily routine says Sallis (1993). Development of good health and fitness habits in childhood is associated with physical fitness as an adult (Harsha, 1995). Participation in physical activity is an important part of a child's normal psychosocial development and self-image.

Height

Height is the measurement of distance between a specified point and a corresponding plane of reference. If the distance is occupied by a contiguous form of matter, the measurement is colloquially known as how "tall" the form is. Human height is one of the areas of study within anthropometry. The average height of human populations appears to be a convenient metric for all the factors that make up a group's well-being. While height variations within a population are largely genetic, height variations between populations are mostly environmental. The United Nations uses height (among other statistics) to monitor nutritional standards in developing nations. In human populations, average height can distill down complex data about the group's birth, upbringing, social class, diet, and health care system. However, the

height of a human is not always directly connected or related to such things as nutrition, social class, etc. (<http://en.wikipedia.org/wiki/Height>).

Weight

Weight, in the context of human body weight measurement in medical sciences and in sports is a measurement of mass, and is thus expressed in units of mass, such as kilograms (kg), or units of force such as pounds (lb). In Britain and Ireland, the unit stone (equivalent to 14 lb or 6.35 kg) is commonly used as well. A quantity called body mass index (BMI) is often used to express weight relative to height. This is determined by dividing the weight of a person in kilograms by the square of the height in meters. (http://en.wikipedia.org/wiki/Human_weight)

SIGNIFICANCE OF THE STUDY

The proposed study will help to understand present status of both gender in physical activity patterns, dietary practices and health risk behaviour among Higher Secondary School Students of Kerala State. This knowledge will definitely help the administrators and policy makers to formulate suitable programmes to motivate and develop lifetime activity behaviour among students. The knowledge about the gender differences in physical activity patterns, dietary practices and health risk behaviour among Higher Secondary School Students will help the teachers, parents and counsellors to better understand the way of thinking of the future generation.

The questionnaire thus developed for this study will provide an excellent tool for educationists, social and health workers. It will help to gather data regarding health-risk behaviours among Higher Secondary school children. This tool can also be used nationwide by health and education officials to improve and modify national, state and local policies and to design programmes to reduce risks associated with leading causes of mortality and morbidity.

The information thus gathered about different health-risk behaviour patterns, intentional injury, use of tobacco and use of alcohol and drugs, unhealthy dietary habits and physical activity can be used to improve state, and local policies and programmes to reduce risks associated with the leading causes of mortality and morbidity.

The data obtained regarding physical inactivity and attitude towards physical activity will help to know the status on important issues regarding Physical Education programmes in schools. Besides, the data can also be used for better co-ordination of policies concerning Physical Education, sports, health, recreation and Health Education.

The results will alert besides Physical Education teachers, the children themselves, parents, schools, sports clubs, etc; about their several and mutual responsibilities in maintaining a reasonable standard of physical fitness among those committed to their change.

Chapter Two

REVIEW OF RELATED LITERATURE

A careful study and exploration of the selected literature for present study is essential to have an insight into the work already done. In India, very little research has been done as compared to other countries in this area. The scholar has given a deep thinking to those studies and has gained valuable methodological hints from their procedure and findings that were of great importance in the formulation of this study. A brief review of related studies on health-risk behaviours are presented in this chapter.

Danice K et al (2005) conducted a survey on the Youth Risk Behaviour Surveillance System (YRBSS) which monitors six categories of priority health-risk behaviours among youth and young adults, including behaviours that contribute to unintentional injuries and violence, tobacco use, alcohol and other drug use, sexual behaviours that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infections, unhealthy dietary behaviours, and physical inactivity. In addition, the YRBSS monitors general health status and the prevalence of overweight and asthma. YRBSS includes a national school-based survey conducted by CDC and state and local school-based surveys conducted by state and local education and health agencies. This report summarizes the results from the national survey, 40 state surveys, and 21 local surveys conducted among students in grades 9–12 during October 2004–January 2006. The results do indicate that: In the United States, 71% of all deaths among persons aged 10–24 years result from four causes: motor vehicle

crashes, other unintentional injuries, homicide, and suicide. Results from the 2005 National Youth Risk Behaviour Survey (YRBS) indicated that, during the 30 days preceding the survey, many high school students engaged in behaviours that increased their likelihood of death from these four causes: 9.9% had driven a car or other vehicle when they had been drinking alcohol; 18.5% had carried a weapon; 43.3% had drunk alcohol; and 20.2% had used marijuana. In addition, during the 12 months preceding the survey, 35.9% of high school students had been in a physical fight and 8.4% had attempted suicide. Substantial morbidity and social problems among youth also result from unintended pregnancies and STDs, including HIV infection. During 2005, a total of 46.8% of high school students had ever had sexual intercourse; 37.2% of sexually active high school students had not used a condom at last sexual intercourse; and 2.1% had ever injected an illegal drug. Among adults aged less than 25 years, 61% of all deaths result from two causes: cardiovascular disease and cancer. A result from the 2005 National YRBS indicates that risk behaviours associated with these two causes of death were initiated during adolescence. During 2005, a total of 23.0% of high school students had smoked cigarettes during the 30 days preceding the survey; 79.9% had not eaten less than 5 times/day of fruits and vegetables during the 7 days preceding the survey; 67.0% did not attend physical education classes daily; and 13.1% were overweight. Interpretation: Since 1991, the prevalence of many health-risk behaviours among high school

students nation- wide has decreased. However, many high school students continue to engage in behaviours that place them at risk for the leading causes of mortality and morbidity. The prevalence of many health-risk behaviours varies across cities and states. Public Health Action: YRBS data are used to measure progress toward achieving 15 national health objectives for Healthy People 2010 and three of the 10 leading health indicators, to assess trends in priority health-risk behaviours among high school students, and to evaluate the impact of broad school and community interventions at the national, state, and local levels.

G. Sikazwe et al (2004) conducted the Zambia Global School Health Survey (GSHS) in 2004 for collecting accurate data on health behaviours and protective factors among school going children grade 7 to 10. The survey was done in all the nine provinces of Zambia. A sample size of 50 schools was selected out of which 47(94%) schools participated. The 2004 Zambia GSHS employed a two-stage cluster sample design to produce a representative sample of students in grades 7, 8, 9 and 10. The first-stage sampling frame consisted of all schools containing any of the above grades. Schools were selected with probability proportional to school enrolment size. The second stage of sampling consisted of randomly selecting classes (using a random start) from each participating school. All classes in each selected school were included in the sampling frame. All students were eligible to participate in the GSHS. During the 2004 Zambia GSHS, 3,021 students were eligible but

only 2,257 students participated (75%) giving an overall response rate of 70%. The weighted demographic characteristics of the sample are as follows: Grade 7 - 56.0%, Grade 8 - 20.9%, Grade 9 - 21.1%, and Grade 10- 2.0%. The Zambia GSHS questionnaire addressed the following topics; Age and Sex, Weight, Height and going hungry, Dietary behaviours, Personal hygiene, Water, Physical violence, Injuries, Bullying, Personal safety, Feelings and friendship, Alcohol abuse, Drug abuse, Sexual behaviours and HIV/AIDS, Physical activity, Leisure time, experiences at school.

The survey revealed that nutritional deficiencies because of food insecurity (protein-energy malnutrition, iron, Vitamin A, and iodine deficiency) affect school participation and learning. A total of 28.7% of students, 26.7% male and 30.6% female went hungry most of the time or always during the past 30 days because there was not enough food at home. The grade 7 students [29.8%, CI (26.5-33.1)] were significantly more likely to go hungry than grade 9 students [21.9%, CI (17.8-26.0)] and among the grade 8 students, males [24.6%, CI (21.6-27.6)] were significantly less likely to go hungry than females [35.6%, CI (30.3-40.8)]. In developing countries, many children do not have access to clean water and thus, are susceptible to diseases such as diarrhoea, dysentery, cholera etc. According to the survey, 12.5% of the students with 13.7% males and 10.7 % females never or rarely washed their hands before eating during the past 30 days. While 23.8% (23.7% being males and 23.6% being females) reported to have no place to

wash their hands before eating at school. This poses a great challenge to both the Ministries of Health and Education in addressing these issues. In Zambia like indeed other countries alcohol and other drug abuse has resulted in both uncalled for injury, death, loss of property as well as violence and engagement into myriad risky behaviours. This may include use of tobacco, unprotected sex etc. The overall percentage of lifetime drug use (using drugs, such as daga, ibange, or ichamba, one or more times during their life) is 36.7%. Besides, the survey revealed that the prevalence of alcohol use among students (i.e. drinking at least one drink containing alcohol on one or more of the past 30 days) is 42.6%. In all the variables, the survey revealed that grade seven (7) pupils were more vulnerable than other grades and were the most indulgent.

Marina (2004) conducted Global School Health Survey, a school-based survey primarily among students aged 13 to 15 years of age in Philippines. It measures behaviour and protective factors related to the leading causes of mortality and morbidity among youth and adults in the Philippines: Alcohol and other drug use, dietary behaviours, hygiene, mental health, physical activity, protective factors, HIV-related knowledge and skills, tobacco use, violence and unintentional injury. Locally, the University of the Philippines' Population Institute had conducted a nationwide study on youth risk behaviour in 1994 and 2002. The Young Adult Fertility and Sexuality Study (YSFS) took special interest in the risk or problem

behaviours that young people engage in. Likewise, the Global Youth Tobacco Survey was conducted in the country in 2000 and in 2003, which investigated on tobacco use and its determinants (WHO-CDC). A Baseline Behavioural Risk Factor Survey by the Department of Health and the University of the Philippines, Manila was initiated in 2000 to establish baseline data of risk behaviours for non-communicable diseases in the country. The survey covered Filipinos 15 years old and over, and investigated among others, tobacco and alcohol use, dietary behaviour, physical activity, etc.

The Department of Health has an Adolescent and Youth Health Development programme. The programme focus on addressing the following health concerns: Growth and Development concerns, Nutrition, Physical, mental and emotional status; Reproductive Health, Sexuality, Reproductive Tract Infection (STD, HIV/AIDS), Responsible Parenthood, Maternal and Child Health, Communicable Diseases, Mental Health, Substance use and abuse, Intentional/ non-intentional injuries and Disability. The 2003 Philippines' GSHS employed a two-stage cluster sample design to produce a representative sample of students in 2nd to 4th year levels of Secondary Education or High School. The first-stage sampling frame consisted of all schools containing any of 2nd to 4th year levels. Schools were selected with probability proportional to school enrolment size. One hundred and fifty schools (150) were selected to participate in the Philippines' GSHS. The second stage of sampling consisted of randomly selecting intact classrooms

(using a random start) from each school to participate. All classrooms in each selected school were included in the sampling frame. All students in the sampled classrooms were eligible to participate in the GSHS. The questionnaire contained 92 multiple-choice questions. Approximately, 30 Survey Administrators were specially trained to conduct the GSHS nationwide.

Nationwide, over half of the respondents were females (56.8%) and 43.2% were males. Forty-four per cent were attending 2 year, 32.0% were in 3 year, and 27.0% were in 4th year High School and only about 0.8% were freshers. The median age is 14 years old. The mean age is 15 years old with a range of 12-18 years. Nationwide, one in five (18.9%) students admitted, they had their first drink of alcohol other than a few sips when they were 13 years old or younger. The boys (24.8%) were significantly more likely than girls (14.3%) to have had their first drink of alcohol other than a few sips at this young age. Overall, about 5.9% of the students were 13 years old or younger when for the first time they drank so much alcohol that they were drunk. The boys (8.7%) were significantly more likely than the girls (3.9%), to have drunk so much alcohol that they were really drunk likewise the 2nd year students (7.7%) were more likely than the 4th year students (4.3%). Nationwide, two in five (40.0%) students have seen a lot of advertisements or promotions for alcohol in newspapers or magazines during the past 30 days preceding the survey. There were no significant differences by sex. Overall,

about 6.3% of students have used marijuana one or more times during their life. The boys (11.6%) were significantly more likely than girls (2.4%) to have used marijuana one or more times during their life; and the 4th year students (9.4%) were more likely than the 2nd year students (4.3%) to have ever used marijuana. Nationwide, almost seven out of ten students usually ate fruit (67%), such as banana, mango, or papaya, one or more times per day during the past 30 days preceding the survey. The girls (69.4%) were significantly more likely than boys (62.9%) to have eaten such. The 2nd year students (71.7%) were more likely than the 4th year students (62.2%) to eat fruit one or more times per day. Overall, only 1.2% of students did not clean or brush their teeth during the past 30 days preceding the survey.

Only 4.3% of students have never or rarely washed their hands before eating during the past 30 days preceding the survey. At the same time only 4.0% of students have never or rarely washed their hands after using the toilet or latrine during the past 30 days preceding the survey. Nationwide, only one out of ten (10.5%) students felt lonely most of the time or always during the past 12 months preceding the survey. There were no significant differences in this kind of feelings by sex, and by year in school. About one in ten (14.6%) students, most of the time or always, felt so worried about something that they could not sleep at night during the past 12 months. Nationwide, only 7.6% of students were physically active all seven days during the past 7 days for a total of at least 60 minutes per day. The 4th year students (10.4%) were

significantly more likely than the second year students to be physically active all seven days for at least 60 minutes. Almost one-third of students (31.2%) missed classes or school without permission on one or more of the past 30 days preceding the survey.

About one-third of students (30.2%) have reported that most of the students in their school were kind and helpful most of the time or always during the past 30 days preceding the survey. Overall, 95.3% of students had ever heard of HIV or disease called AIDS (Table). The 4th year students (97.2%) were more likely than the 2nd year students (93.9%) to have ever heard of HIV or a disease called AIDS. Overall, 14.6% of high school students currently smoke cigarettes and the boys (23.5%) were significantly more likely than girls (8.2%) to be current smokers.

Nationwide, one in ten (10.8%) students who currently smoke cigarettes admitted to have tried their first cigarette at age 9 or younger. The 2nd year students who currently smoke (16.2%) were significantly more likely than the 4th year students (5.9%) to have tried their first cigarette at age 9 or younger. Nationwide, half (50.1%) of students were involved in a physical fight one or more times during the past 12 months preceding the survey. The 2nd year students (56.0%) were significantly more likely than the 3rd year (47.5%) and the 4th year students (43.5%) to have been involved in

a physical fight one or more times during the past 12 months preceding the survey.

The Global School-based Student Health Survey in the Philippines, a component of the Global School-based Student Health Surveillance System, is the first survey conducted among youth in schools nationwide and was intended to provide baseline data on levels of risky behaviours and eventually to assess trends in the coming years. The results should be adopted to set health education and health promotion goals, support curricula or program modifications, support legislation that promotes health. The Adolescent and Youth Health Program of the Department of Health and the School-Health Program of the Department of Education should consider significant results, hence, be guided in modifying strategies towards effective program interventions, reducing morbidity, mortality from chronic diseases even among youth and when they become adults sooner or later. This GSHS Surveillance System should be maintained and be sustained to help monitor and ensure the effectiveness of those and other public health and school health programs for youth.

Thankachi Yamini Ramachandran (2004) conducted a study to estimate the prevalence of overweight and obesity among school and college going adolescents of 13-19 years of age in rural and urban Thiruvananthapuram district of Kerala, India. This cross-sectional study was

done in the urban population of one Corporation (Thiruvananthapuram) and 4 Municipalities (Neyyattinkara, Attingal, Nedumancaud, Varkala) and the rural population of the panchayats in the Thiruvananthapuram district of Kerala, which has high enrolment ratio and literacy rate. Besides, the district has a large number of schools and colleges with a good mix of students from all levels in the society. The study was conducted among students between the age group of 13-19 yrs (studying in classes 8-9, 11 classes, degree 1st and 2nd year); 10 and 12 classes were excluded as the students were studying for their final examinations. The sample included 232 rural schools (18 boys only, 15 girls' only & 199 both boys & girls), 90 urban schools (11 boys, 19 girls, and 60 both), 9 rural colleges (all coeducational) and 17 urban colleges (3 girls' only & 14 both). Given this, the stratified frame had the possibility of 12 strata and one school each was selected from each stratum randomly. Data was collected using a pre-tested self-administered questionnaire distributed in the classroom after telling them what the study is about and taking the verbal consent of the students. Anyone not interested was allowed to keep away. Each question was explained while the students filled them up with clarification of doubts. Simultaneously, height and weight were measured. The entire process took about 1 - 1.5 hrs. Pamphlets on adolescent health, BMI and graphs by which the children can know their BMI were distributed. Calculation of BMI and steps to undertake for a healthy and fit body were also explained to them.

The sample consisted of 1,055 adolescent (13-19 yrs) students from 6 schools and 6 colleges of Thiruvananthapuram district. Mean age of the sample students was 15.6 yrs (15.5 yrs for boys and 15.7 yrs for girls). About two-third of the students belonged to the forward community while the rest belonged to backward class (25.7%), scheduled caste (11.1%), and scheduled tribe (1.7%). Fathers of 60.8% of students had secondary education (10th standard) and 36.7% had pre-degree/graduate/postgraduate/above; the rest (2.5%) did not know the status. One-third were casual labours, 12.3% were in business, 45.5% were salaried, and 5.2% were retired, temple priest etc. More than half (55.5%) of the students did not know the household income, while 13.6% reported a monthly income of greater than Rs. 1,000/- and 1.8% reported an income higher than of Rs. 15,000/-. Majority (77.1%) had good house while 19% had average and 4% had poor houses. Half of them studied in government, 39.4% private aided and 10.5% private unaided schools/colleges.

Prevalence of overweight/obesity was 5.4% (mean BMI = 19.1, SD = 3.2) 5.2% among boys (mean BMI = 18.9, SD = 3.4) and 5.5% among girls (mean BMI = 19.30, SD = 3.0). The difference between boys and girls was statistically insignificant (Chi test, P = 0.81). Fathers of 10.9% students and mothers of 13.0% were found to be overweight/obese; 4.2% of siblings were also overweight/obese. About 50% (48.4%) lived within 5 km from the school and 22.7% travelled less than 10 km. Only 26.8% of students walked/cycled

to school. More than 75% did some routine work (sweeping, swabbing, shopping, agriculture/gardening, washing clothes/utensils, fetching water, and cooking) at home and with 46.1% did it everyday. Over 60% went for tuitions (1 – 14 times/week) and most of them went to places < 1 km from their residence; 60.7% walked/cycled. Nearly half of them (70.6% for boys, 25.8% for girls) were involved in outdoor games; only 11.8% did so for less than 8 hrs/week. One-fourth played daily for at least 1 hr; others played during weekends. Only 15.5% (31.2% for boys, 4% for girls) were active members of sports team having regular practice sessions. Three-fourth of the students watched TV daily for 1 to 5 hrs. Half of them used computers; 33% used it for greater than 8 hrs/week. It was found that only 8.5% do not watch TV/ use computer. About 75% spent 2 to 8 hrs/week on hobbies and 35% slept during daytime.

Thankachi concluded that, the prevalence of overweight/obesity among the school/college going adolescents of urban and rural Thiruvananthapuram District is 5.4%. There was a strong association of this prevalence with family history of overweight/obesity among the parents and sibling. Rural urban differentials were also observed, though not statistically significant. and lack of physical activity also showed an increase association with the prevalence in private unaided school students. The awareness and perceptions about obesity as a problem is high but their knowledge about the causes and consequences of overweight/obesity is not satisfactory. Dietary pattern especially 'fast

food', fizzy drinks, chocolates and ice creams, snacks, pastries and milk were highly significant in increasing the prevalence of obesity. However, age at menarche was not significantly associated with diet alteration and physical activity restrictions did contribute to higher prevalence. Around 74 % of the girls did not play any outdoor games at all and only 12% of the adolescents were involved in regular games every week.

Sussman (2002) conducted a study to monitor behaviors that place adolescents at increased risk for premature morbidity and mortality, the Centers for Disease Control and Prevention developed the Youth Risk Behavior Surveillance System (YRBSS). This system measures six categories of behaviors, including behaviors that contribute to violence and unintentional injuries; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection; unhealthy dietary behaviors; and inadequate physical activity. This study summarizes how some education and health agencies and nongovernmental organizations, in collaboration with community agencies, school boards, parents, and youth, use YRBSS data to describe risk behaviors, create awareness, supplement staff development, set and monitor program goals, develop health education programs, support health-related legislation, and seek funding. This study also summarize the ways in which YRBSS data are distribute electronically.

Grunbaum (2002) studied the priority health-risk behaviors, which contribute to the leading causes of mortality and morbidity among youth and adults, often are established during youth, extend into adulthood, are interrelated, and are preventable. This report covers data during February-December 2001. The Youth Risk Behavior Surveillance System (YRBSS) monitors six categories of priority health-risk behaviors among youth and young adults; these behaviors contribute to unintentional injuries and violence; tobacco use; alcohol and other drug use; sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infection; unhealthy dietary behaviors; and physical inactivity. The YRBSS includes a national school-based survey conducted by CDC as well as state, territorial, and local school-based surveys conducted by education and health agencies. This report summarizes results from the national survey, 34 state surveys, and 18 local surveys conducted among students in grades 9-12 during February-December 2001. In the United States, approximately three fourths of all deaths among persons aged 10-24 years result from only four causes: motor vehicle crashes, other unintentional injuries, homicide, and suicide. Results from the 2001 National Youth Risk Behavior Survey demonstrated that numerous high school students engage in behaviors that increase their likelihood of death from these four causes: 14.1 % had rarely or never worn a seat belt during the 30 days preceding the survey; 30.7 % had ridden with a driver who had been

drinking alcohol; 17.4 % had carried a weapon during the 30 days preceding the survey; 47.1 % had drunk alcohol during the 30 days preceding the survey; 23.9 % had used marijuana during the 30 days preceding the survey; and 8.8 % had attempted suicide during the 12 months preceding the survey. Substantial morbidity and social problems among young persons also result from unintended pregnancies and STDs, including HIV infection. In 2001, 45.6 % of high school students had ever had sexual intercourse; 42.1 % of sexually active students had not used a condom at last sexual intercourse; and 2.3 % had ever injected an illegal drug. Two-thirds of all deaths among persons aged greater than or equal to 25 years result from only two causes: cardiovascular disease and cancer. The majority of risk behaviors associated with these two causes of death are initiated during adolescence. In 2001, 28.5 % of high school students had smoked cigarettes during the 30 days preceding the survey; 78.6 % had not eaten greater than or equal to 5 servings per day of fruits and vegetables during the 7 days preceding the survey; 10.5 % were overweight; and 67.8 % did not attend physical education class daily. Health and education officials at national, state, and local levels are using these YRBSS data to analyze and improve policies and programs to reduce priority health-risk behaviors among youth. The YRBSS data are also being used to measure progress towards achieving 16 national health objectives for 2010 and 3 of the 10 leading health indicators.

Thatcher et al (2002) conducted a study to determine if differences existed between four race/gender groups concerning attempted suicide among a randomly selected, cross-sectional population of 4,565 public high school students in South Carolina. A modified Youth Risk Behavior Survey was designed to gather information on quality of life, life satisfaction, and six risk-behavior categories. The data collected was first analyzed using logistic regression analysis and subsequently analyzed using path analysis. Results suggest several independent variables namely feelings of intimidation, alcohol and cocaine use, self-perceptions of mental health, self perceptions of body weight, dieting practices, bulimic episodes, and physical and sexual abuse were significantly ($p < .01$) associated with adolescent attempted suicide either directly or indirectly through mediating variables. Significant associations among risk behaviors, mediating variables, and self-reported attempted suicide varied across the four race/gender groups, indicating a need to further study differences noticed in each race/gender scheme.

Caroleo, O.(2002) conducted a study to examine the level of HIV/AIDS risk-behavior knowledge of students majoring in recreation and health-related fields. A total of 258 undergraduate and graduate students were surveyed. Over 50 % of the participants believed that HIV can penetrate unbroken skin, over 40 % believed that sharing kitchen utensils and a bathroom with a person with AIDS places one at risk for contracting AIDS, and nearly 25 % believed that AIDS can be transmitted by mosquitoes and

cockroaches. No significant relationship was found between participants' personal experience with people with AIDS and level of knowledge. Overall students demonstrated some knowledge of AIDS. However, there is still a great deal of misinformation regarding AIDS suggesting the need for incorporating HIV/AIDS information into the curriculum.

Takakura, M. et al (2001) explored patterns of health-risk behaviors among Japanese high school students and examined if a cluster and an accumulation of health-risk behaviors existed. Self-administered questionnaires were employed in 1999 using a sample of 1,466 students (male 50.5 %, female 49.5 %) in grades 10 through 12 at seven public senior high schools in Okinawa, Japan. Health-risk behaviors studied included cigarette smoking, alcohol use, thinner use, non use of seat belts, suicide ideation, sexual intercourse, weight loss practices, and physical inactivity. Among male and female students, cigarette smoking, alcohol use, and sexual intercourse clustered. Accumulation of these risk behaviors also occurred because the observed proportion was greater than the expected proportion assuming independent occurrence. Vocational high school students and upper graders were strongly associated with accumulation of health risk behaviors. These findings identify a high-risk target group among Japanese adolescents and suggest that preventive intervention strategies should take into consideration the cluster and accumulation of health-risk behaviors.

Morrison-Theodore-Charles (2002) examines the correlates of violence, sexual risk taking, and substance use among a sample of 284 newly incarcerated African American adolescent males in Birmingham, Alabama. Subjects gave informed consent to be interviewed and to be tested for gonorrhoea and chlamydia. Additionally, separate urine samples collected by the detention centre staff were analyzed for presence of drug metabolites. Graduate students interviewed subjects in small groups of 1 to 6. This study combined Social Cognitive Theory, Resilience Theory, and Problem Behaviour Theory. Variables chosen as dependent variables to represent the 3 types of risk behaviour were history of having shot at someone with a real gun in the past year, history of having caused a pregnancy, and being classified as a cocaine user. Hypotheses were that specific protective and risk variables would have the same relationships across the three dependent variables.

Data analysis included cross-tabulations of each dependent variable and the list of independent variables. Logistic regression analyses were performed with variables that had significant ($P .05$) or near-significant ($.10$) bivariate associations with each dependent variable. Logistic regression analyses also were performed for each dependent variable with the same set of independent variables to identify shared protective and risk factors.

Over 38% of those surveyed reported having shot at someone with a real gun in the past year. More than one third of respondents reported having gotten someone pregnant. 15.3% of respondents were classified as cocaine

users. About one third (33.7%) of participants reported belonging to a gang. Some participants (21.7%) reported having been abused sexually. Eighteen percent tested positive for gonorrhoea and/or chlamydia. Protective factors were detected for each risk behaviour. Being in school was negatively associated with each dependent variable. Measures of religiosity had near-significant bivariate associations with having shot at someone. Many of the relationships between dependent variables and hypothesized risk factors were supported. Gang membership was significantly associated with both histories of shooting and getting someone pregnant. Comparisons between the study results and those in the literature are discussed.

Sun-Feng (2001) research investigation indicates that education and health are interrelated. A child's health status is a major determinant of educational achievement. Risky behaviors by youth cause school failure, underachievement, and related health problems. In 1989, the U.S. Centers for Disease Control and Prevention (CDC) developed the Youth Risk Behavior Surveillance System (YRBS) to monitor priority health-risk behaviors in 6 categories among youth and young adults nationwide. This survey provides national, state, territorial, and local school-based information gleaned from high school students and is conducted every 2 years to acquire data representative of students in Grades 9 & 12, summarizing results and trends in the above selected risk behaviors. This quantitative study used reports from the past 3 years of the Alabama YRBS data developed by the CDC. The

population for this study included students who were enrolled in both public and private high schools during the academic school years of 1995, 1997, and 1999 across Alabama. In this study, 5 research questions were asked. Descriptive statistics were used to generate profiles for the past 3 years of data. A multivariate analysis of variance (MANOVA) and cross tabulation were made to compare percentages of 3 race/ethnic, gender, and grade subgroups for the above 6 categories on selected youth risk behaviors identified by CDC. A linear regression was used to analyze trends of Alabama youth risk behaviors. Findings included the profiles of 3 years of YRBS data, the most prevalent youth risk behaviors, significance of comparison results with the national YRBS data, the degree of youth risk behavior changes among 3 subgroups, and trend analyses for Alabama students. Implications were discussed that were appropriate for Kindergarten through Grade 12 school health educators, university graduate teacher preparation programs, and educational leaders. Future study recommendations were also suggested. Findings of this study can help state policy-makers understand the current status of the health of Alabama youth. It can also assist local policy-makers such as boards of education, local educators, and especially superintendents, principals and school health educators, as they struggle to create and win support for improved student health.

Chapter Three

METHODOLOGY

- ✦ Questionnaire Development
 - ✦ Item Rationale
 - ✦ Selection of Participants
 - ✦ Data Collection Protocol
 - ✦ Data processing Procedure
-

This chapter consists of procedure adopted with Questionnaire development, Item rationale, Selection of participants, Data collection protocol and Data processing procedure.

Questionnaire Development

To determine the health risk behaviours, the development of the questionnaire is primarily based on the questionnaire developed by Centre for Disease Control and Prevention, U.S. Department of Health and Human Services, Atlanta, GA 30333. The review conducted indicate that virtually all behaviours contributing to the leading causes of morbidity and mortality can be placed into eight categories: Dietary behaviour and over weight, Hygiene, Violence, Mental health, Tobacco use, Alcohol and other drug use, HIV/AIDS related knowledge and Attitude towards physical activity. The temporarily developed questionnaire was sent to the specialists in survey research and modified according to their comments and suggestions. The first version of the questionnaire was completed in 2004 and reviewed by representatives from the education agency viz. Board of State Secondary Education, CBSE, ISE and VHSE. A field-testing was conducted with sample size of 500 and thereafter examined the student's responses to questionnaire, many changes on items for improving the wording of questions and identifying response categories were made.

The questionnaire contains 55 questions addressing the following topics:

Sl. No.	Topics	Q. nos
1	Respondent demographics questions	1-5
2	Dietary behaviour and overweight	6-9
3	Hygiene	10-13
4	Violence	14
5	Mental health	15-17
6	Tobacco use	18-23
7	Alcohol and other drug use	24-38
8	HIV/AIDS related knowledge	39-45
9	Attitude towards physical activity	46-55

This questionnaire is presented as *Appendix I* and the item rationale is presented below:

Item Rationale

Respondent demographics Question(s):

Q. 1. How old are you?

Q. 2. What is your sex?

Q. 3. In which standard are you studying?

Q. 4. In which category does your school belong to?

Q. 5. Which Syllabus of education are you following?

Rationale:

The questions in this module measure the age, gender, class, category and syllabus of the respondents. These characteristics are related to the health risk behaviours and attitude towards physical activity assessed by the survey. Data describing how health risk behaviours and attitude towards physical activity factors vary by demographic characteristics can help guide policy, programme planning and implementation.

Height, Weight, Dietary Behaviour and Over weight Question(s):

Q. 6. What is your height and weight?

Q. 7. During the past 30 days, how often did you feel hungry because of not having enough food at home?

Q.8. How many times per day did you usually eat fruits such as ripe bananas, papaya, pineapple, grapes, orange or any other?

Q.9. How many times per day did you usually eat vegetables such as ladies finger, pumpkin, drumstick, brinjal, tomato, plantain raw or any other?

Rationale:

These questions in this measure self-reported height and weight, frequency of hunger and fruit and vegetable consumption. Data on self-reported height and weight can be used to calculate body mass index and

provide a proxy measure of whether higher secondary school students are overweight.

Although overweight prevalence estimates derived from self-reported data are likely to be low, (Berner et. al, 2000 and Goodman, 2000) they can be useful in tracking trends over time. Prevalence trends from US national surveys of adults using self-reported height and weight have been consistent with trend data from national surveys using measured height and weight (Galuska et. al , 1996). Overweight and obesity are increasing in both genders and among all population groups. In 1999, an estimated 61% of United States adults and 14% of adolescents aged 12-19 years were overweight. In 1999, there were nearly twice as many overweight children and almost three times as many overweight adolescents as there were in 1980. (NCHS-CDC, 2002) Approximately 300,000 deaths a year in the United States are currently associated with overweight and obesity. Overweight or obesity acquired during childhood or adolescence may persist into adulthood and increase the risk later in life for coronary heart disease, gallbladder disease, some types of cancer, and osteoarthritis of the weight-bearing joints (Public Health Service, 1988). In adolescence, obesity is associated with hyperlipidemia, hypertension, abnormal glucose tolerance, and adverse psychological and social consequences (Dietz WH, 1998).

As part of a school health programme, school meal programmes can be source of healthy food to students (as many may not have other regular sources of food) and can promote daily attendance, class participation and academic achievement. In addition, schools can teach nutrition education as part of health education curriculum to help students develop the knowledge, skills, and behaviours needed to foster life long healthy eating habits.

Fruits and vegetables are good sources of complex carbohydrates, vitamins, minerals, and other substances that are important for good health. Dietary patterns with higher intake of fruits and vegetables are associated with a decreased risk for some types of cancer. (Van Duyn MA 2000, Ness AR1997 & Terry P, 2001) In 2001, only 23.3% of male high school students and 19.7% of female high school students met the minimum average daily goal of at least five servings per day of vegetables and fruits (CDCP, 2002).

Hygiene Question(s):

- Q. 10. During the past 7 days, how did you usually wash your hands before eating at school?
- Q. 11 Are the toilets or latrines safe at school?
- Q. 12 Are the toilets or latrines clean at school?
- Q. 13. How often did you use soap when washing your hands after using toilet or latrine?

Rationale:

The questions in this module measure frequency of hand washing and hand-washing with soap after using toilet. Diarrhoeal diseases kill 2 to 3 million children in developing countries every year. Hand washing with soap alone could cut deaths into half. Removing excreta and cleaning hands with soap after contact with faecal material prevents transmission of the bacteria, viruses, and protozoa that cause diarrhoeal diseases. UNICEF reports “one of the major problems faced by hundreds of millions of school-age children is infection by parasites and flukes. These parasites consume nutrients from children they infect, bringing about or aggravating malnutrition and retarding children’s physical development. They also destroy tissues and organs in which they live causing pain and various health problems. Water and sanitation related diseases affecting children include diarrhoea, trachoma, schistosomiasis, scabies, and Guinea worm. All of these compromise children’s attendance and performance at school and, not uncommonly, can result in death” (Annan, 2001).

Schools can help improve child and adolescent health by providing and maintaining sanitary conditions. Hand washing, toilet or latrine, and other sanitation facilities and safe water are either non-existent or inadequate in many schools in both rural and urban areas in developing countries. By providing well-maintained and adequate number of sanitation facilities and

safe water as part of the school health programme, schools can reinforce the health and hygiene messages delivered in health education and serve as a model to both students and the broader community.

School Violence Question:

Q. 14. During the past 12 months how many times were you in a physical fight?

Rationale:

This question will help to understand the magnitude of violence in schools. School violence does not start in the school. The question will measure how often students have been physically attacked, how often they have participated in a physical fight, the circumstances surrounding serious injuries. Injuries are a major cause of death and disability among young children. Each year, 750,000 children die from injuries. Another 400 million children are hurt seriously. In 2000, estimated 190,000 youth homicides (9.2 per 100,000 populations) occurred globally. For every youth homicide, approximately 20 to 40 victims of non-fatal youth violence receive hospital treatment. Many injuries lead to permanent disability and brain damage. Victims of bullying have increased stress and a reduced ability to concentrate and are at increased risk for substance abuse, aggressive behaviour, and suicide attempts (Anti-Bullying Centre,2002).

School health programmes can help reduce violence and unintentional injuries in schools by establishing social and physical environments that promote safety and prevent injuries and violence; implementing health education that teaches students knowledge, attitudes, and skills they need to adopt safe lifestyles; establishing crisis response mechanisms; providing mental health and social services to meet the needs of students; and providing safe physical education and extracurricular physical activity programmes.

Mental Health Question(s):

Q. 15. During the past 30 days how often have you felt lonely?

Q. 16 During the past 12 months, did you ever seriously consider attempting suicide?

Q. 17 How many close friends do you have?

Rationale:

The questions in this module measure feeling of loneliness, loss of sleep due to worry, sadness and hopelessness, suicide thought and attempts, and attachment. Anxiety disorders, behaviour disorders, cognitive disorders, depression and other mood disorders are among the most common mental health problems among adolescents. Every country and culture has children and adolescents struggling with mental health problems. Most of these young people suffer needlessly, unable to access appropriate resources for

recognition, support, and treatment. If ignored, these young people are at high risk for abuse and neglect, suicide, alcohol and other drug use, school failure, violent and criminal activities, mental illness in adulthood, and health-jeopardising impulsive behaviours. Depression during adolescence and young adulthood is recognized increasingly as an important public health and social problem. Worldwide, about 4 million adolescents attempt suicide annually, resulting in at least 100,000 deaths. (Annan KA, 2001 & WHO, 2001).

As part of a school health programme, school mental health and social services can play a critical role in fostering healthy social and emotional development among students. To help students develop positive mental health, school mental health and social services can teach life-skills such as problem-solving, critical thinking, communication, interpersonal relations, empathy, and methods to cope with emotions and crises. In addition, school mental health and social services can include prevention, assessment, treatment, and case management for students either directly or through referrals to community-based programmes (NMHI, 1999 & Adelman, 1998).

Tobacco Use Question(s):

Q.18. How old were you when you first tried a cigarette?

Q. 19. During the past 30 days how many days did you smoke cigarettes?

Q. 20. During the past 30 days how many days did you use any other form of tobacco such as gudka, hans, panparag ?

Q. 21 During the past 12 months have you ever tried to stop smoking cigarettes?

Q. 22. During the past 30 days how many cigarettes did you smoke daily?

Q. 23. Which of your parents or guardians use any form of tobacco?

Rationale:

The questions in this module measure current cigarette use, age of initiation of cigarette smoking, attempted cessation of cigarette smoking, current use of other tobacco products, exposure to second-hand smoke, and tobacco use by parents/guardians (i.e., role models).

About one in three or 1.1 billion people worldwide smoke. Among these, about 80% live in low and middle-income communities (WHO, 1999). By 2020, the tobacco epidemic is expected to kill more people than any single disease. By 2020, tobacco use will cause about 18 percent of all deaths in developed countries and about eleven percent of all deaths in developing countries. Tobacco use is a known or probable cause of about 25 diseases including heart disease, cancer, stroke, and chronic obstructive pulmonary disease. Smokeless tobacco use causes oral cancer in the lip, tongue, mouth, and throat areas and digestive system cancers. Most people who use tobacco initiate use prior to age 18. Exposure to tobacco smoke in the environment

can aggravate allergies and increase the severity of symptoms in children and adolescents with asthma and heart disease; it is also associated with lung cancer (UNESCO, 1999). Family members, film stars, and sports heroes, who use tobacco influence children and adolescents to use tobacco (USDHHS, 1994).

School health programmes can reduce tobacco use by implementing and enforcing policies to prevent tobacco use among students, faculty, staff, and visitors on school property and at all school events at all times; by providing tobacco use prevention education; and by offering tobacco cessation programmes for faculty, staff, and students (CDC, 1994).

Alcohol and Other Drug Use Question(s):

Q. 24. How old were you when you had your first drink of alcohol other than a few sips?

Q.25 During past 30 days on how many days did you have at least one drink containing alcohol?

Q. 26 During your life, how many times did you drink so much alcohol that you were really drunk?

Q. 27. How old were you for the first time you drunk so much alcohol that you were really drunk?

- Q. 28. During your life how many times have you ever had a hangover, felt sick, headache, got into trouble with your family or friends, missed school or got into fight as a result of drinking alcohol?
- Q. 29 The most number of drinks you have had on one occasion?
- Q. 30 What type of alcohol do you usually drink?
- Q. 31 With whom Do you usually drink alcohol?
- Q. 32 Do your parents or guardians know that you drank alcohol?
- Q. 33 Which of your parents or guardians drink alcohol ?
- Q. 34 During your life how many times have you used drugs such as marijuana, ganja, hashish?
- Q. 35 During the past 30 days how many times did you use ganja?
- Q. 36 How old were you when you first tried marijuana or ganja?
- Q. 37 During your life how many times have you shared needles or syringes used to inject any drug into your body?
- Q. 38 During this school year were you taught in any of your classes the dangers of using drugs?

Rationale:

The questions in this module measure current alcohol use, how students get the alcohol they drink, episodes of heavy drinking, problems associated with alcohol use, and lifetime drug use.

Worldwide, alcohol use causes 3% of deaths (1.8 million) annually, which is equal to 4% of the global disease burden. Across sub-regions of the world, the proportion of disease burden attributable to alcohol use is greatest in America and Europe ranging from 8% to 18% of total burden for males and 2% to 4% of total burden for females. Besides the direct effects of intoxication and addiction, alcohol use causes about 20% to 30% of oesophageal cancer, liver disease, homicide and other intentional injuries, epilepsy, and motor vehicle accidents worldwide (WHO, 2002). In most countries, alcohol-related mortality is highest among 45- to 54-year-olds, but the relationship between the age of initiation of alcohol use and the pattern of its use and abuse in adulthood makes the study of alcohol consumption among adolescents important (Poikolainen K et. al., 2001).

While adverse health consequences from long-term chronic alcohol use may not cause death or disability until fairly late in life, acute consequences of alcohol use, including intentional and unintentional injuries, are far more common among youth and young adults. Unintentional injuries are the leading cause of death among 15- to 25-year-olds and many of these injuries

are related to alcohol use (Facy F, 2000). Young people who drink are more likely to use tobacco and other drugs and engage in risky sexual behaviour, than those who do not drink (Hibell B et. al, 2000). Problems with alcohol can impair adolescents' psychological development and influence both the school environment and leisure time negatively (Currie C et al, 2000).

Although scientific evidence on the efficacy of educational programmes conducted in schools is limited, such programmes have been designed to help reduce risks associated with alcohol use among young people. School health programmes can help students acquire communication, critical thinking, refusal, and other life skills needed to avoid problems associated with alcohol and other drug use (Paglia A, and Room R, 1998).

HIV/ AIDS Related Knowledge Question(s):

Q. 39 Have you ever heard of HIV or the disease called AIDS?

Q. 40 During this school year, were you taught in any of your classes about
HIV or AIDS?

Q. 41 Can people get HIV infection or AIDS from mosquito bites?

Q. 42 Will people get infection of HIV by having sexual intercourse?

Q. 43 Will people get infection of HIV through blood transfusion?

Q. 44 Will people get infection of HIV by using common syringes of medical
injection?

Q. 45 Will people get infection of HIV by a touch from an AIDS patient?

Rationale:

These questions measure the knowledge and concept about HIV and whether higher secondary school students have received HIV prevention education. Since the epidemic began, more than 60 million people have been infected with HIV (UNAIDS, 2002). In 2001 alone, an estimated 5 million people became infected with HIV. More than half of those newly infected with HIV today are between 15 and 24 years old. Each day, nearly 6,000 get infected. An estimated 11.8 million young people aged 15 to 24 are living with HIV and AIDS (UNICEF, 2002). HIV infection and AIDS is by far the leading cause of death in sub-Saharan Africa and the fourth leading cause of death worldwide, by the epidemic claiming about 3 million lives in 2001.

In many countries, HIV infection and AIDS is reducing average life expectancy, threatening food security and nutrition, dissolving households, overloading the health care system, reducing economic growth and development, reducing school enrolment and the availability of teachers (UNAIDS, 2002).

School health programmes can play an important role in helping students reduce their risk of pregnancy, STD and HIV/AIDS infection (WHO, UNAIDS, UNESCO., 1998). Based on community norms and references, school health education can help students develop the knowledge and skills they need to avoid or reduce sexual risk behaviours, school health services

can provide or refer to reproductive health services, and school health policies can protect students and staffs infected with HIV and foster a safe and respectful environment for everyone.

Attitude towards Physical Activity Question(s):

Q. 46 During a usual week, on how many days are you physically active for a total of at least 60 minute per day?

Q. 47 How much time do you spent during a usual day sitting and watching television, playing computer games, talking with friends or doing other sitting activities such as reading books, playing chess or playing scrabble?

Q. 48 During the past 7 days on how many days did you walk or ride a bicycle to and from school?

Q. 49 During the past 30 days on how many days did you miss classes or school without permission?

Q. 50 During the past 30 days how often did your parents or guardian understands your problems and worries?

Q. 51 During the past 30 days how often did your parents or guardian really know what you were doing with your free time?

Q. 52 During this school year on how many days did you get to physical education class each week?

Q. 53 During the past 12 months, on how many sports teams did you play?

Q. 54 During this school year have you been taught in any of your classes the benefit of physical activity?

Q. 55 During the past 7 days on how many days did you do exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training?

Rationale:

The questions in this module measure participation in physical activity, physical education classes, sports teams, watching television and sedentary leisure behaviour and travel to school. Participating in regular physical activity helps build and maintain healthy bones and muscles, control weight, build lean muscle, and reduce fat; reduces feelings of depression and anxiety; and promotes psychological well-being (USDHSS, 1996). Participating in adequate physical activity throughout the life span and maintaining normal weight are the most effective ways of preventing many chronic diseases, including cardiovascular disease and diabetes (WHO, 2002). The prevalence of type II diabetes is increasing globally and now is occurring during adolescence and childhood (Silink M, 2002). However, “a sedentary lifestyle

has increased rapidly in most developed and developing countries around the world. It is estimated that in a great number of countries, both industrialised and developing, less than one third of young people are sufficiently active to benefit their present and future health and well-being” (CDCP, 1996).

As part of school health programmes, schools can offer physical education and opportunities, both during and outside the school day, for all students to participate in physical activity and sports. Schools that “offer intensive physical activity programs see positive effects on academic achievement, even when the time spent on academics is reduced to allow for these programmes, including increased concentration; improved mathematics, reading, and writing scores; and reduced disruptive behaviours” (Shepard R, 1997: Sallis J et al, 1999: MMWR, 1997).

Selection of Participants

The study is intended to provide reliable data describing the characteristics of higher secondary school children of 15 to 18 years of both sexes. The sample represent proportionately the various districts of Kerala state with 2546 boys (Mean Age = 16.48 years) and 2521 girls (Mean Age = 16.19 years). The details of the selected subjects are given below:

TABLE 1

Q.5 Which syllabus of education are you following?

	N	Boys (%)	N	Girls (%)
State Higher Secondary (%)	1399	54.95	1609	63.82
CBSE (%)	598	23.49	517	20.51
ISE (%)	376	14.77	166	6.58
VHSE (%)	173	6.79	229	9.09
Total	2546	100	2521	100

The sample design divide the state based on revenue districts (14) in which each educational district (34) was evaluated for their location in accordance with geographic regions, such as coastal, midlands and highlands and thereafter based on the total strength of students belonging to that area, proportionate allocation was done.

The graphical representations of total and category wise details of the participants are presented as Figure. 1 and Figure 2.

Figure 1 : Q.5 Which syllabus of education are you following?
(Total (N) = 5067)

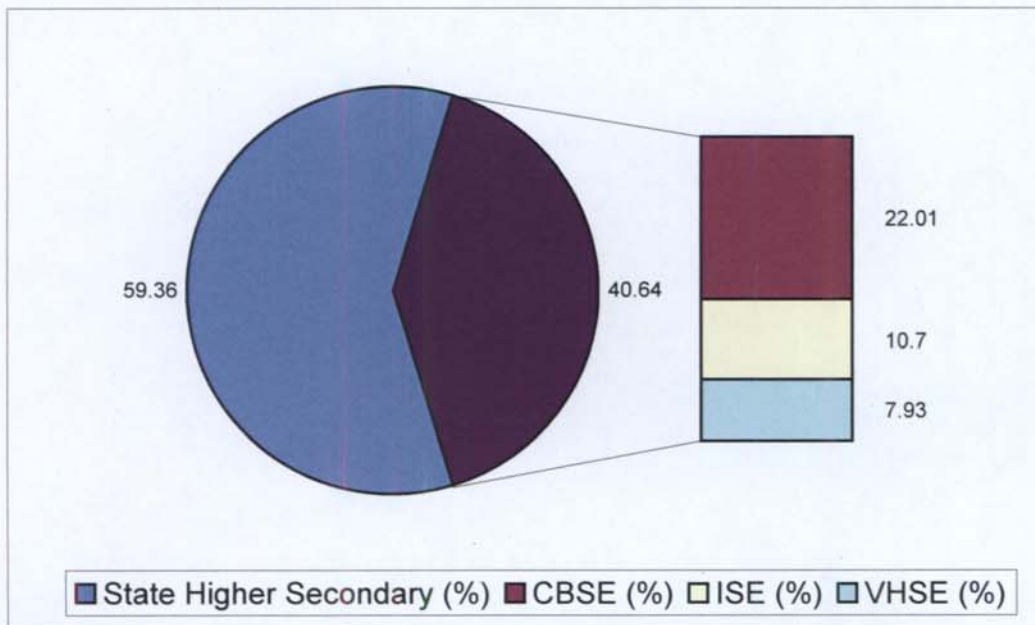
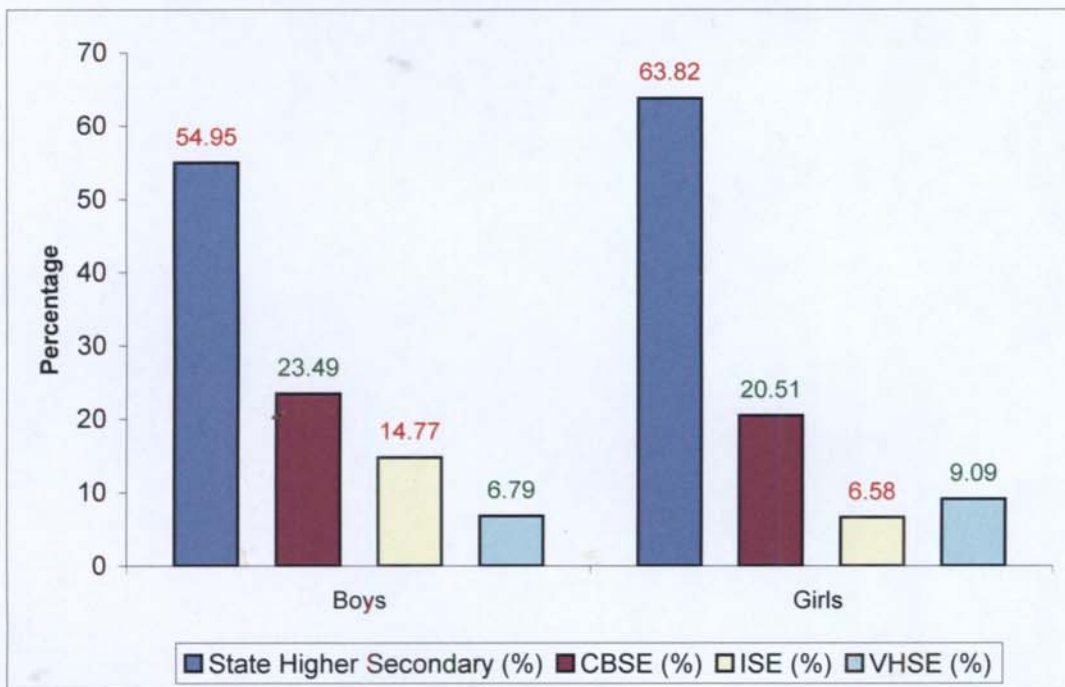


Figure 2 : Q.5 Which syllabus of education are you following?
(Sex & Category wise)



Twenty (20) Primary Sampling units (PSU) were created by grouping the adjacent educational districts, so that the total population in each group were approximately the equal. The PSU's were assigned in such a way that each group represents a compact area of the state, so that, such groups will have an approximately equal student population. Thereafter, one or two schools from each PSU's were selected randomly. The selection was done based on the average class strength and the number of divisions. This procedure will result in a sample, that will include at least two classes from two different schools for each PSU.

One division was selected at random from each group and two or more groups (science, humanities and commerce treated separately) were selected from each school. Each division in a given group thus got an equal chance of being selected. All the students from the selected division of a particular group were invited to participate in the testing programme. Thus, 50 to 100 students from each PSU were selected for the testing programme.

Data Collection Protocols

Data collection procedures are similar for all PSUs. Local procedures for obtaining parental permission are followed before administering the questionnaire in school. Passive permission, in which parents send back a signed form, only if they do not want their child to participate in the survey.

Survey procedures are designed to protect student privacy by allowing for anonymous and voluntary participation. In the survey, students complete the self-administered questionnaire during one class period and record their responses directly in an answer sheet. To the extent possible, students' desks are spread throughout the classroom to minimize the chance that students will see each other's responses. Students were also encouraged to use an extra sheet of paper or envelop, provided by the investigator, to cover their responses as they complete the questionnaire. When students complete the questionnaire, they were asked to seal their questionnaire answer sheet in an envelop before putting it in a box.

Data Processing Procedure

Microsoft ACCESS© was used to code the data. The category wise response to each question was drawn using structured query (SQL). The extracted data were analysed using Microsoft EXCEL© software. Percent Analysis was later done on the data collected. The Body Mass Index (BMI) was calculated using the formula $BMI = \text{Weight (in kg.)} \times \text{Height (in m}^2\text{)}$. Student's t-test was performed for comparing the means on height and weight variables.

**HEALTH RISK BEHAVIOUR AND ATTITUDE TOWARDS
PHYSICAL ACTIVITY AMONG HIGHER SECONDARY
SCHOOL STUDENTS IN KERALA**

By

BABU. D. THATTIL

A Thesis

*Submitted to the University of Calicut, Kerala
for the Degree of Doctor of Philosophy*

in

PHYSICAL EDUCATION

**DEPARTMENT OF PHYSICAL EDUCATION
UNIVERSITY OF CALICUT
JULY 2007**

**RESULTS AND
DISCUSSION**

12

The statistical analysis done on the data collected on priority health-risk behaviours contributing to the leading causes of morbidity and mortality are presented into eight categories: Dietary behaviour and over weight, Hygiene, Violence, Mental health, Tobacco use, Alcohol and other drug use, HIV/AIDS related knowledge and Attitude towards physical activity.

Data was coded using the Microsoft ACCESS© and category wise responses to each question was drawn using structured query (SQL). The extracted data were analysed using Microsoft EXCEL© software. Data were presented in percentage style. The Body Mass Index (BMI) was calculated by using the formula $BMI = \text{Weight (in kg.)} \times \text{Height (in m}^2\text{)}$. Student's t test was used for comparing the means of two groups for independent samples.

Charts are prepared by using Microsoft Excel©, so as to be visually appealing and there by marking it easy for users to see comparisons, patterns, and trends in data. For instance, rather than having to analyze several columns of worksheet numbers, graphs will help to see at a glance whether figures are falling or rising over a certain periods, or how the actual difference exists when compared to counter parts.

FINDINGS

Dietary Behaviour and Over Weight

The height and weight of State+VHSE and CBSE+ISE boys and girls were analysed separately. The mean row scores of height and weight of boys and girls participants are presented in Table.2.

TABLE 2
Average Height and Weight of Participants

	CBSE+ISE	State+VHSE	CBSE+ISE	State+VHSE
	Boys	Boys	Girls	Girls
Height	168.28	167.34	158.63	155.62
Weight	58.87	53.98	50.16	45.91

Table 2 indicates the average height of the State+VHSE boys as 167.34 cms and that of the CBSE+ISE boys as 168.28 cms, which is 0.94 cms (Mean Difference) higher than State+VHSE boys. The 't' test assuming equal sample variance was done to find out significant differences in mean. Significant difference was found between State+VHSE boys and CBSE+ISE boys, $t(2544) = 2.81$ $p < .05$. Similarly, the average height of the State+VHSE girls is 155.62 and that of CBSE+ISE girls is 158.63cm, which is 3.01cm (Mean Difference) higher than State+VHSE girls. The 't' test assuming equal sample variance was done and the significant difference was found between State+VHSE girls and CBSE+ISE girls, $t(2519) = 9.69$ $p < .05$.

An analysis of the Table 2, also indicate that the average weight of the State+VHSE boys as 53.98 kg and that of CBSE+ISE boys as 58.87 kg, which is 4.75 Kg (Mean Difference) higher than the State+VHSE boys. The 't' test assuming equal sample variance was done to find out the significant differences. Significant difference was found between State+VHSE boys and CBSE+ISE boys, $t(2544) = 11.90$ $p < .05$. Similarly, the average weight of the

State+VHSE girls as 45.91 Kg and that of CBSE+ISE girls as 50.16 Kg, which is 4.99 Kg (Mean Difference) higher than the State+ VHSE girls. The 't' test assuming equal sample variance was done and significant difference was found between State+VHSE girls and CBSE+ISE girls, $t(2519) = 12.05$ $p < .05$.

The graphical representation of the average height and weight of both sex category wise is presented in Figure.3.

Figure 3 : Average Height and Weight of the Participants (Sex & Category wise)

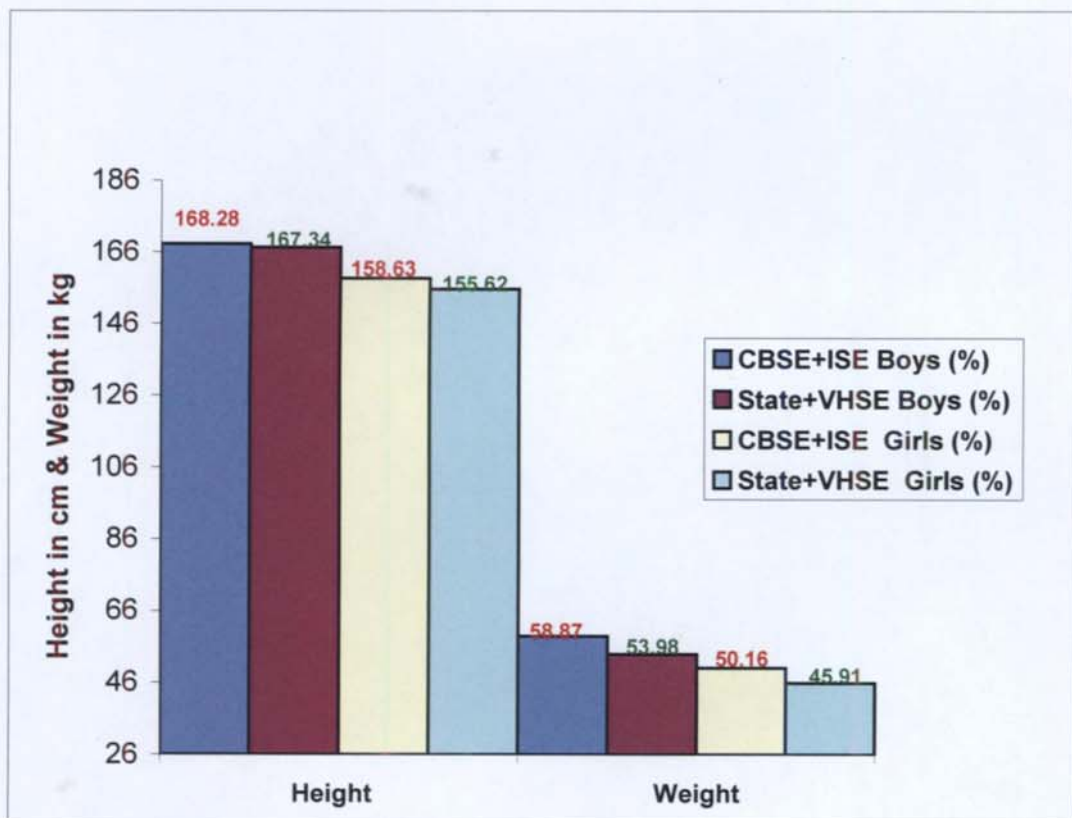




TABLE. 3

NB

5907

372.86 BAB/H

Classification of Participants Based on Body Mass Index (BMI)

	N	CBSE + ISE Boys (%)	N	State +VHSE Boys (%)	N	CBSE +ISE Girls (%)	N	State+ VHSE Girls (%)
Under weight < 18.5 (%)	259	26.59	683	43.45	199	29.14	918	49.95
Normal weight 18.5-24.9 (%)	613	62.94	805	51.21	437	63.98	863	46.95
Over weight 25 - 29.9 (%)	89	9.14	68	4.33	37	5.42	46	2.50
Obesity 30 \geq (%)	13	1.33	16	1.02	10	1.46	11	0.60
Total	974		1572		683		1838	
BMI taken from WHO report 1998 "Obesity: Preventing And Managing The Global Epidemic". Report of WHO consultation on obesity. Geneva: World Health Organization								

Table (3) indicates that State-wide, 40.64% of total students participated in the study were found to be underweight with the BMI less than 18.5. Overall 43.45% of the State+VHSE boys are underweight compared to the 26.59% of CBSE+ISE boys as per the norms of WHO. In the case of girl students, 49.95% of the State+VHSE students are underweight compared to the 29.14% in the CBSE+ISE counter parts (Table 3).

State-wide 4.74 % students were at risk for becoming overweight i.e. the BMI between 25-29.9%. Overall 9.14% of the CBSE+ISE boys are at the risk of becoming overweight compared to the 4.33% of State+VHSE boys. In the case of girls, students 1.46% of the CBSE+ISE students are obese compared to the 0.60% in the State+VHSE counter parts (Table 3).

Overall prevalence of obesity was only 0.99% in both sexes together; among CBSE + ISE boys, it is 1.33% compared to the 1.02% of State+VHSE boys. In the case of girls, students 5.42 % of the CBSE+ISE students are at risk over weight compared to the 2.50% in the State+VHSE counter parts (Table 3).

An analysis of the 't' test assuming equal sample variance was performed and significant differences was found between State+VHSE boys and CBSE+ISE boys on Body Mass Index, $t(2544) = 10.54$ $p < .05$. Similarly, a significant difference between State+VHSE girls and CBSE+ISE girls on BMI was found, $t(2519) = 7.23$ $p < .05$.

The graphical representation of the classification of participants based on BMI is presented in Figure.4 and sex and category wise presented as Figure 5.

Figure 4 : Classification of participants based on Body Mass Index (BMI) (Total (N) = 5067)

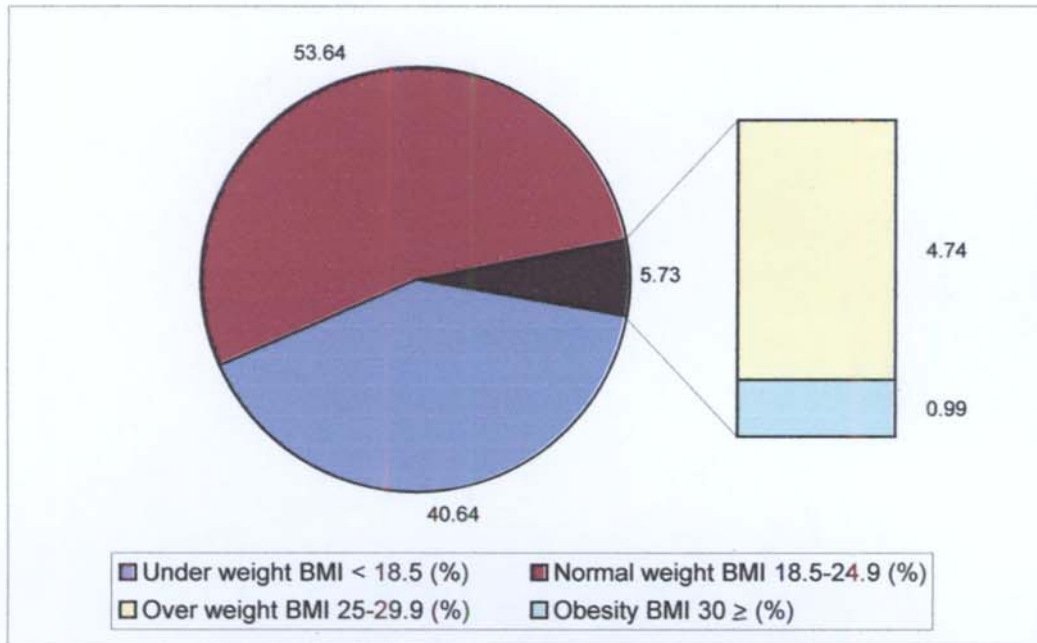


Figure 5 : Classification of participants based on Body Mass Index (BMI) (Sex & Category wise)

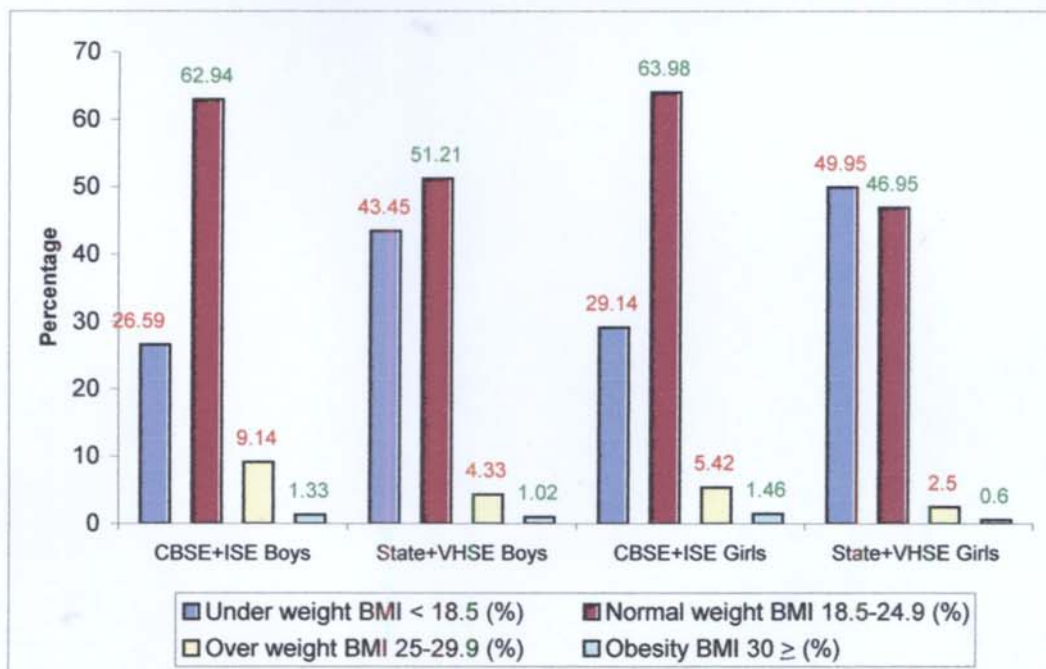


TABLE 4

Q. 7. During the Past 30 days, How often did you feel hungry because of not having enough food at home?

	N	CBSE+ ICSE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ICSE Girls (%)	N	State+ VHSE Girls (%)
0 Days (%)	601	61.70	1043	66.35	578	84.63	1518	82.59
1 or 2 Days (%)	327	33.57	265	16.86	52	7.61	169	9.19
3 to 15 Days (%)	46	4.72	212	13.49	53	7.76	111	6.04
16 to 29 Days (%)	0	0.00	29	1.84	0	0.00	27	1.47
All Days (%)	0	0.00	23	1.46	0	0.00	13	0.71
Total	974		1572		683		1838	

Table 4 indicates 0.71% of students went hungry most of the days because there was not enough food at home during the past 30 days. While CBSE+ISE boys (0%) and girls (0 %) never have had such experience. On the other hand 1.46% of boys and 0.71% of girls in the State+VHSE category went hungry most of the days at the same time their counter part experienced 0%.

The graphical representation to the responses to question No.7 is presented in Figure.6 and sex and category wise responses is presented as Figure 7.

Figure : 6 Q. 7. During the past 30 days, how often did you feel hungry because of not having enough food at home ?
 (Total (N) = 5067)

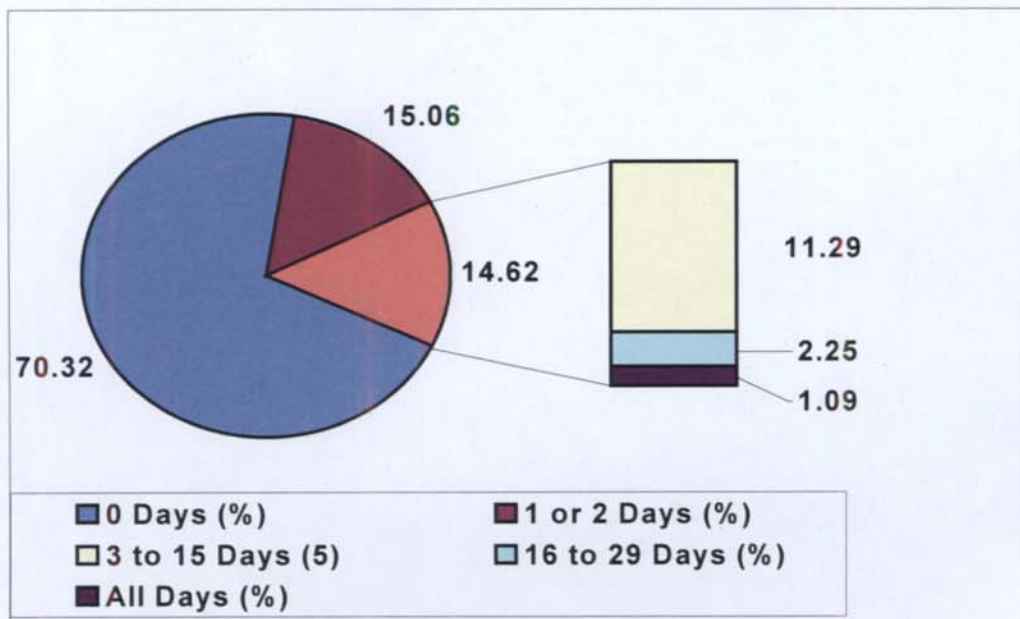


Figure 7 : Q.7. During the past 30 days, how often did you feel hungry because of not having enough food at home ?
 (Sex & category wise)

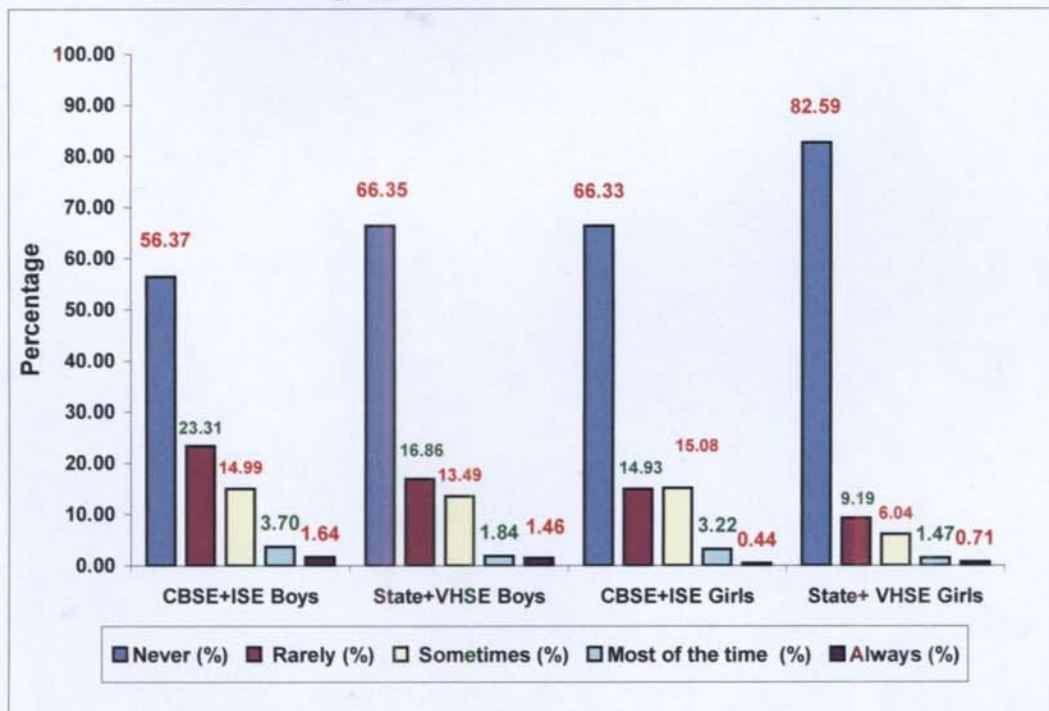


TABLE. 5

Q. 8. How many times per day did you usually eat fruits such as ripe bananas, papaya, pineapple, grapes, orange or any other?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Rarely (%)	208	21.36	286	18.19	77	11.27	309	16.81
One time per day (%)	558	57.29	1063	67.62	470	68.81	1321	71.87
Two times per day (%)	151	15.50	166	10.56	104	15.23	161	8.76
Three times per day (%)	34	3.49	25	1.59	18	2.64	27	1.47
Four or more times per day (%)	23	2.36	32	2.04	14	2.05	20	1.09
Total	974		1572		683		1838	

Table 5 indicates, almost seven out of ten students usually ate fruit (67.34%), such as ripe bananas, papaya, pineapple, grapes or orange one or more times per day during the past 30 days preceding the survey. When, comparing the frequency of fruits consumption category wise, it shows that State+VHSE school boys consume less fruits than their counter parts in CBSE+ISE i.e. 67.62% of the State+VHSE boys ate one time per day, 10.56% two times per day and 1.59% three times per day and 2.04% four times per day. At the same time, CBSE+ISE boys ate 57.29% one time per day, 15.50% two-time per day, 3.49% three times per day and 2.36% four or more times per day.

Table 5 on girls also shows the same trend as in the case of boys. 71.87% of the State+VHSE girls consume fruits one time per day, 18.76% girls ate two times per day, 1.47% three times per day and 1.09% consumes four or more times per day. At the same time 68.81% CBSE+ISE girls ate fruits one time per day, 15.23% ate two times per day, 2.64% three times per day and 2.05% ate four or more times per day.

The graphical representation to the responses to question No.8 is presented in Figure.8 and the sex and category wise responses is presented as Figure 9.

Figure 8 : Q. 8. How many times per day did you usually eat fruits such as ripe bananas, papaya, pineapple, grapes, orange or any other ? (Total (N) = 5067)

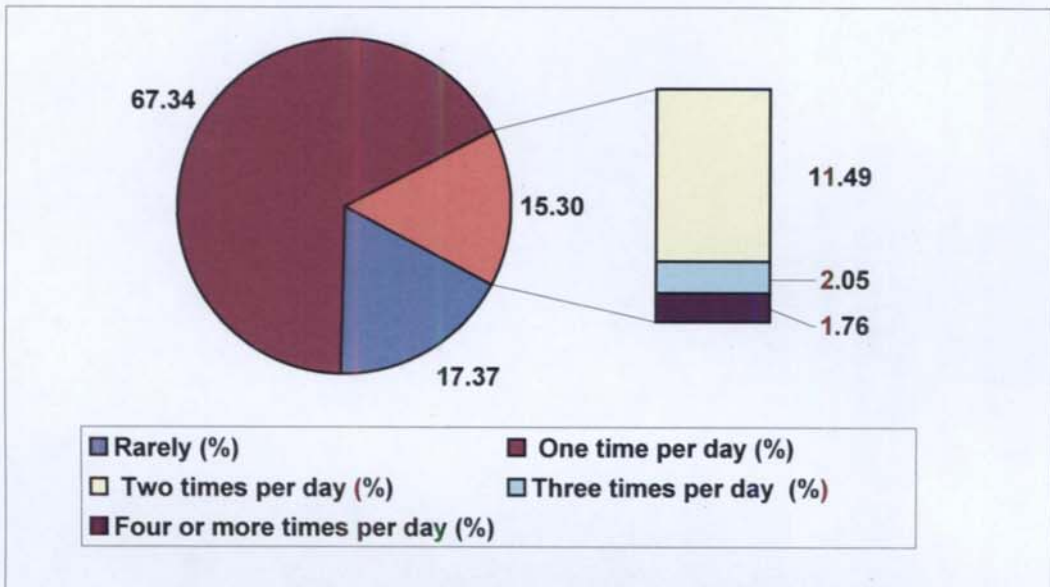


Figure 9 : Q. 8. How many times per day did you usually eat fruits such as ripe bananas, papaya, pineapple, grapes, orange or any other ? (Sex & category wise)

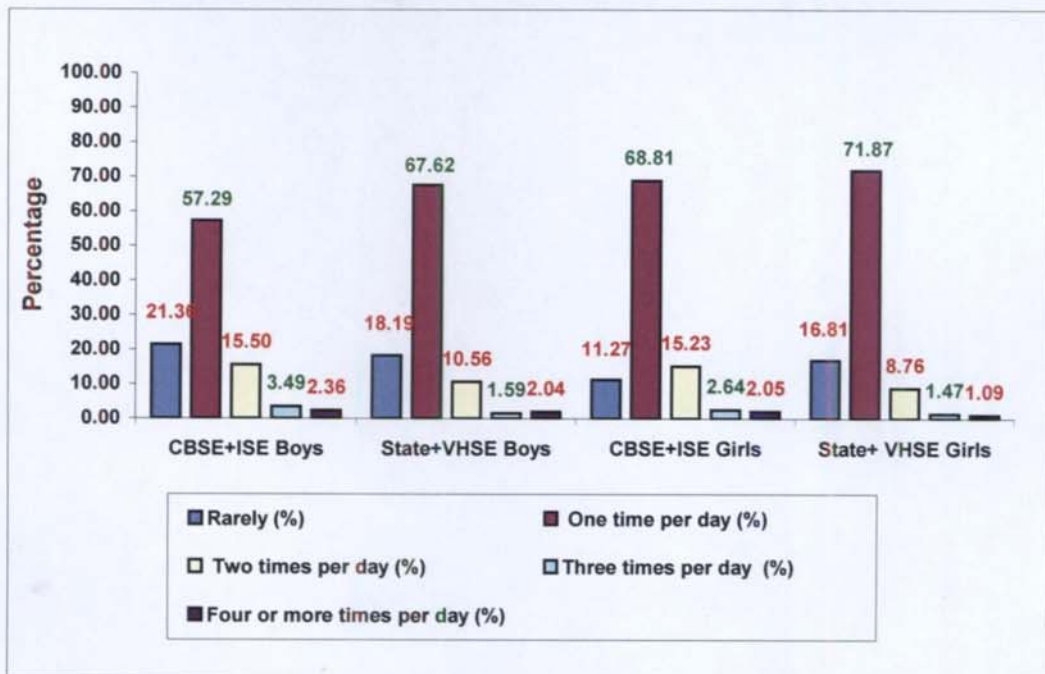


TABLE. 6

Q. 9. How many times per day, did you usually eat vegetables such as ladies finger, pumpkin, drumstick, brinjal, tomato, raw plantain or any other?

	N	CBSE+ ISE Boys (%)	N	State + VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I did not eat vegetables (%)	75	7.70	94	5.98	19	2.78	71	3.86
One time per day (%)	288	29.57	521	33.14	188	27.53	557	30.30
Two times per day (%)	356	36.55	589	37.47	289	42.31	661	35.96
Three times per day (%)	223	22.90	320	20.36	163	23.87	509	27.69
Four or more times per day (%)	32	3.29	48	3.05	24	3.51	40	2.18
Total	974		1572		683		1838	

The results on question no. 9 presented in Table 6 reveals that almost nine out of ten students usually ate vegetables (94.89%), such as ladies finger, pumpkin, drumstick, brinjal, tomato, can plantain one or more times per day preceding the survey. When comparing the frequency of vegetable consumption category wise, it shows that State+VHSE boys consume less vegetable than their counter parts studying in CBSE+ISE schools. The results indicates that 20.36% of the State+VHSE boys ate one time per day, 37.47% two times per day and 30.36% three times per day and 3.05% four times or more per day. At the same time, CBSE+ISE boys ate 29.57% one time per

day, 36.55% two-time per day, 22.90% three times per day and 3.29% four or more times per day.

The girls' results presented in table 6 also shows the same trend as in the case of boys. The 30.30% of the State+VHSE girls consume vegetable one time per day, 35.96% girls two times per day, 27.69% three times per day and 2.18% consumes four or more times per day. At the same time 27.53% CBSE+ISE girls ate vegetable one time per day, 42.31% ate two times per day, 23.87% three times per day and 3.51% ate four or more times per day.

The graphical representation of the responses to question No.9 is presented in Figure.10 and the sex and category wise responses is presented as Figure 11.

Figure. 10 : Q. 9. How many times per day did you usually eat vegetables such as ladies finger, pumpkin, drumstick, brinjal, tomato, raw plantain or any other? (Total (N) = 5067)

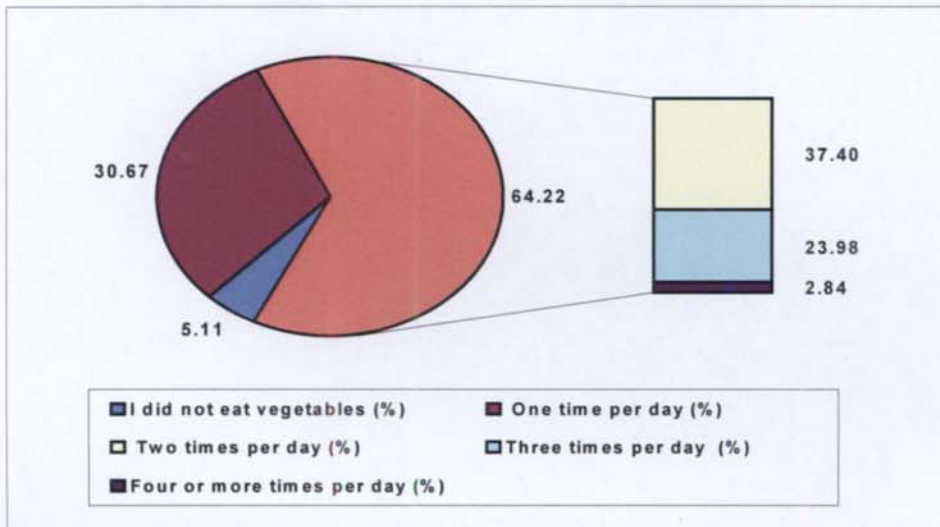
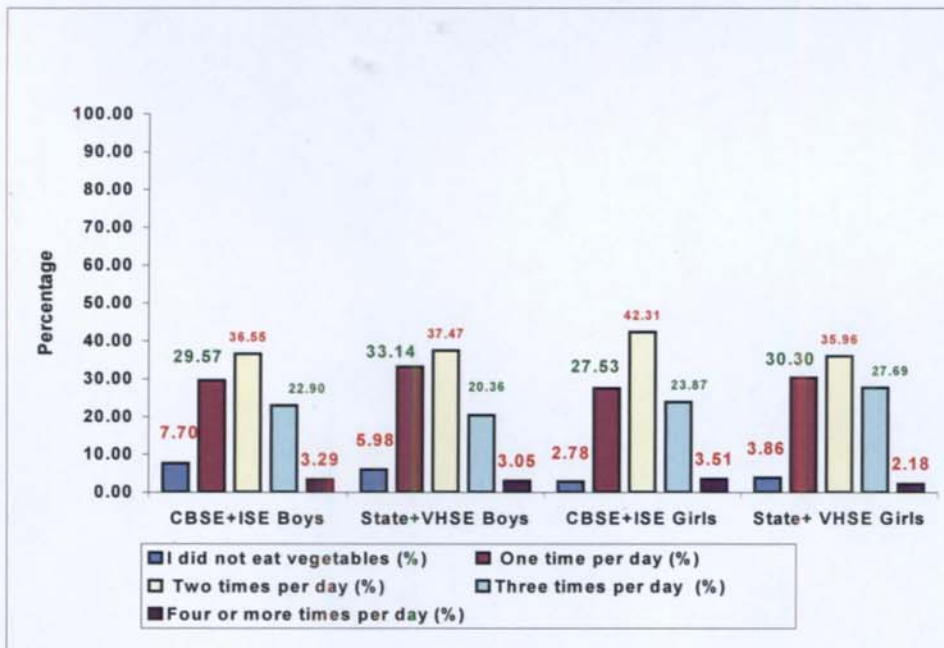


Figure 11 :Q. 9. How many times per day did you usually eat vegetables such as ladies finger, pumpkin, drumstick, brinjal, tomato, raw plantain or any other? (Sex & Category wise)



Hygiene

TABLE. 7

**Q. 10. During the past 7 days,
how did you usually wash your hands before eating at school?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State + VHSE Girls (%)
I do not wash (%)	44	4.52	76	4.83	13	1.90	27	1.47
In a dish of water used by others (%)	43	4.41	69	4.39	26	3.81	86	4.68
In a dish of water used only by me (%)	139	14.27	219	13.93	30	4.39	434	23.61
Under running water or tap (%)	723	74.23	1135	72.20	610	89.31	1267	68.93
Some other way (%)	25	2.57	73	4.64	4	0.59	24	1.31
Total	974		1572		683		1838	

Table 7 indicates that, 3.16% of students have rarely or never washed their hands before eating. On comparing the frequency of washing hands before eating category wise, it is found that, 4.83% State+VHSE boys and 4.52% CBSE+ISE boys have never or rarely do wash their hands before eating. 4.41% CBSE+ISE boys and 4.39% State+VHSE boys do wash hands in a dish of water used by others. At the same time, 14.27% CBSE+ISE boys and 13.93% State+VHSE boys do wash their hands before eating in a dish of water used only by themselves. The majority, 74.23% of

CBSE+ISE boys and 72.20% of State +VHSE boys do wash their hands before eating under running water or tap.

On comparing the frequency of washing hands before eating in girls, it is found that, 1.47% State+VHSE girls and 1.90% CBSE+ISE girls have never or rarely washed their hands before eating. 3.81% CBSE+ISE girls and 4.68% State+VHSE girls do wash hands in a dish of water used by others. At the same time, 4.39% CBSE+ISE girls and 23.61% State+VHSE girls do wash their hands before eating in dish of water used only by themselves. The majority, 89.31% of CBSE+ISE girls and 68.93% of State+VHSE girls do wash their hands before eating under running water or tap.

The graphical representation to the responses to question No.10 is presented in Figure.12 and the sex and category wise responses are presented as Figure 13.

Figure 12 : Q. 10. During the past 7 days, how did you usually wash your hands before eating at school ? (Total (N) = 5067)

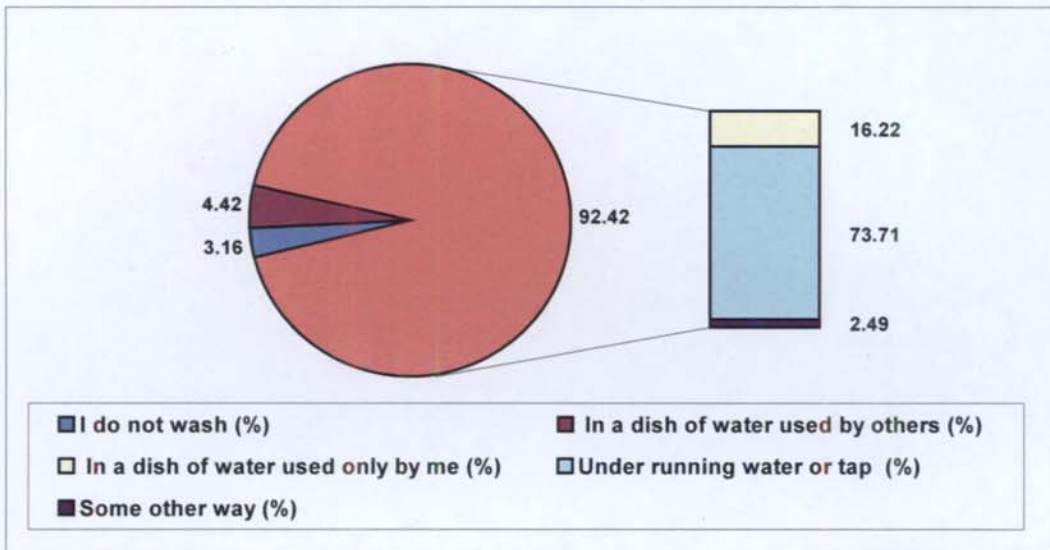


Figure 13 : Q. 10. During the past 7 days, how did you usually wash your hands before eating at school? (Sex & Category wise)

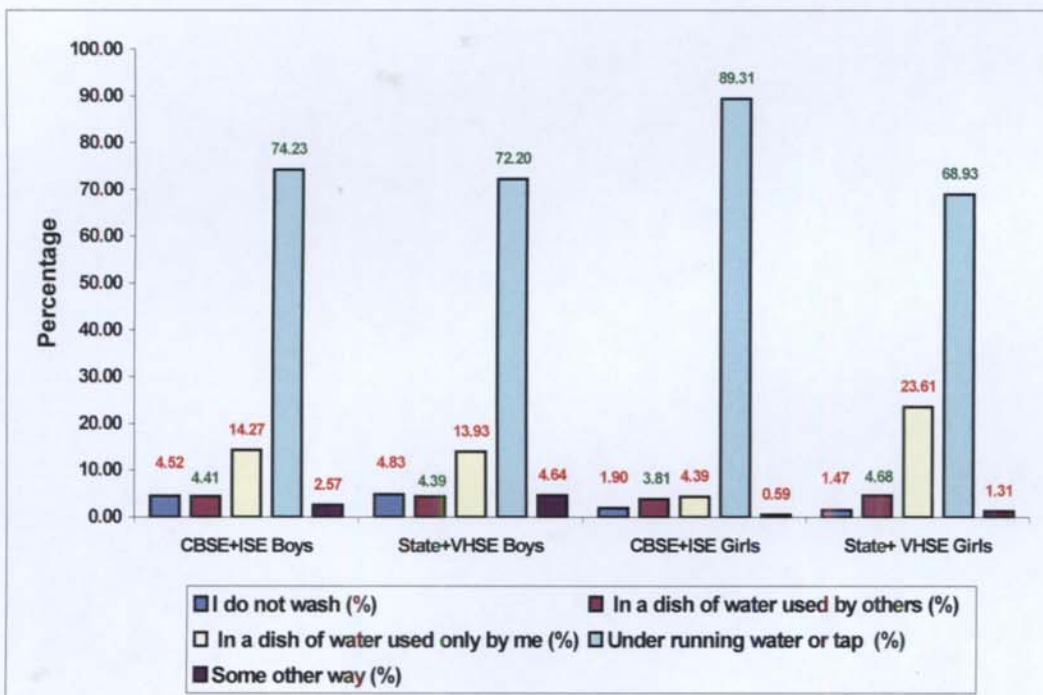


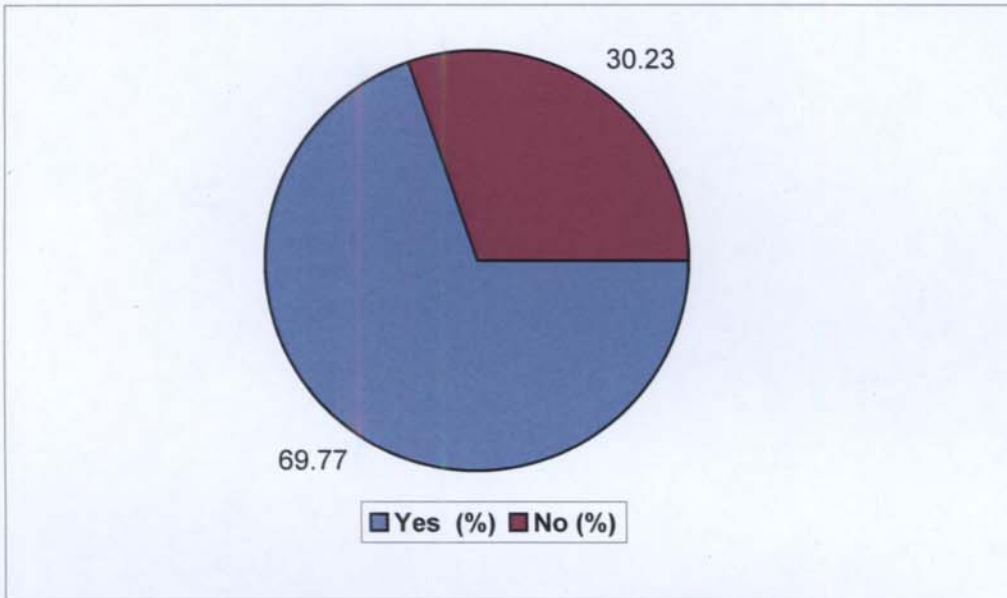
TABLE. 8
Q. 11 Are the toilets or latrines safe at school?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	704	72.28	822	52.29	567	83.02	1442	78.45
No (%)	270	27.72	750	47.71	116	16.98	396	21.55
Total	974		1572		683		1838	

Overall, 69.77% of the students believe that, the toilets or latrines in their schools are safe. The category wise analysis of the data shows that, 27.72% of CBSE+ISE boys and majority of State+VHSE boys (47.71%) have different opinion. When comparing the opinion of girls, majority of CBSE+ISE girls (83.02%) and State+VHSE girls (78.45%) believe that, the toilets or latrines in their schools are safe (Table 8). Only 16.98% of CBSE+ISE girls and 21.55% of State+VHSE girls believe that, the toilets or latrines in their schools are not safe.

The graphical representation to the responses to question No.11 is presented in Figure.14 and the sex and category wise responses are presented as Figure 15.

**Figure 14 : Q. 11 Are the toilets or latrines safe at school?
(Total (N) = 5067)**



**Figure 15 : Q. 11 Are the toilets or latrines safe at school?
(Sex & category wise)**

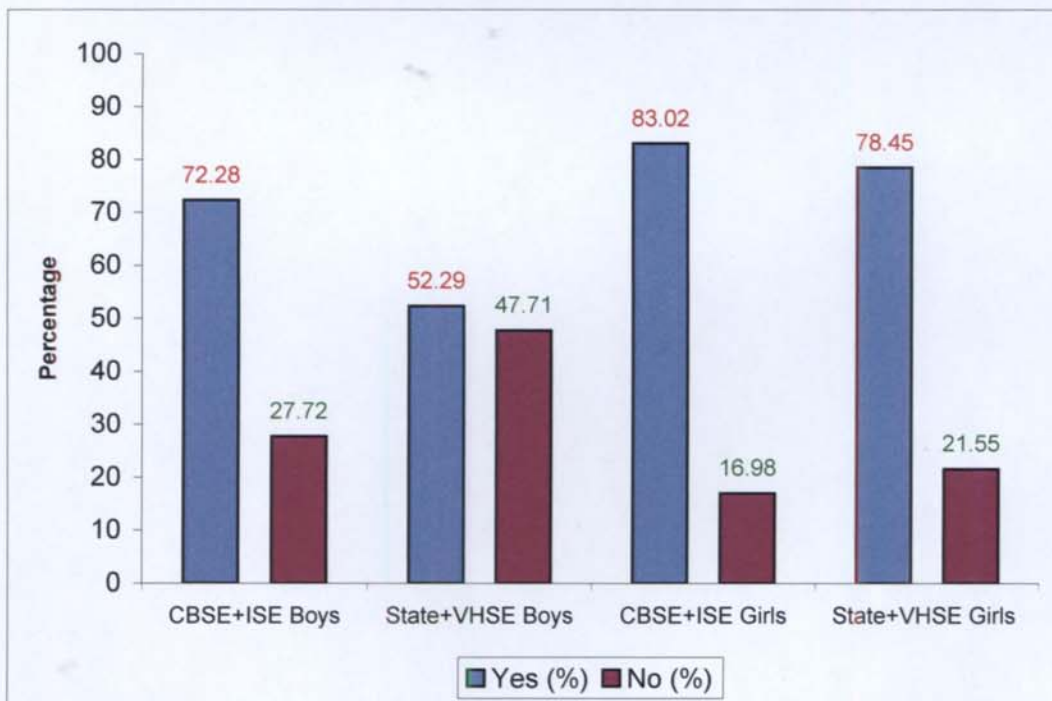


TABLE. 9

Q. 12 Are the toilets or latrines clean at school?

	N	CBSE + ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	614	63.04	689	43.83	454	66.47	1177	64.04
No (%)	360	36.96	883	56.17	229	33.53	661	35.96
Total	974		1572		683		1838	

Overall, 42.10% of the students believe that, the toilets or latrines in their schools are not clean. The category wise analysis of the data shows that, 63.04% of CBSE+ISE boys and 43.83% of State+VHSE boys have difference in opinion. When comparing the opinion, a majority of CBSE+ISE girls (66.47%) and State+VHSE girls (64.04%) believe that, the toilets or latrines in their schools are clean (Table 9). Only 33.53% of CBSE+ISE girls and 35.96% of State+VHSE girls believe that, the toilets or latrines in their schools are not clean.

The graphical representation to the responses to question No.12 is presented in Figure.16 and the sex and category wise responses are presented as Figure 17.

Figure 16 : Q. 12 Are the toilets or latrines clean at school?
(Total (N) = 5067)

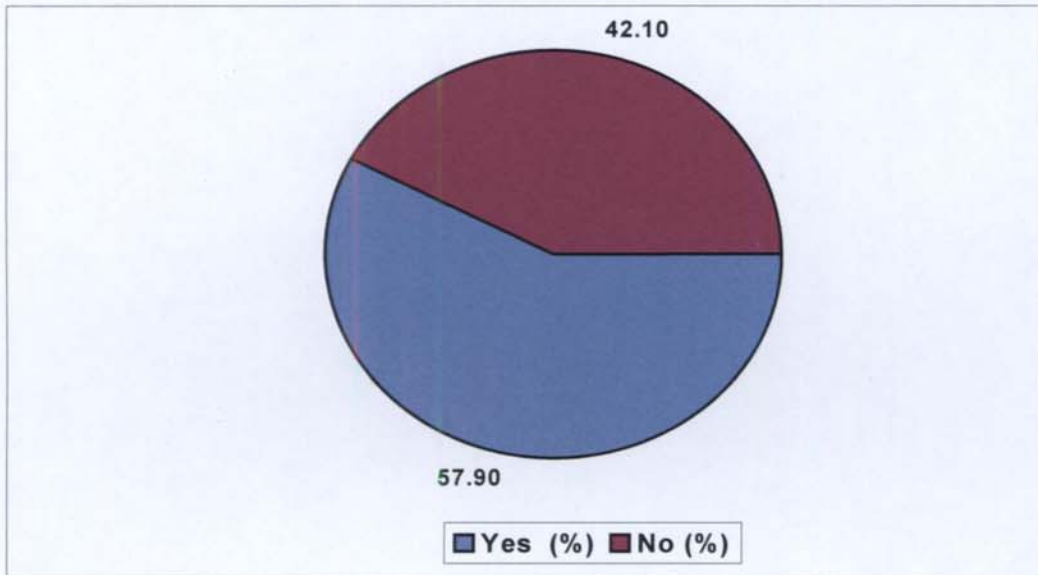


Figure 17 : Q. 12 Are the toilets or latrines clean at school?
(Sex & Category wise)

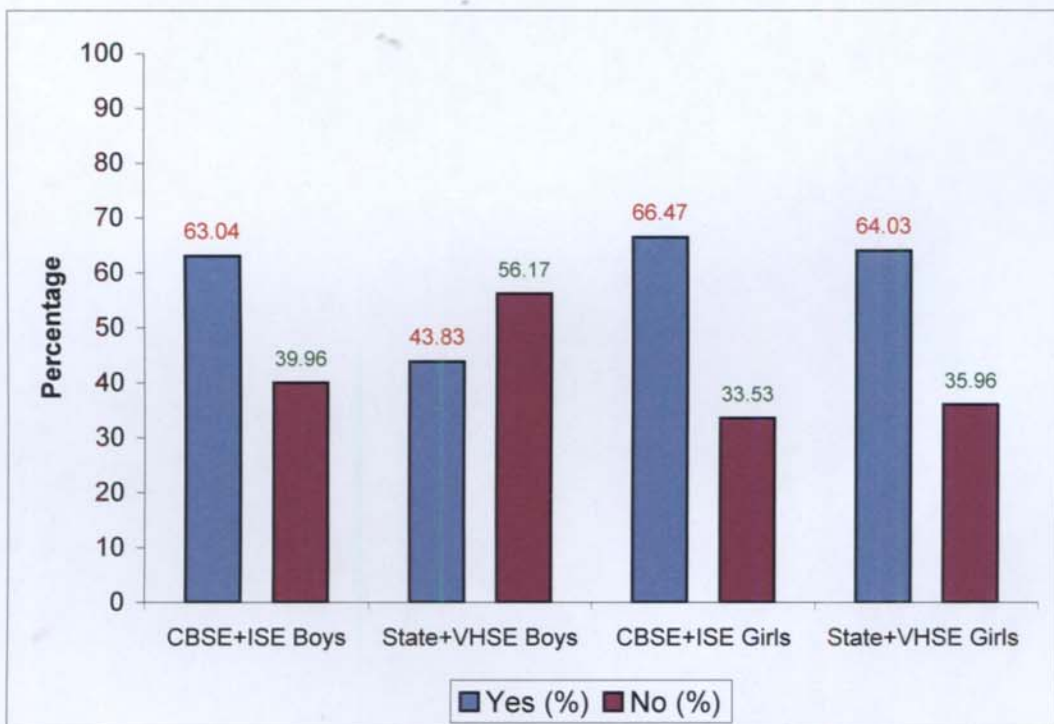


TABLE. 10

**Q. 13. How often did you use soap
when washing your hands after using toilet or latrine?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Never (%)	59	6.06	103	6.55	21	3.07	96	5.22
Rarely (%)	199	20.43	318	20.23	96	14.06	210	11.43
Some times (%)	353	36.24	580	36.90	255	37.34	701	38.14
Most of the time (%)	281	28.85	472	30.03	249	36.46	698	37.98
Always (%)	82	8.42	99	6.30	62	9.08	133	7.24
Total	974		1572		683		1838	

Overall in the whole of the state, 5.51% of students never use soap for washing their hands after using toilet or latrine. When comparing the frequency of boys using soap after using toilet or latrine shows that, 20.23% State+VHSE boys and 20.43% CBSE+ISE boys have rarely used soap for washing their hands after using toilets or latrine. 36.24% CBSE+ISE boys and 36.90% State+VHSE boys use soap some times after using toilet or latrine. At the same time, 28.85% CBSE+ISE boys and 30.03% State+VHSE boys were found to be using soap for washing their hands most of the time after using toilets or latrine. Besides, only 8.42% of CBSE+ISE boys and 6.30% of State+VHSE boys use soap always after using toilet or latrine (Table. 10).

When, comparing the frequency of girls using soap for washing their hand after using toilet or latrine, 5.22% State+VHSE girls and 3.07% CBSE+ISE girls have never used soap for washing their hands after using toilets or latrine. 14.06% CBSE+ISE girls and 11.43% State+VHSE girls states that they have rarely used soap for washing their hands after using toilets or latrine. At the same time, 37.34% CBSE+ISE girls and 38.14% State+VHSE girls used soap sometimes after using toilets or latrine. apart from that, 36.46% CBSE+ISE girls and 37.98% State+VHSE girls have used soap for washing their hands most of the times after using toilets or latrine. Besides, only, 9.08% of CBSE+ISE girls and 7.24% of CBSE+VHSE girls do use soap always for washing their hands after using toilet or latrine (Table.10).

The graphical representation to the responses to question No.13 is presented in Figure.18 and the sex and category wise responses are presented as Figure 19.

Figure 18 : Q. 13. How often did you use soap when washing your hands after using toilet or latrine? (Total (N) = 5067)

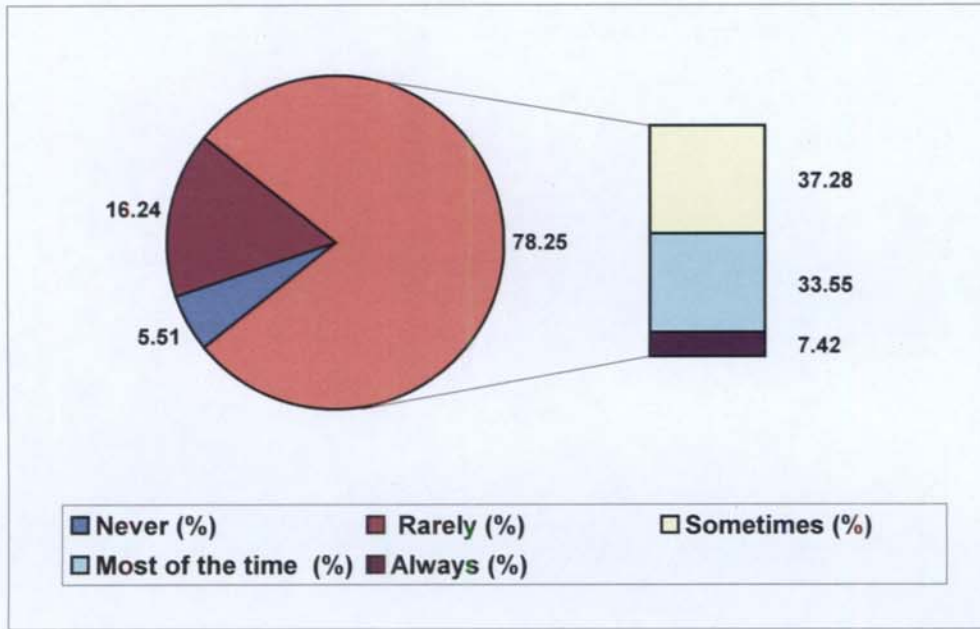


Figure 19 : Q. 13. How often did you use soap when washing your hands after using toilet or latrine? (Sex & category wise)

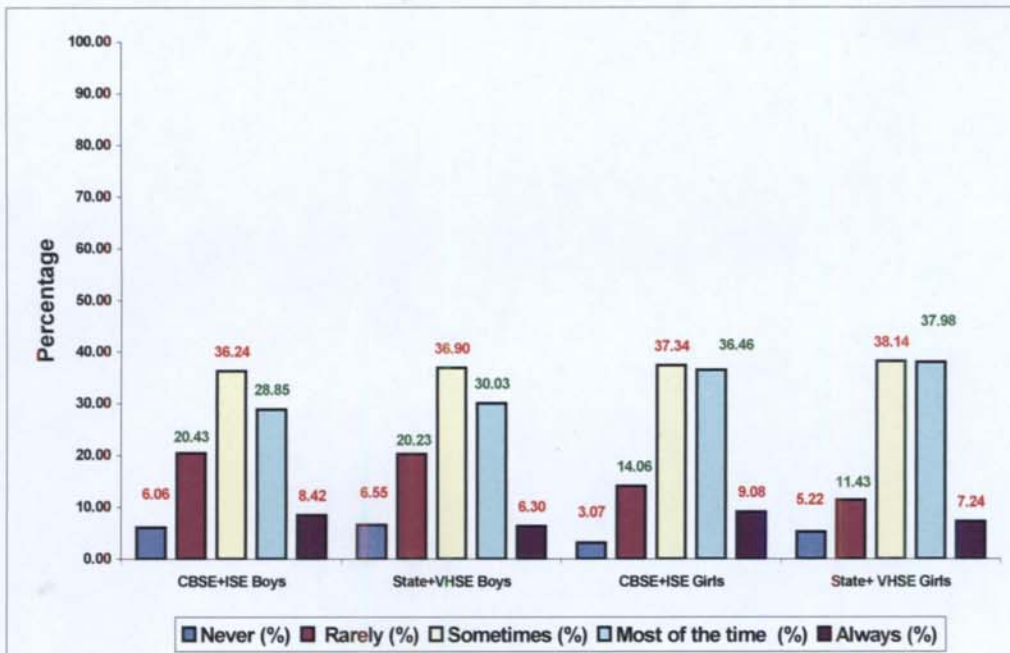


TABLE. 11

**Q. 14. During the past 12 months
how many times were you in a physical fight?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 time (%)	376	38.60	745	47.39	435	63.69	1373	74.70
1 times (%)	249	25.56	395	25.13	96	14.06	196	10.66
2 to 5 times (%)	236	24.23	291	18.51	121	17.72	161	8.76
6 to 9 times (%)	62	6.37	78	4.96	15	2.20	75	4.08
10 or more times (%)	51	5.24	63	4.01	16	2.34	33	1.80
Total	974		1572		683		1838	

Overall, 42.19% of students have indulged in physical fight one or more times during the 12 months preceding the survey. To be more precise, 18.47% students had been in a fight one time, 15.97% in two times, 4.54% in six to nine times and 3.22% in ten or more times during the last 12 months preceding the survey.

Overall, the prevalence of having been in a physical fight was higher among boys (CBSE+ISE = 61.4%, State+VHSE= 52.61%) than girls (CBSE+ISE = 36.31%, State+VHSE= 25.3%) students. Besides, CBSE+ISE boys and girls had shown more prevalence to indulge in physical fights than State+VHSE boys and girls.

The graphical representation to the responses to question No.14 is presented in Figure.20 and the sex and category wise responses are presented as Figure 21.

Figure 20 : Q. 14. During the past 12 months how many times were you in a physical fight ? (Total (N) = 5067)

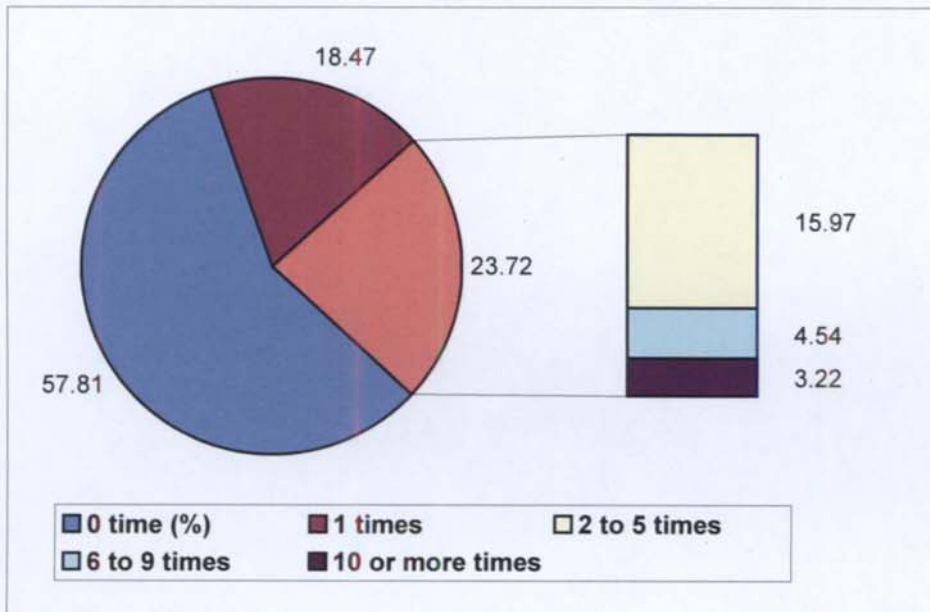


Figure 21 : Q. 14. During the past 12 months how many times were you in a physical fight ? (Sex & Category wise)

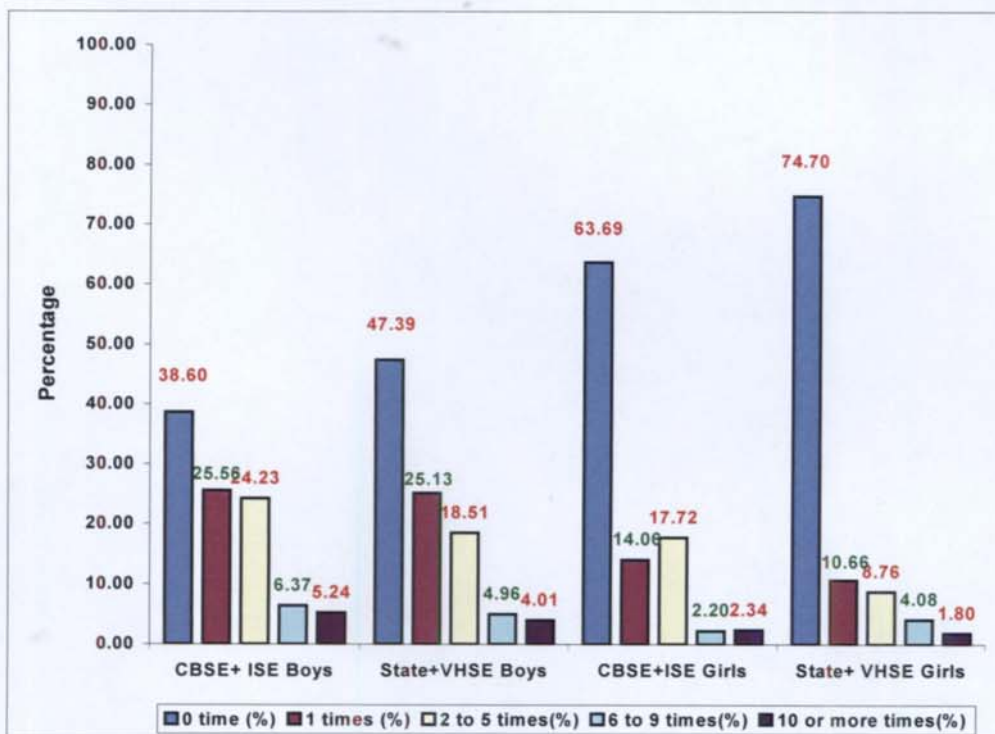


TABLE. 12

Q. 15. During the past 30 days how often, have you felt lonely?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Never (%)	303	31.11	453	28.82	175	25.62	572	31.12
Rarely (%)	356	36.55	616	39.19	251	36.75	692	37.65
Some times (%)	227	23.31	361	22.96	200	29.28	393	21.38
Most of the time (%)	66	6.78	115	7.32	47	6.88	149	8.11
Always (%)	22	2.26	27	1.72	10	1.46	32	1.74
Total	974		1572		683		1838	

Overall, 32.54% of students had felt lonely during the past 30 days preceding the survey (Some times = 23.31%, Most of the time = 7.445 and Always = 1.8%).

Overall, the prevalence of feeling lonely was higher among State+VHSE boys 71.18% (including rarely= 39.19%) than CBSE+ISE boys 68.89% (including rarely 36.55%) students. At the same time among girls, the prevalence of feeling lonely was higher among CBSE + ISE girls (37.62%) than State + VHSE girls (31.23%) students.

The graphical representation to the responses to question No.15 is presented in Figure.22 and the sex and category wise responses are presented as Figure 23.

Figure 22 : Q. 15. During the past 30 days how often have you felt lonely? (Total (N) = 5067)

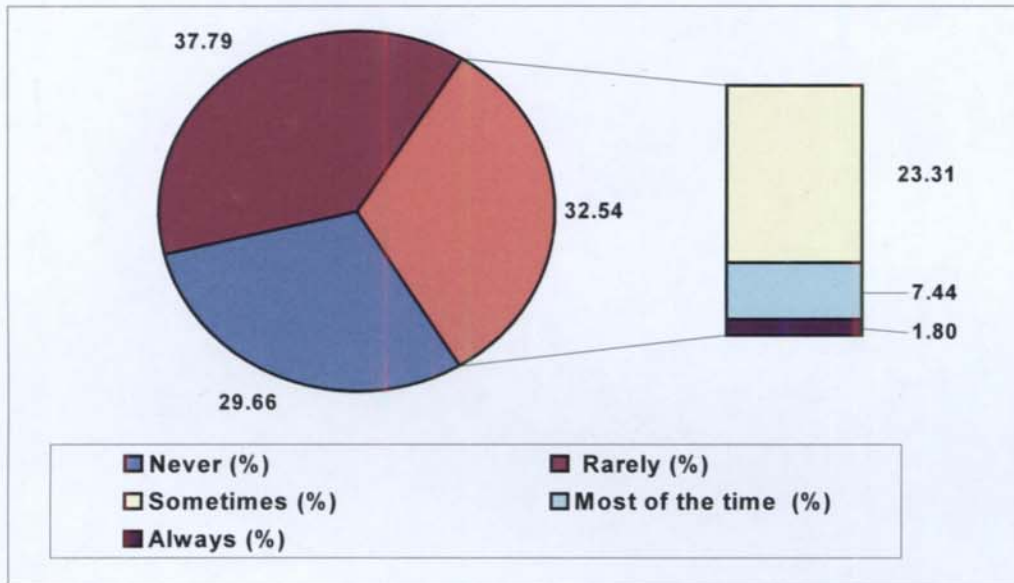


Figure 23 : Q. 15. During the past 30 days how often have you felt lonely? (Sex & Category wise)

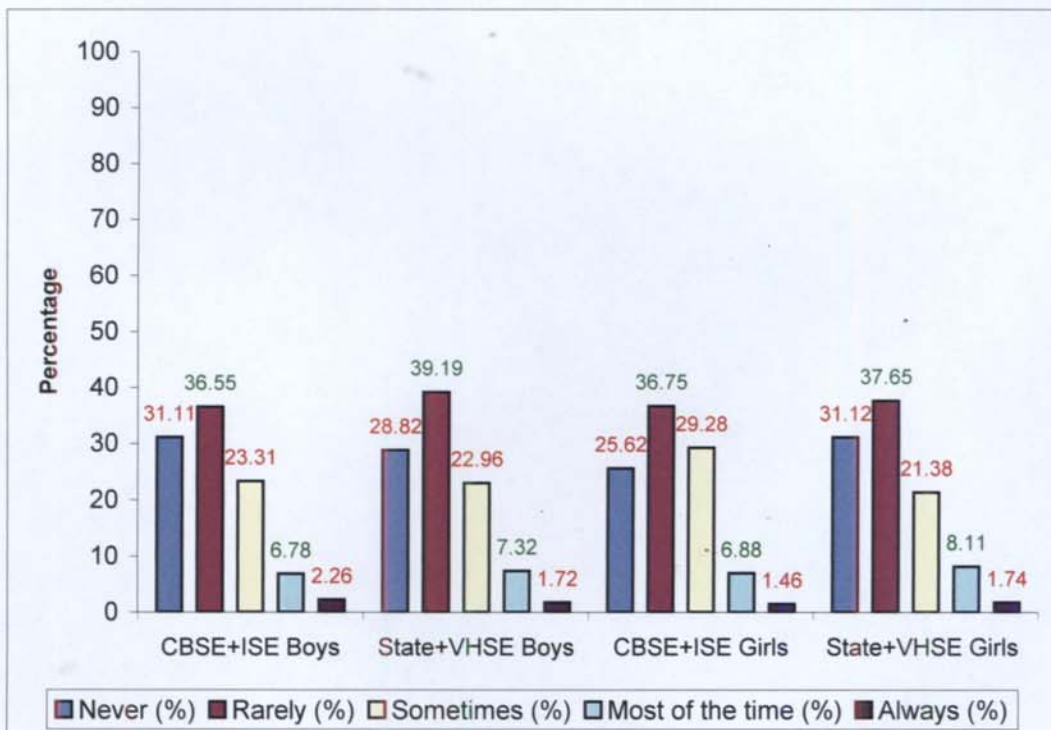


TABLE. 13

Q. 16 During the past 12 months, did you ever seriously consider attempting suicide?

	N	CBSE + ISE Boys (%)	N	State + VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State + VHSE Girls (%)
Yes (%)	116	11.91	219	13.93	77	11.27	273	14.85
No (%)	858	88.09	1353	86.07	606	88.73	1565	85.15
Total	974		1572		683		1838	

Overall, 13.52% of the students had seriously considered attempting suicide during the past 12 months preceding the survey. The category wise analysis of the data shows that, 11.91% of CBSE+ISE boys and 13.93% of State+VHSE boys have seriously considered attempting suicide during the past 12 months preceding the survey.

On comparison of the data collected on girls, 14.85% State+VHSE girls seriously considered attempting suicide during the past 12 months preceding the survey and this is found to be lower than the 11.27% of CBSE+ISE girls (Table 13).

The graphical representation to the responses to question No.16 is presented in Figure.24 and the sex and category wise responses are presented as Figure 25.

Figure 24 : Q. 16 During the past 12 months, did you ever seriously consider attempting suicide? (Total (N) = 5067)

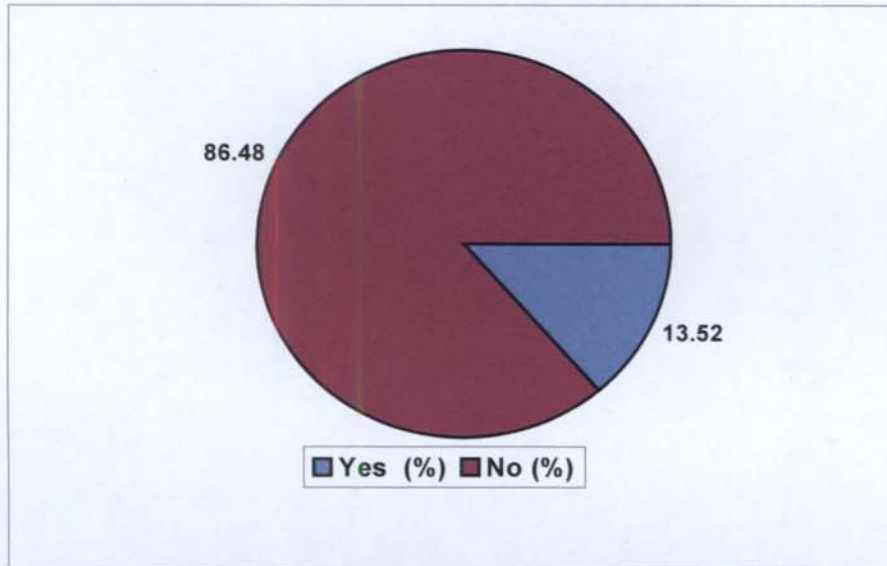


Figure 25 : Q. 16 During the past 12 months, did you ever seriously consider attempting suicide? (Sex & Category wise)

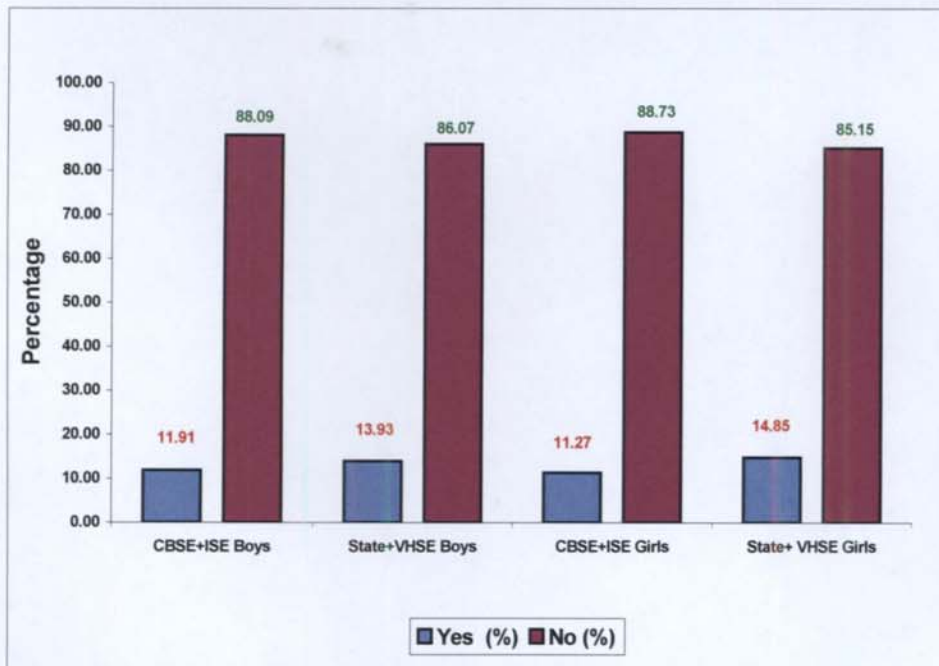


TABLE. 14
Q. 17 How many close friends do you have?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 (%)	129	13.24	127	8.08	79	11.57	223	12.13
1 (%)	109	11.19	179	11.39	81	11.86	326	17.74
2 (%)	159	16.32	195	12.40	115	16.84	318	17.30
3 or more (%)	577	59.24	1071	68.13	408	59.74	971	52.83
Total	974		1572		683		1838	

Overall, 11.01% of students do not have any close friends. When categorically analysing, only 8.08% of State+VHSE boys do not have any close friends, that is lower than the 13.24% of CBSE+ISE boys. In case of girls, this phenomenon is reversing i.e. 12.13% of State+VHSE girls do not have any close friends and that was found to be higher than the 11.57% of CBSE+ISE girls.

68.13%, of State+ VHSE, boys were having three or more friends, which was higher than the 59.24% of CBSE+ISE boys but in the case of girls the phenomenon is reversing, i.e CBSE+ISE girls (59.74%) have more than three or more friends when compared to the State+VHSE girls (52.83%).

The graphical representation to the responses to question No.17 is presented in Figure.26 and the sex and category wise responses are presented as Figure 27.

Figure 26 : Q. 17 How many close friends do you have ?
 (Total (N) = 5067)

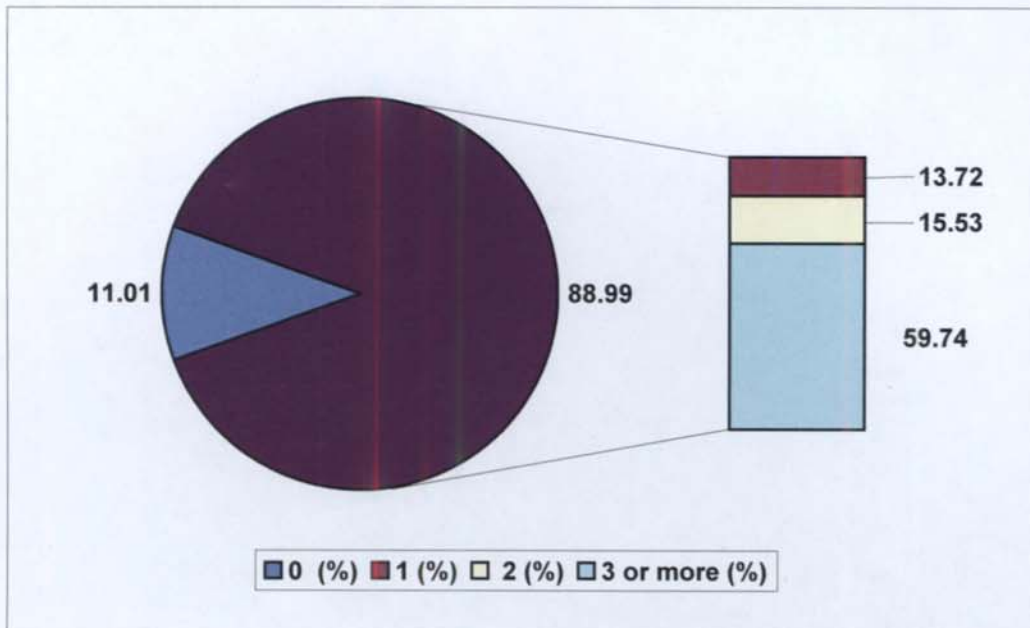


Figure 27 : Q. 17 How many close friends do you have?
 (Sex & category wise)

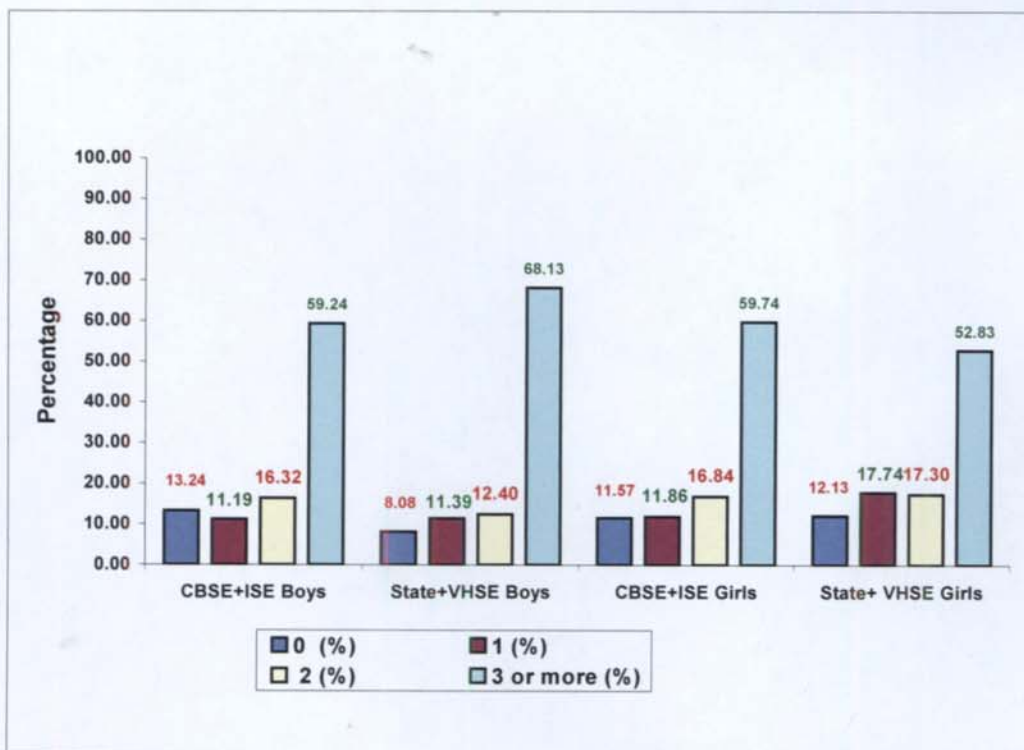


TABLE. 15
Q.18 How old were you when you first tried a cigarette?

	N	CBSE+ ISE Boys (%)	N	State + VHSE Boys (%)	N	CBSE + ISE Girls (%)	N	State+ VHSE Girls (%)
I have never smoked cigarettes (%)	795	81.62	1126	71.63	656	96.05	1761	95.81
10 year old or younger (%)	44	4.52	95	6.04	9	1.32	37	2.01
11 to 13 years old (%)	52	5.34	72	4.58	4	0.59	10	0.54
14 to 16 years old (%)	70	7.19	222	14.12	13	1.90	28	1.52
17 years old or elder (%)	13	1.33	57	3.63	1	0.15	2	0.11
Total	974		1572		683		1838	

Overall, one in ten (10.74%) students who currently smoke cigarettes admitted to have tried their first cigarette at age of 11 or elder, 3.65% of students at the age of 10 years or younger tried first cigarette. 81.62% of the CBSE+ISE boys never tried a cigarette compared to lower percentage of the 71.63% of State+VHSE boys' students.

In the case of girls, 96.05% of CBSE+ISE girls never tried a cigarette compared to the 95.81% of the State+VHSE girls (Table 15).

The graphical representation to the responses to question No.18 is presented in Figure.28 and the sex and category wise responses are presented as Figure 29.

Figure 28 : Q. 18. How old were you when you first tried a cigarette?
(Total (N) - 5067)

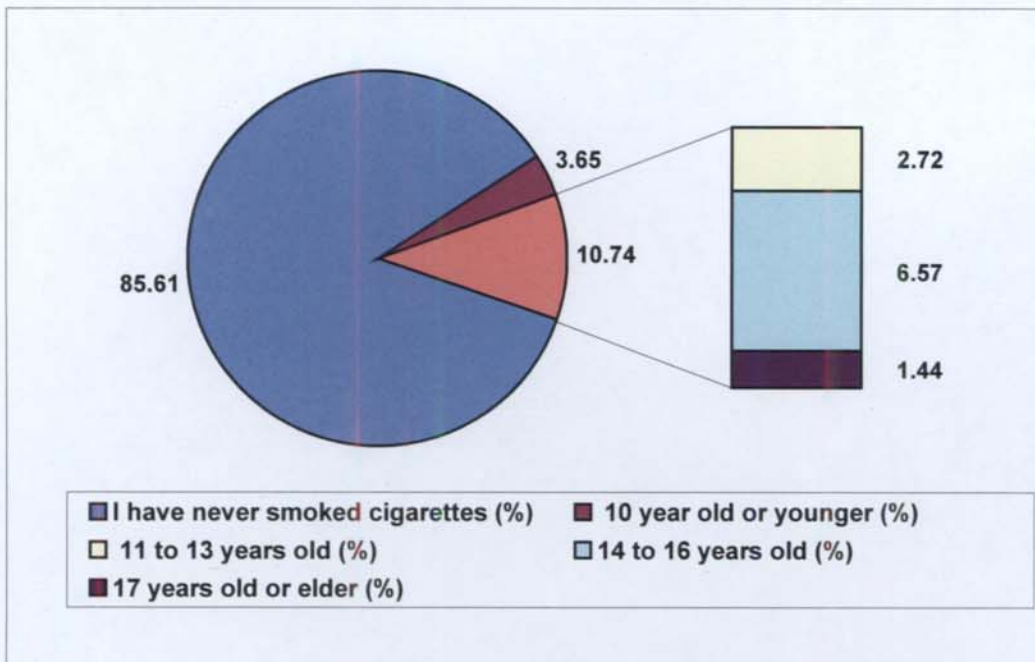


Figure 29 : Q.18. How old were you when you first tried a cigarette?
(Sex & Category wise)

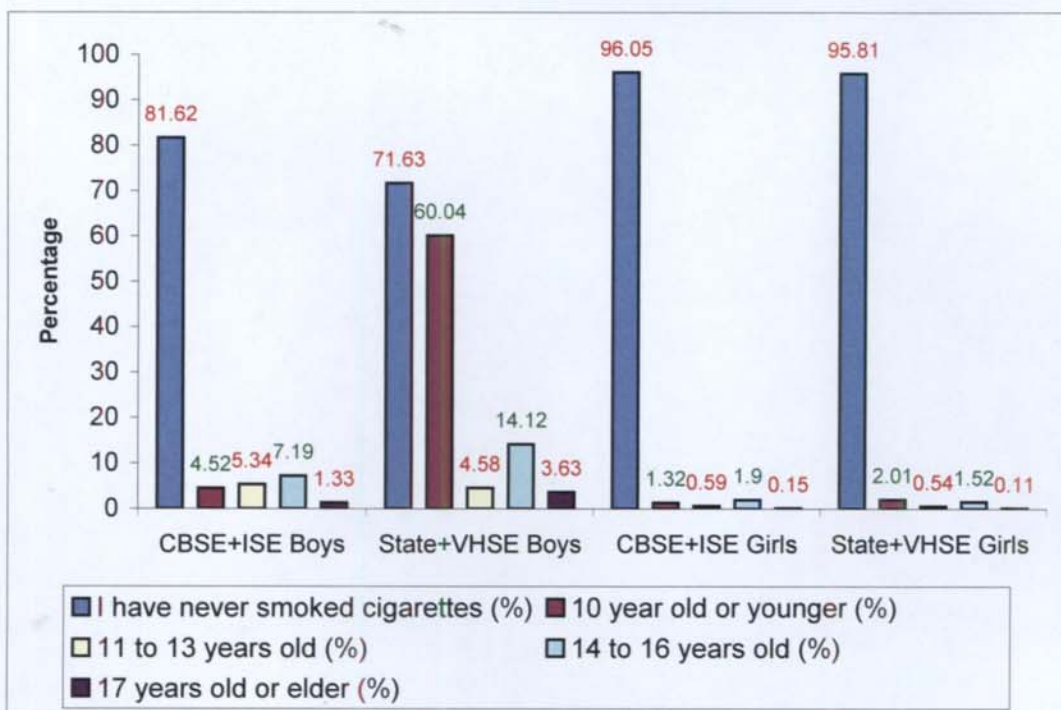


TABLE. 16

**Q. 19 During the past 30 days
how many days have you smoked cigarettes?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 Days (%)	901	92.51	1363	86.70	676	98.98	1815	98.75
1 or 2 Days (%)	41	4.21	105	6.68	4	0.59	12	0.65
3 to 15 Days (%)	16	1.64	55	3.50	1	0.15	3	0.16
16 to 29 Days (%)	11	1.13	26	1.65	2	0.29	8	0.44
All Days (%)	5	0.51	23	1.46	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, 6.16% of students smoked cigarettes during on more than 1 of the 30 days preceding the survey (i.e., current frequent cigarette use) and 2.96% students had smoked cigarettes on more than 16 of the 30 days (Table 16). The prevalence of current frequent cigarette use was higher among State+VHSE boys (13.29%) than CBSE+ISE boys (7.49%) students. Overall, the prevalence of current frequent tobacco use was higher among State+VHSE girls (1.25%) than CBSE+ISE girls (1.02.).

The graphical representation to the responses to question No.19 is presented in Figure.30 and the sex and category wise responses are presented as Figure 31.

Figure 30 : Q. 19. During the past 30 days how many days have you smoked cigarettes ? (Total (N) = 5067)

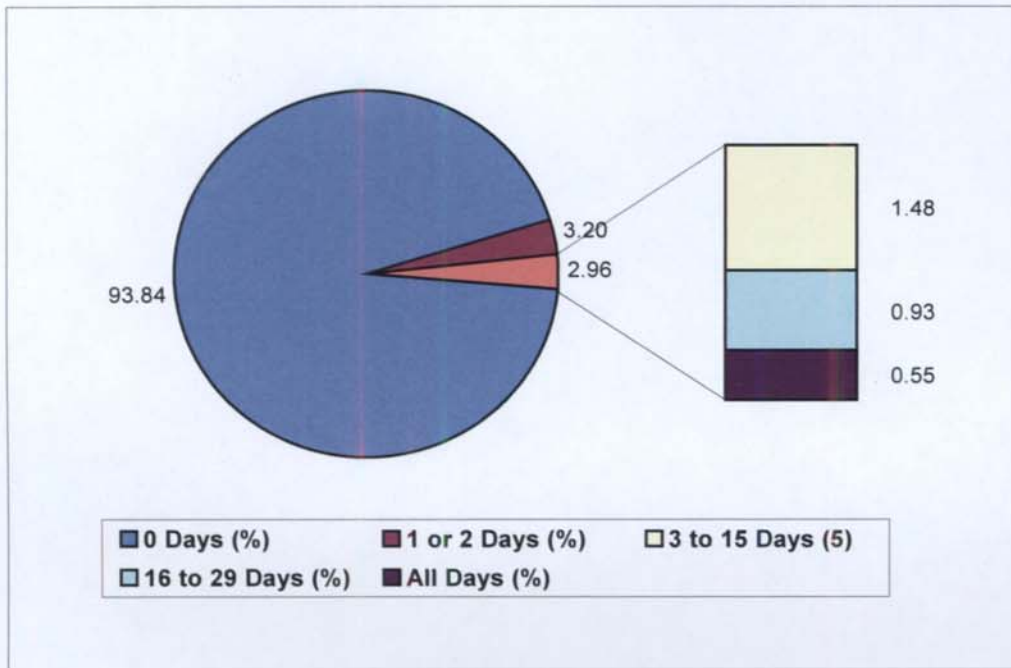


Figure 31 : Q. 19. During the past 30 days how many days have you smoked cigarettes ? (Sex & category wise)

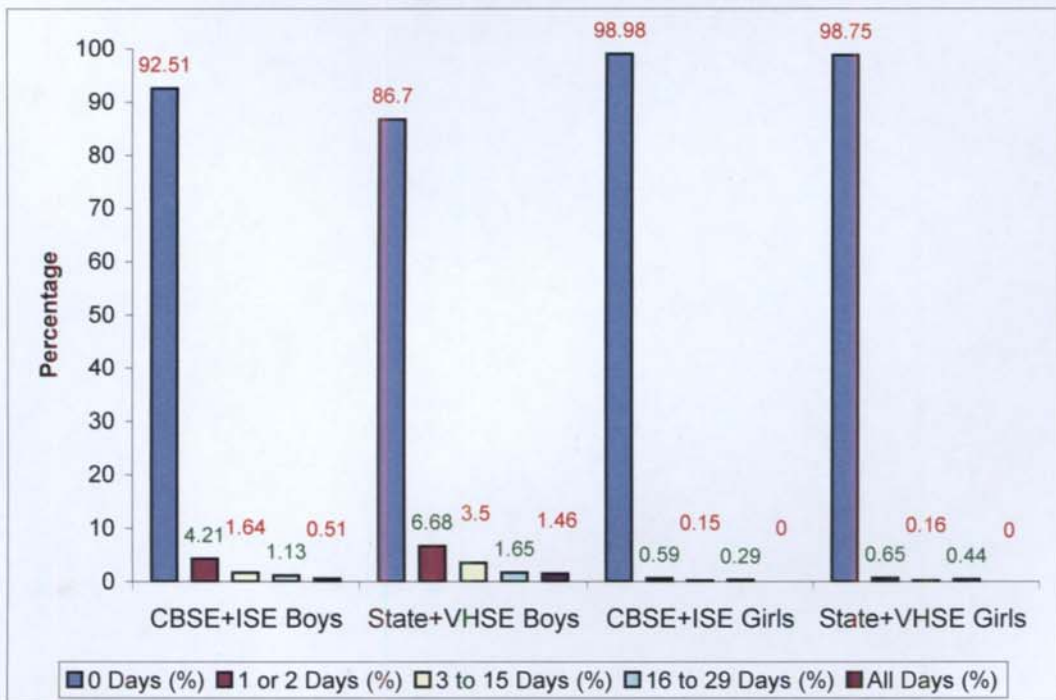


TABLE. 17

**Q. 20. During the past
30 days how many days have you used any
other form of tobacco such as gudka, hans, panparag?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 Days (%)	918	94.25	1404	89.31	677	99.12	1820	99.02
1 or 2 Days (%)	33	3.39	95	6.04	6	0.88	13	0.71
3 to 15 Days (%)	9	0.92	34	2.16	0	0.00	1	0.05
16 to 29 Days (%)	8	0.82	17	1.08	0	0.00	4	0.22
All Days (%)	6	0.62	22	1.40	0	0.00	0	0.00
Total	974		1572		683		1838	

Statewide, 4.89% of the total sample had used any other form of tobacco on one or more of the past 30 days preceding the survey. The State+VHSE boys (10.69%) were found to be more frequent users of any other form of tobacco than CBSE+ISE boys (5.75%).

At the same time, only 0.87% of CBSE + ISE girls, do use any other tobacco product compared to the 0.98% of State+VHSE girls.

The graphical representation to the responses to question No.20 is presented in Figure.32 and the sex and category wise responses are presented as Figure 33.

Figure 32 : Q. 20. During the past 30 days how many days have you used any other form of tobacco such as gudka, hans, panparag ? (Total (N) = 5067)

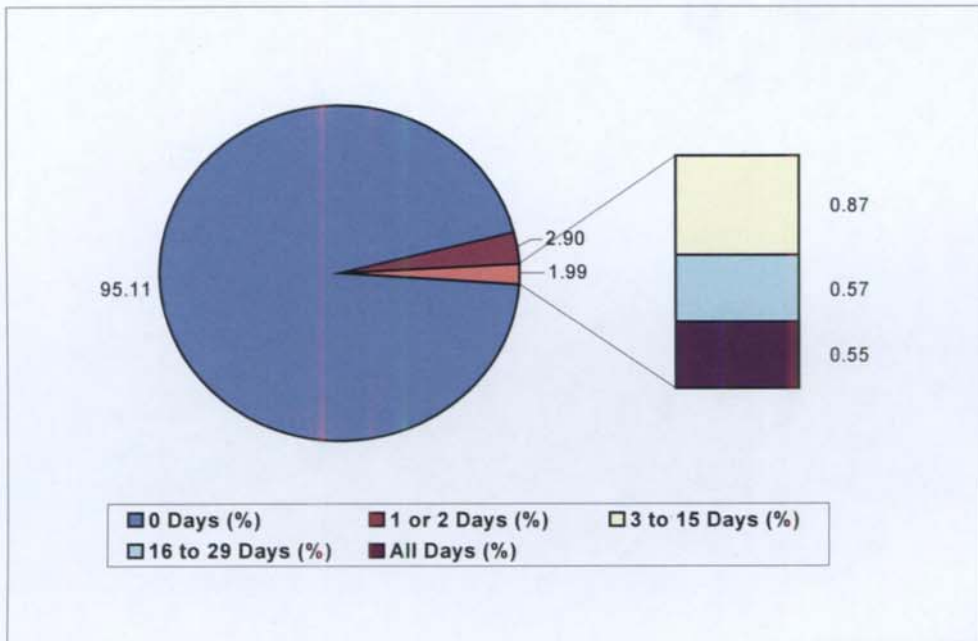


Figure 33 : Q. 20. During the past 30 days how many days have you used any other form of tobacco such as gudka, hans, panparag ? (Sex & Category wise)

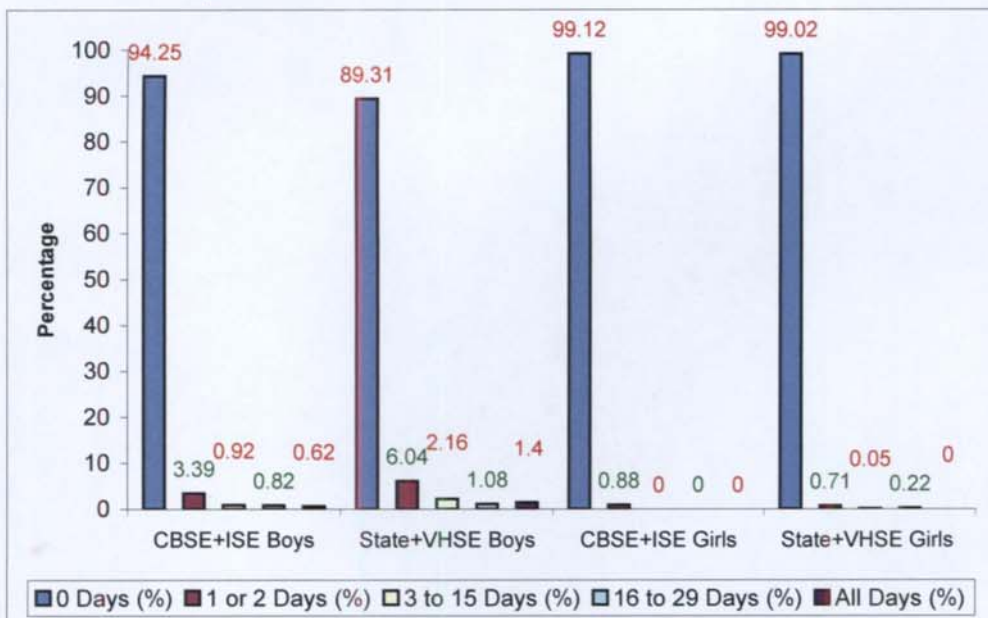


TABLE. 18

Q. 21 During the past 12 months have you ever tried to stop smoking cigarettes?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I have never smoked cigarettes (%)	901	92.51	1363	86.70	676	98.98	1815	98.75
I did not smoke cigarette during the past 12 months (%)	2	0.21	47	2.99	0	0.00	7	0.38
Yes (%)	48	4.93	115	7.32	2	0.29	2	0.11
No (%)	24	2.46	47	2.99	5	0.73	14	0.76
Total	975		1572		683		1838	

Overall, 3.30% of the total sample tried to stop smoking cigarettes. Category wise, 7.32% of State+VHSE boys tried to stop smoking while only 4.93% of CBSE+ISE boys students tried to quit smoking during the past 12 months. at the same time, among girls 0.29% of CBSE+ISE girls tried and 0.11% of State+VHSE girls tried to quit smoking during the past 12 months(Table. 18).

The graphical representation to the responses to question No.21 is presented in Figure.34 and the sex and category wise responses are presented as Figure 35.

Figure 34: Q. 21 During the past 12 months have you ever tried to stop smoking cigarettes ? (Total (N) = 5067)

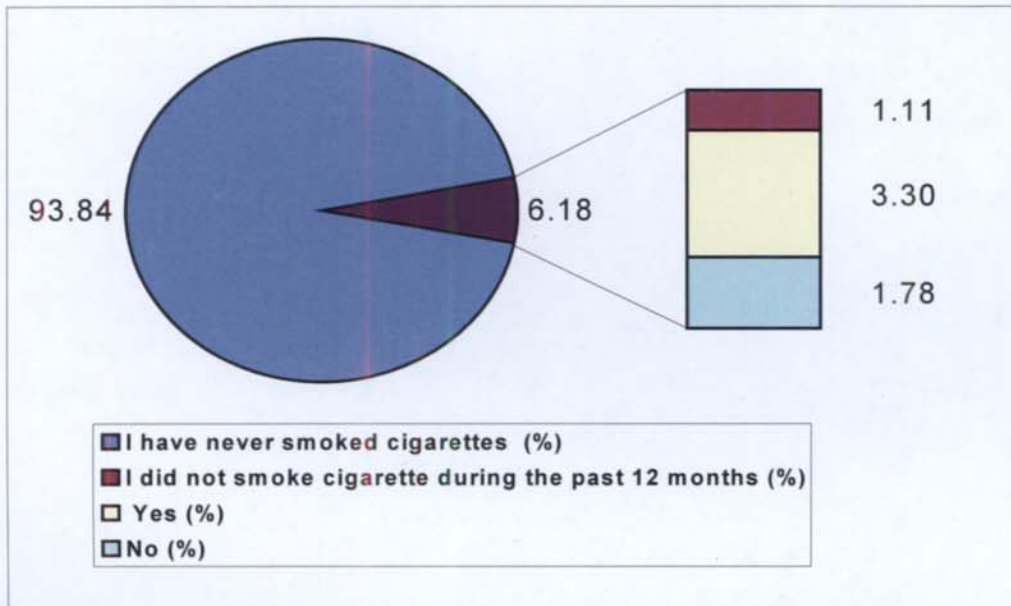


Figure 35 : Q. 21 During the past 12 months have you ever tried to stop smoking cigarettes ? (Sex & category wise)

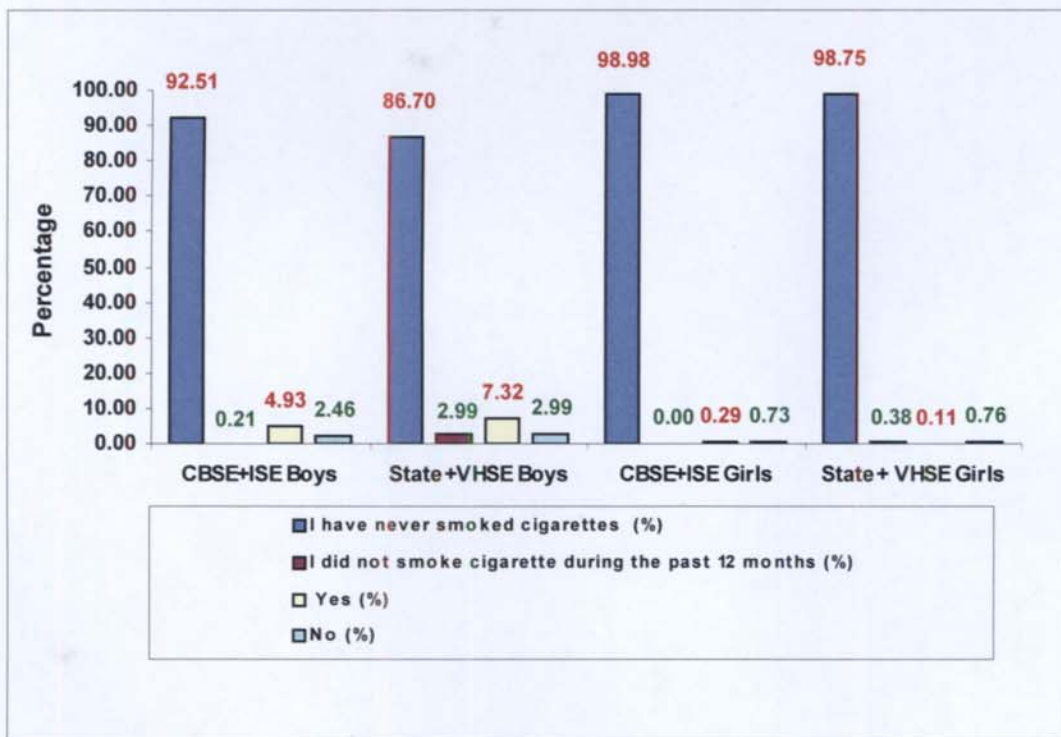


TABLE. 19
Q. 22 During the past 30 days
how many cigarettes have you smoked daily?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I did not smoke cigarette (%)	901	92.51	1363	86.70	676	98.98	1815	98.75
1 or 2 numbers (%)	52	5.34	138	8.78	7	1.02	16	0.87
3 to 15 numbers (%)	11	1.13	43	2.74	0	0.00	4	0.22
16 to 29 numbers (%)	2	0.21	13	0.83	0	0.00	2	0.11
30 or more (%)	8	0.82	15	0.95	0	0.00	1	0.05
Total	974		1572		683		1838	

Among the total sample selected for this study, 6.16% of students state wide were found to be current cigarette users, 1.95% of students have smoked ≥ 3 or more cigarettes/day, during the 30 past days preceding the survey (Table 19). Category wise, the prevalence of having smoked ≥ 3 or more cigarettes/day was higher among State+VHSE boys (4.52%) than CBSE+ISE boys (2.16%) students. At the same time among girls, 0% of the CBSE+ISE and 0.38% of the State+VHSE students were found to be smoking cigarette.

The graphical representation to the responses to question No.22 is presented in Figure.36 and the sex and category wise responses are presented as Figure 37.

Figure 36 : Q. 22. During the past 30 days how many cigarettes have you smoked daily? (Total (N) = 5067)

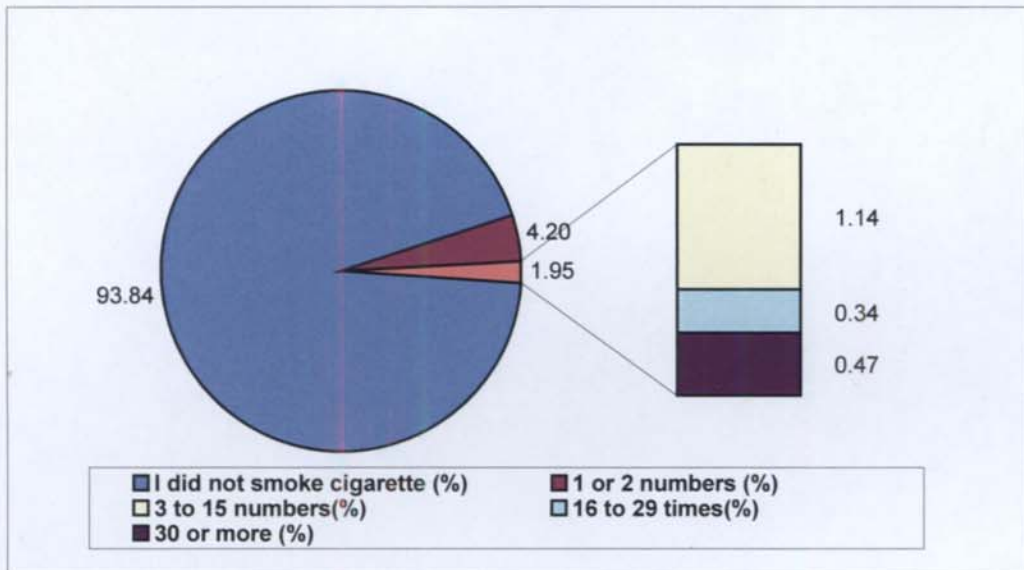


Figure 37 : Q. 22. During the past 30 days how many cigarettes have you smoked daily ? (Sex & Category wise)

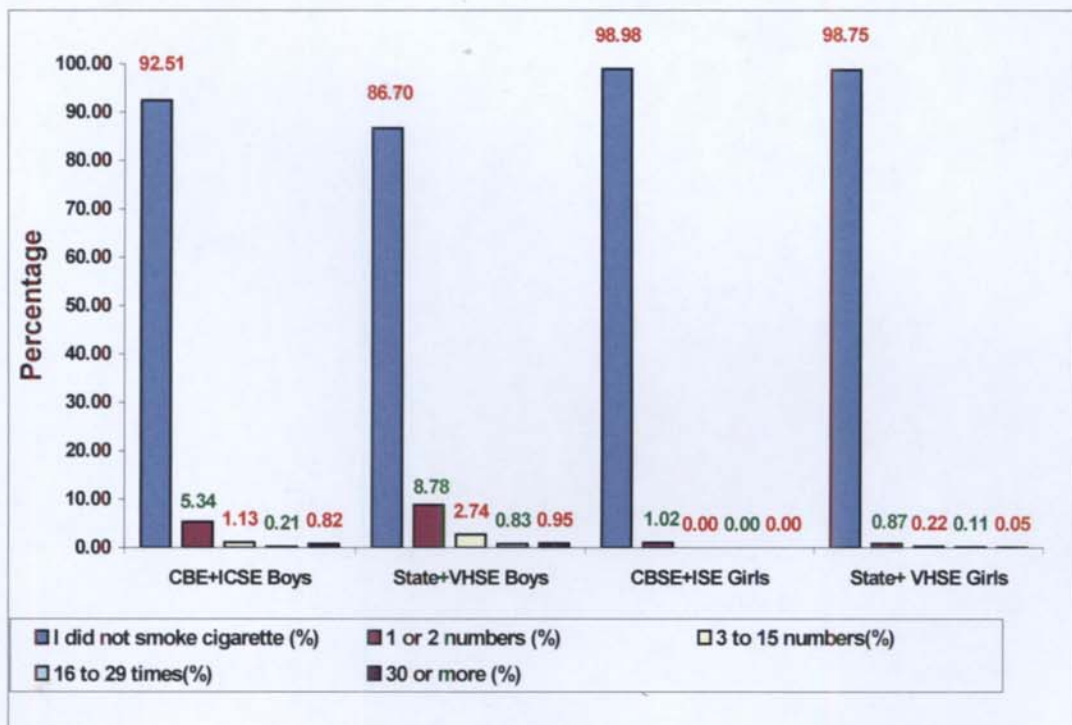


TABLE. 20

Q. 23. Which of your parents or guardians use any form of tobacco?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Neither (%)	700	71.87	1035	65.84	561	82.14	1286	69.97
My father or male guardian (%)	195	20.02	483	30.73	109	15.96	541	29.43
My mother or female guardian (%)	10	1.03	12	0.76	0	0.00	2	0.11
Both (%)	3	0.31	8	0.51	2	0.29	4	0.22
I do not know (%)	66	6.78	34	2.16	11	1.61	5	0.27
Total	974		1572		683		1838	

Overall, father or male guardians of 26.21% of the total sample have reported to use any form of tobacco. The tobacco use of among mother or female guardian was low, as only 0.47% and usage by both parents was only 0.34% (Table 20). Category wise, the usage of tobacco among State+VHSE student's father or male guardian was more (30.73%) than the CBSE+ISE students' father or male guardian (20.02%). The same trend was also seen in the case of girls students, i.e. 29.43% of State+VHSE student's father or male guardian use any form of tobacco on the other hand, the usage was low as 15.96% among the CBSE+ISE students father or male guardian.

The graphical representation to the responses to question No.23 is presented in Figure.38 and the sex and category wise responses are presented as Figure 39.

Figure 38 : Q. 23. Which of your parents or guardians use any form of tobacco ? (Total (N) = 5067)

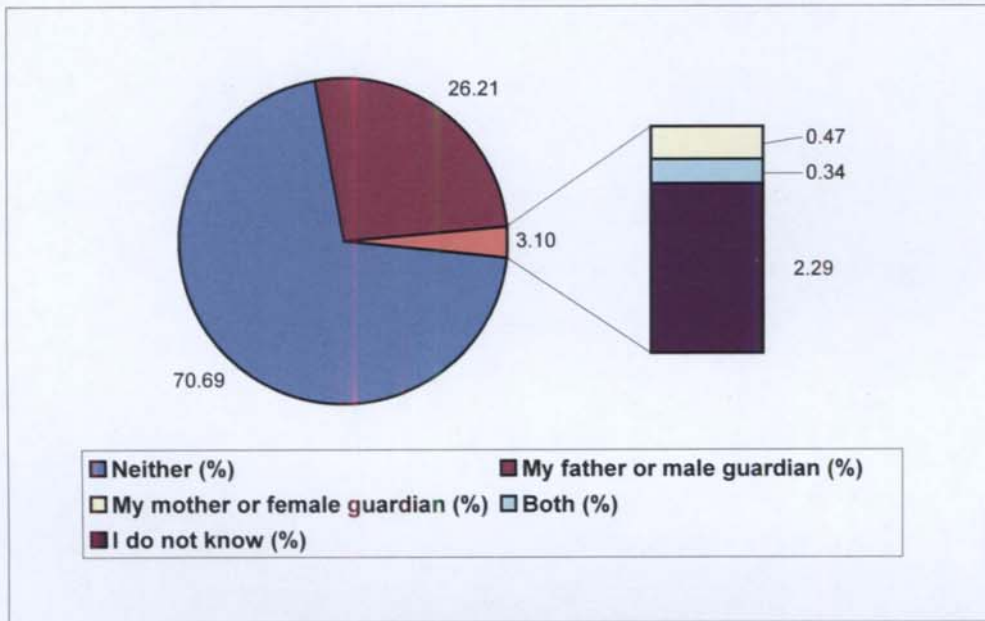


Figure 39 : Q. 23. Which of your parents or guardians use any form of tobacco? (Sex & category wise)

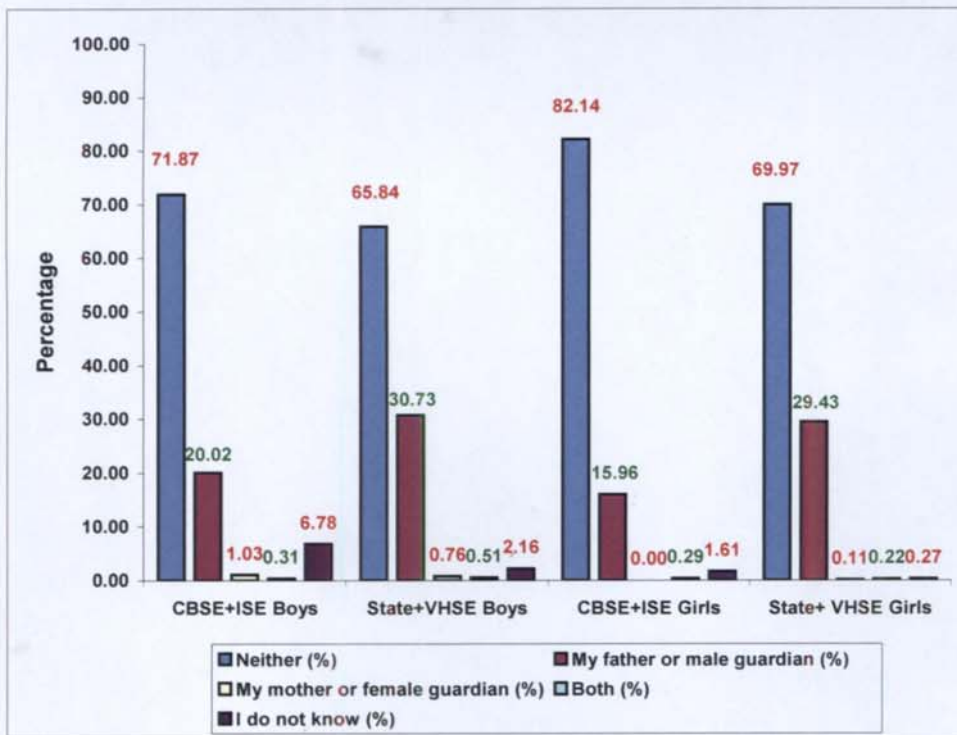


TABLE. 21

Q. 24. How old were you when you had your first drink of alcohol other than a few sips?

	N	CBSE+ISE Boys (%)	N	State+VHSE Boys (%)	N	CBSE+ISE Girls (%)	N	State+VHSE Girls (%)
I have never had drink of alcohol (%)	821	84.29	1130	71.88	668	97.80	1763	95.92
11 year old or younger (%)	44	4.52	116	7.38	8	1.17	49	2.67
12 or 13 years old (%)	24	2.46	63	4.01	2	0.29	8	0.44
14 or 15 years old (%)	45	4.62	117	7.44	5	0.73	10	0.54
16 years old or elder (%)	40	4.11	146	9.29	0	0.00	8	0.44
Total	974		1572		683		1838	

Overall, 4.28% of students had their first drink when they were at the age of 11 year or younger. 1.91% students had their first drink when they were between 12 to 13 years old, 3.49% students had their first drink when they were between 14 and 15 years old and 3.83% students had their first drink when they were 16 years old or elder.

Category wise, 7.38% of the State+VHSE and 4.52% of the CBSE+ISE boys students had their first drink, when they were 11 years or younger. 4.01% of State+VHSE students had their first drink at the age of 12 or 13 years and this percentage is higher than 2.46% of CBSE+ISE students. In the case of 14 or 15 years old boys 7.44% of State+VHSE students had

their first drink at the same time it was 4.62% for CBSE+ISE students. At the same time, further 9.29% of boys of State+VHSE students and 4.11% of CBSE+ISE students had their first drink when they were 16 years or elder. Only 2.67% of CBSE+ISE girls students and 1.17% State+VHSE girls students had their first drink when they were at the age 11 years or younger.

The graphical representation to the responses to question No.24 is presented in Figure.40 and the sex and category wise responses are presented as Figure 41.

Figure 40 :Q. 24. How old were you when you had your first drink of alcohol other than a few sips ? (Total (N) = 5067)

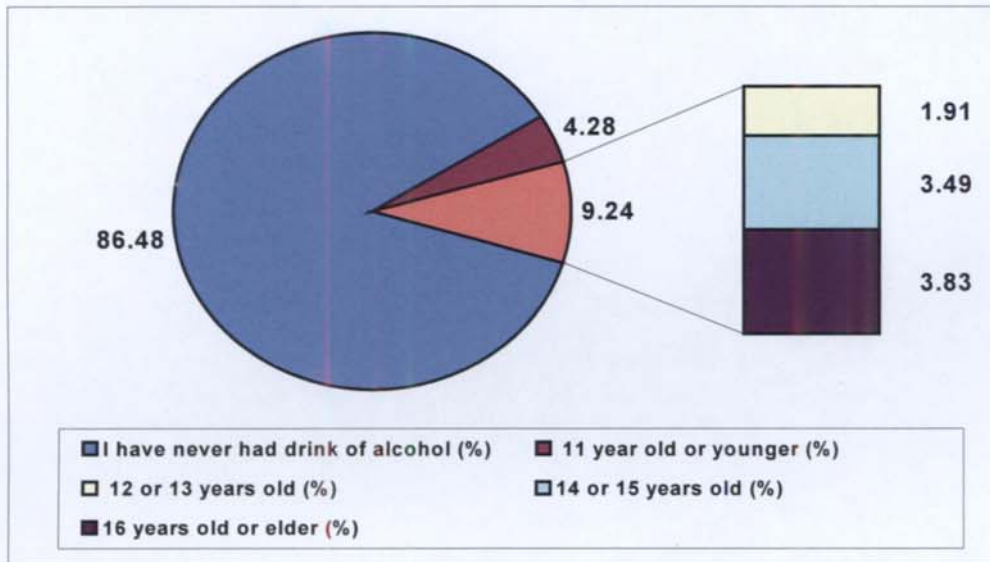


Figure 41 : Q. 24. How old were you when you had your first drink of alcohol other than a few sips ? (Sex & Category wise)



TABLE 22

Q.25 During past 30 days, on how many days did you have at least one drink containing alcohol?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 Days (%)	907	93.12	1359	86.45	676	98.98	1823	99.18
1 or 2 Days (%)	47	4.83	150	9.54	6	0.88	14	0.76
3 to 15 Days (%)	12	1.23	42	2.67	1	0.15	1	0.05
16 to 29 Days (%)	2	0.21	13	0.83	0	0.00	0	0.00
All Days (%)	6	0.62	8	0.51	0	0.00	0	0.00
	974		1572		683		1838	

Overall, 5.96% of students had at least one drink of alcohol on more than one day of the 30 days preceding the survey (i.e., current alcohol use). The prevalence of current alcohol use was higher among State+VHSE boys (13.55%) students than CBSE+ISE boys (6.88%) students. Overall prevalence of current alcohol use was higher among CBSE+ISE girls (1.02%) than State+VHSE girls (0.82%) students.

The graphical representation to the responses to question No.25 is presented in Figure.42 and the sex and category wise responses are presented as Figure 43.

Figure 42 : Q.25 During past 30 days, on how many days did you have at least one drink containing alcohol? (Total (N)= 5067)

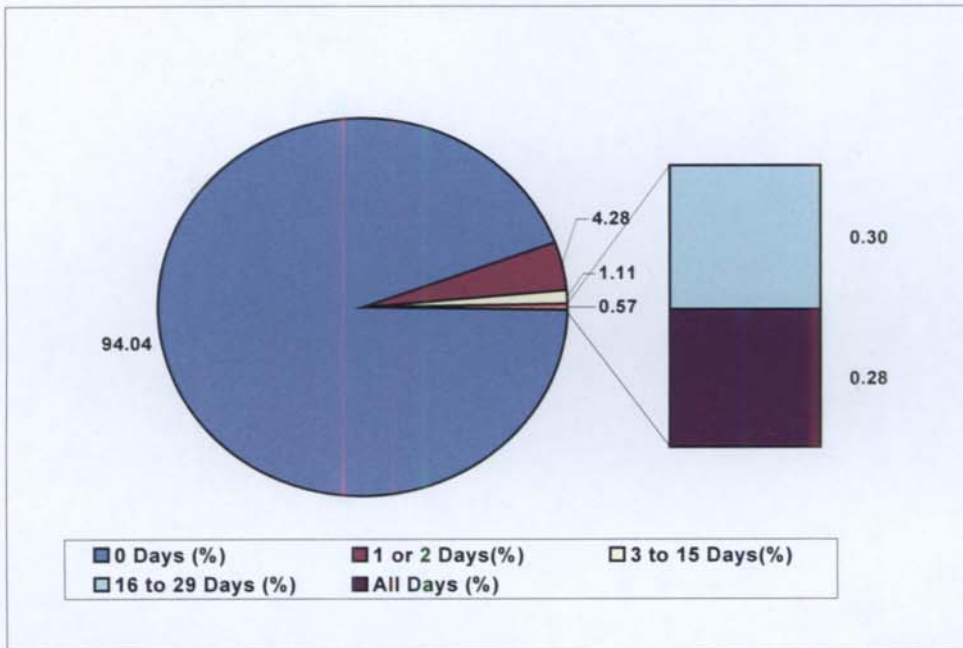


Figure 43 : Q.25. During past 30 days on how many days did you have one drink containing alcohol? (Sex & category wise)

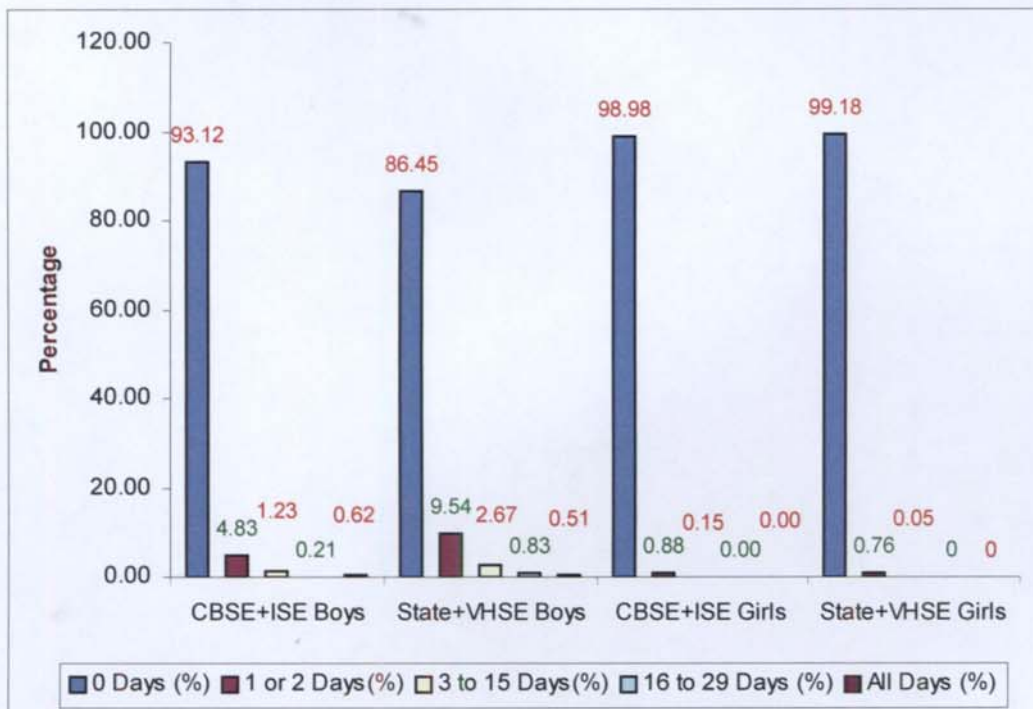


TABLE. 23

Q. 26 During your life, how many times did you drink so much alcohol that you were really drunk?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 times (%)	916	94.05	1458	92.75	681	99.71	1835	99.84
1 or 2 times (%)	37	3.80	83	5.28	2	0.29	3	0.16
3 to 9 times (%)	8	0.82	12	0.76	0	0.00	0	0.00
10 to 19 times (%)	7	0.72	14	0.89	0	0.00	0	0.00
20 or more times (%)	6	0.62	5	0.32	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, 3.49% boys drunk so much of alcohol 1 or more times in their life that made them really drunk. The prevalence of drinking so much of alcohol 1 or more times were higher among State+VHSE boys (7.25%) than CBSE+ISE boys (5.95%). While in the case of girls, it was a negligible percentage of 0.29% CBSE+ISE girls and 0.49% State+VHSE girls had drink so much of alcohol, that they have really drunk

The graphical representation to the responses to question No.26 is presented in Figure.44 and the sex and category wise responses are presented as Figure 45.

Figure 44: Q. 26. During your life how many times did you drink so much alcohol that you were really drunk ?
(Total (N) = 5067)

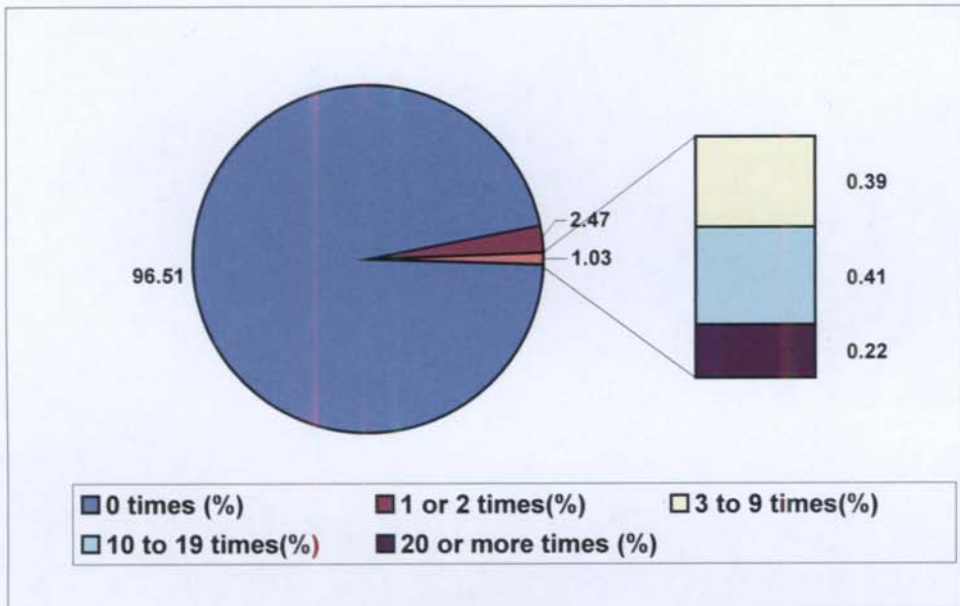


Figure 45 : Q.26. During your life, how many times did you drink so much alcohol that you were really drunk ?
(Sex & Category wise)

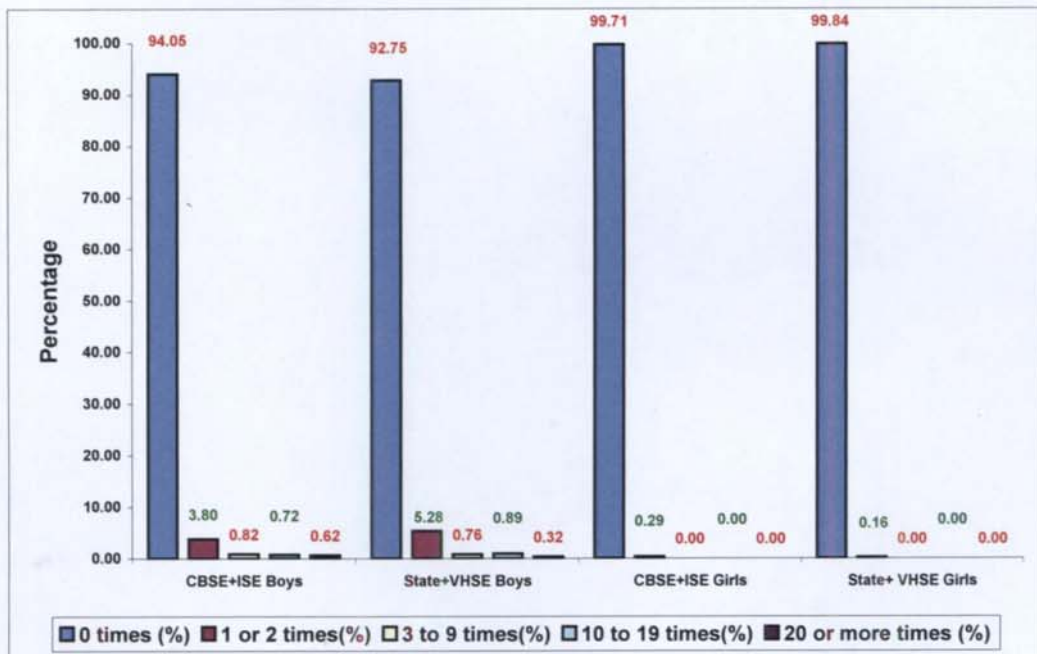


TABLE. 24

Q. 27. How old were you for the first time you drank so much alcohol that you were really drunk?

	N	CBSE + ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I have never drink so much alcohol, that I was really drunk (%)	916	94.05	1454	92.49	678	99.27	1828	99.46
11 year old or younger (%)	0	0.00	0	0.00	0	0.00	0	0.00
12 or 13 years old (%)	2	0.21	14	0.89	0	0.00	0	0.00
14 or 15 years old (%)	18	1.85	33	2.10	2	0.29	5	0.27
16 years old or elder (%)	38	3.90	71	4.52	3	0.44	5	0.27
Total	974		1572		683		1838	

Overall, 3.77% of which (boys and girls) were 12 year or older when they had so much of alcohol that made them really drunk. Overall, 4.52% of State+VHSE boys and 3.90% CBSE+ISE boys had so much alcohol that made them really drunk. While in the case of girls, only 0.44% of CBSE+ISE students had this experience compared to the 0.27% of State+VHSE girls students.

The graphical representation to the responses to question No.27 is presented in Figure.46 and the sex and category wise responses are presented as Figure 47.

Figure 46 : Q. 27. How old were you for the first time you drank so much alcohol that you were really drunk? (Total (N) = 5067)

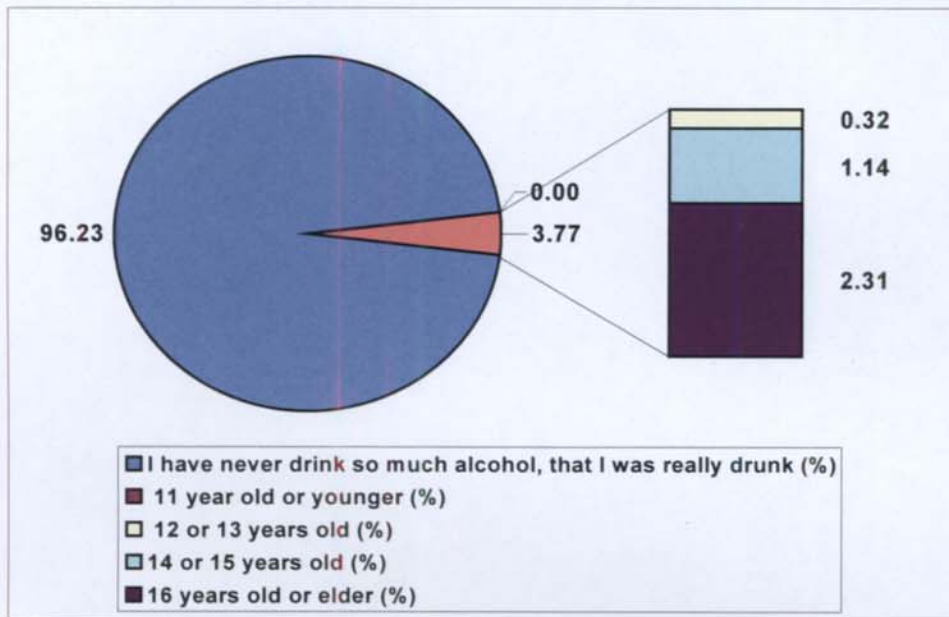


Figure 47 : Q. 27. How old were you for the first time you drank so much alcohol that you were really drunk? (Sex & category wise)

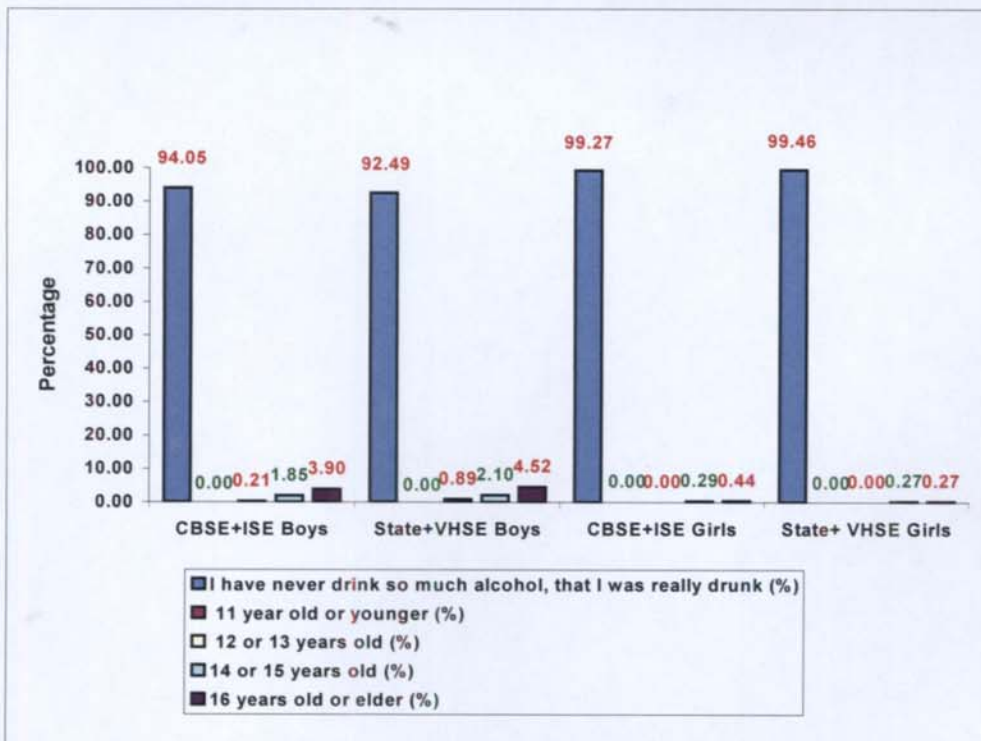


TABLE. 25
Q. 28. During your life
how many times have you ever had
a hangover, felt sick, headache, got into
trouble with your family or friends, missed
school or got into fight as a result of drinking alcohol ?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+I SE Girls (%)	N	State+ VHSE Girls (%)
0 times (%)	886	90.97	1435	91.28	662	96.93	1807	98.31
1 or 2 times (%)	44	4.52	83	5.28	10	1.46	25	1.36
3 to 9 times (%)	22	2.26	29	1.84	9	1.32	5	0.27
10 to 19 times (%)	5	0.51	12	0.76	2	0.29	1	0.05
20 or more times (%)	17	1.75	13	0.83	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, 5.47% of students both boys and girls have had a hangover, felt sick, headache, got into trouble with their family or friends, or missed school or got into fight because of drinking alcohol. Overall, the occurrence rate of State+VHSE boys were higher (5.28%) than the CBSE+ISE boys (4.52%) have had one or two times in their life a hangover, felt sick, headache, got into trouble with their family or friends, or missed school or got into fight because of drinking alcohol. While only 1.75% of CBSE+ISE boys and 0.83% of State+VHSE boys have had twenty or more times in their life a hangover, felt sick, headache, got into trouble with their family or friends, or missed school or got into fight because of drinking alcohol.

In the case of girls, the occurrence rate of CBSE+ISE were higher (1.46%) than the State+VHSE (1.36%) students have had one or two times in their life a hangover, felt sick, headache, got into trouble with their family or friends, or missed school or got into fight because of drinking alcohol. (Table 25).

The graphical representation to the responses to question No.28 is presented in Figure.48 and the sex and category wise responses are presented as Figure 49.

Figure 48 :Q. 28. During your life how many times have you ever had a hangover, felt sick, headache, got into trouble with your family or friends, missed school or got into fight as a result of drinking alcohol ? (Total (N) = 5067)

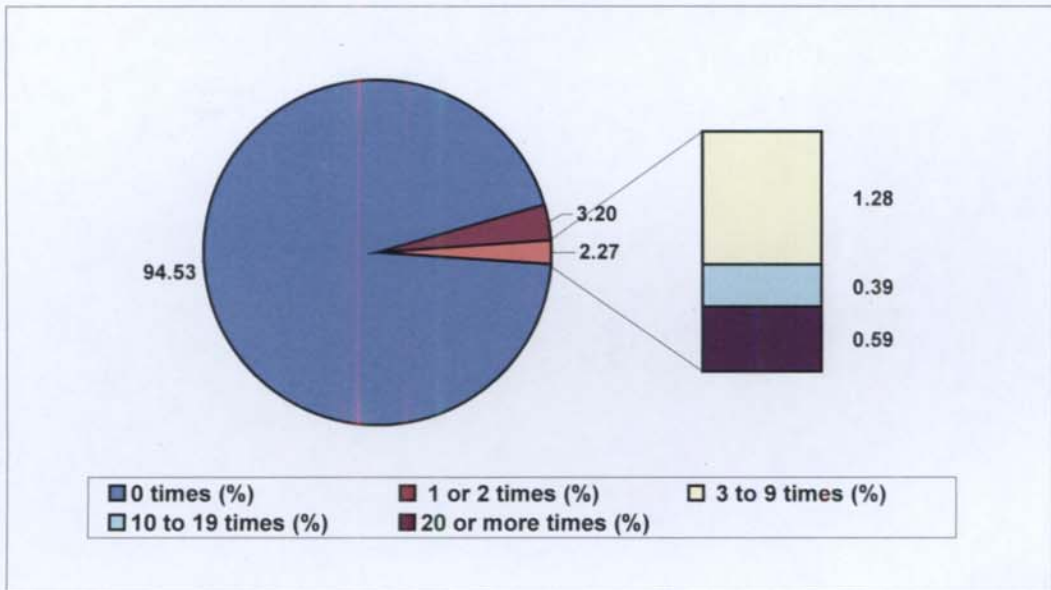


Figure 49 :Q. 28. During your life how many times have you ever had a hangover, felt sick, headache, got into trouble with your family or friends, missed school or got into fight as a result of drinking alcohol? (Sex & Category wise)

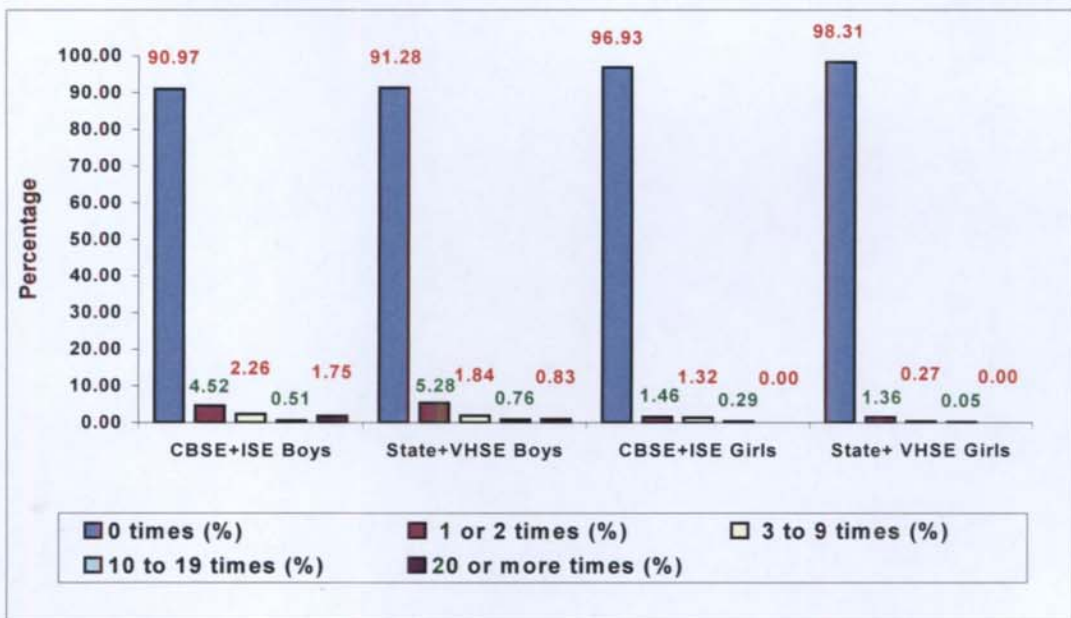


TABLE. 26

Q.29. The most number of drinks you have had on one occasion?

	N	CBSE+ ICSE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ICSE Girls (%)	N	State+ VHSE Girls (%)
I don't drink alcohol (%)	822	84.39	1135	72.20	668	97.80	1763	95.92
Less than 1 peg (%)	97	9.96	232	14.76	10	1.46	24	1.31
2 peg (%)	32	3.29	112	7.12	4	0.59	46	2.50
3 peg (%)	11	1.13	41	2.61	1	0.15	5	0.27
4 or more pegs (%)	12	1.23	52	3.31	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, 6.24% of students (both boys and girls) had two pegs or more of alcohol in a row (i.e., within a couple of hours) on one occasion before the survey. Overall, the habit of the episodic heavy drinking two or more pegs of alcohol in a row was higher among State+VHSE boys (13.04%) than CBSE+ISE boys (5.65%).

While in the case of girls, the habit of the episodic heavy drinking of two or more pegs of alcohol in a row was lower among the CBSE+ISE girls (0.74%) than the State+VHSE girls (2.77%) (Table 26).

The graphical representation to the responses to question No.29 is presented in Figure.50 and the sex and category wise responses are presented as Figure 51.

Figure 50 : Q.29. The most number of drinks you have had on one occasion? (Total (N) = 5067)

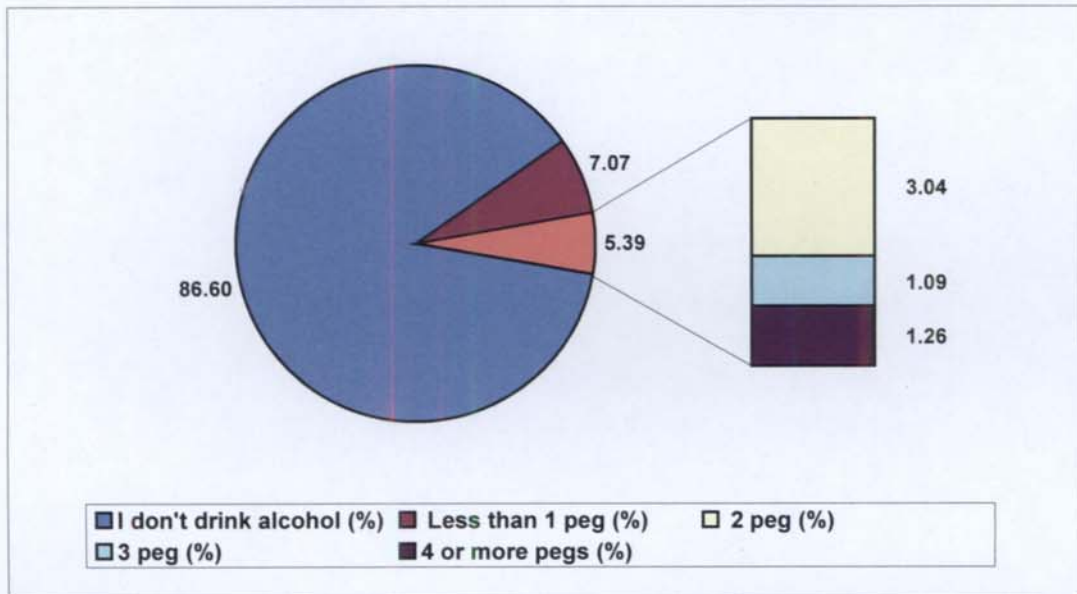


Figure 51 : Q. 29. The most number of drinks you have had on one occasion? (Sex & Category wise)

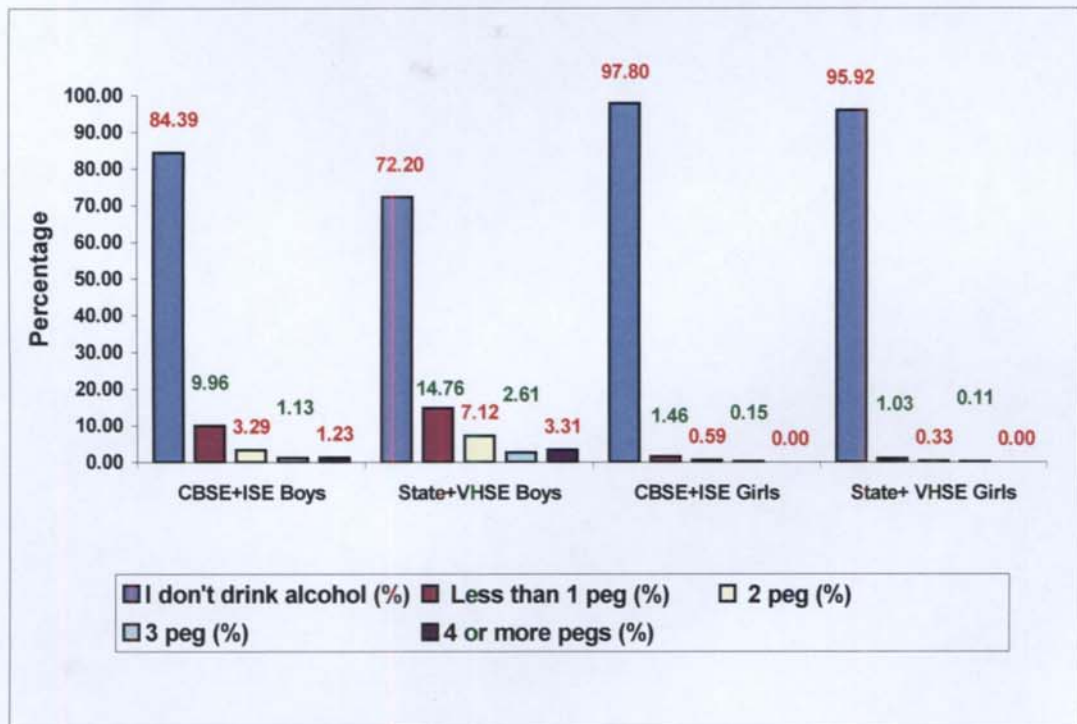


TABLE 27

Q. 30 What type of alcohol do you usually drink?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I don't drink alcohol (%)	822	84.39	1135	72.20	668	97.80	1763	95.92
Beer	96	9.86	253	16.09	5	0.73	59	3.21
Vodka, Gin	12	1.23	38	2.42	2	0.29	2	0.11
Toddy	12	1.23	58	3.69	2	0.29	9	0.49
Some other types	32	3.29	88	5.60	6	0.88	5	0.27
Total	974		1572		683		1838	

Overall, 8.15% of the students (both boys and girls) were using Beer, 1.7% Vodka or Gin, 1.60% Toddy and 2.59% some other type of alcoholic beverages. Beer usage was higher among the State+VHSE boys (16.09%) than CBSE+ISE boys (9.86%), the same trend was seen in the case of Vodka or Gin 2.42% and 1.23%, Toddy 3.69% and 1.23% and some other types 5.60% and 3.29% respectively.

3.21% of State+VHSE girls use beer and this was higher than the 0.73% of CBSE+ISE girls students. The usage of other type of alcoholic drinks was negligible.

The graphical representation to the responses to question No.30 is presented in Figure.52 and the sex and category wise responses are presented as Figure 53.

Figure 52 : Q. 30 What type of alcohol do you usually drink?
(Total (N) = 5067)

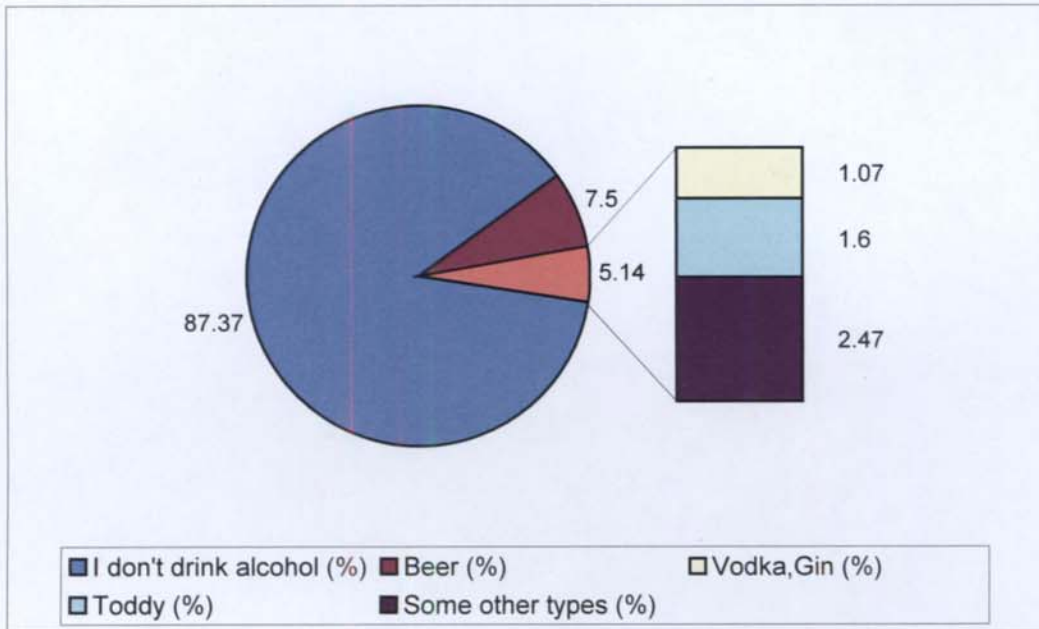


Figure 53 : Q. 30 What type of alcohol do you usually drink?
(Sex & Category wise)

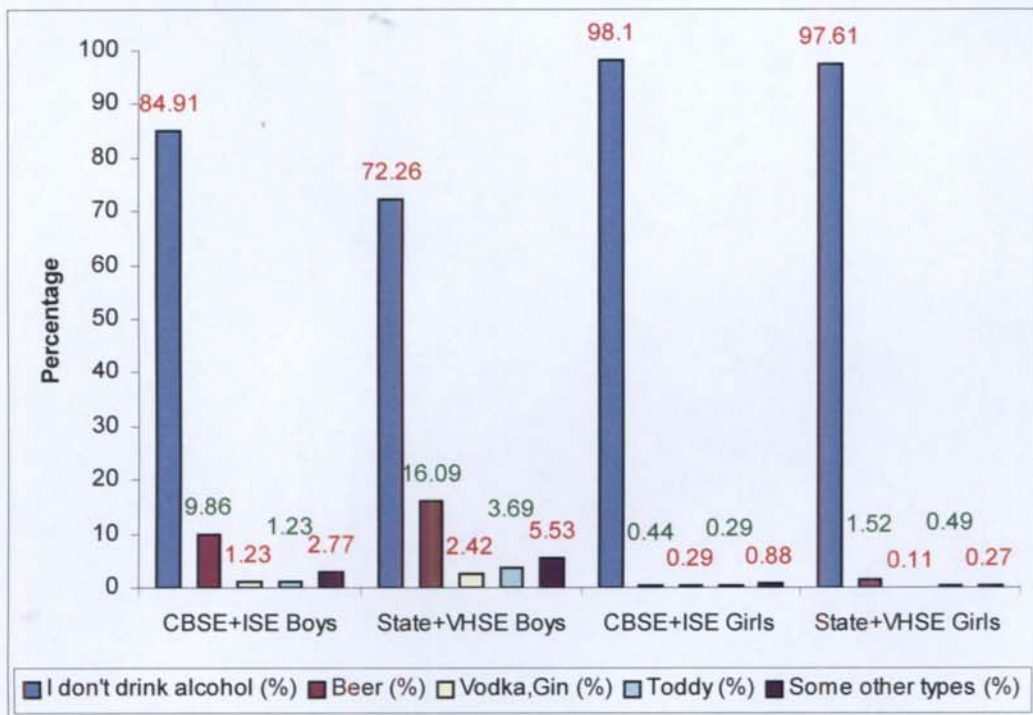


TABLE. 28

Q. 31 With whom do you usually drink alcohol?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I don't drink alcohol (%)	822	86.04	1135	73.22	668	98.54	1763	97.88
With my friends (%)	98	8.42	293	17.62	10	0.73	44	0.49
With my family (%)	35	3.59	101	6.42	5	0.59	30	1.58
With persons, I have just met (%)	5	0.51	11	0.70	0	0.15	0	0.05
I usually drink alone (%)	14	1.44	32	2.04	0	0.00	0	0.00
Total	974		1572		683		1838	

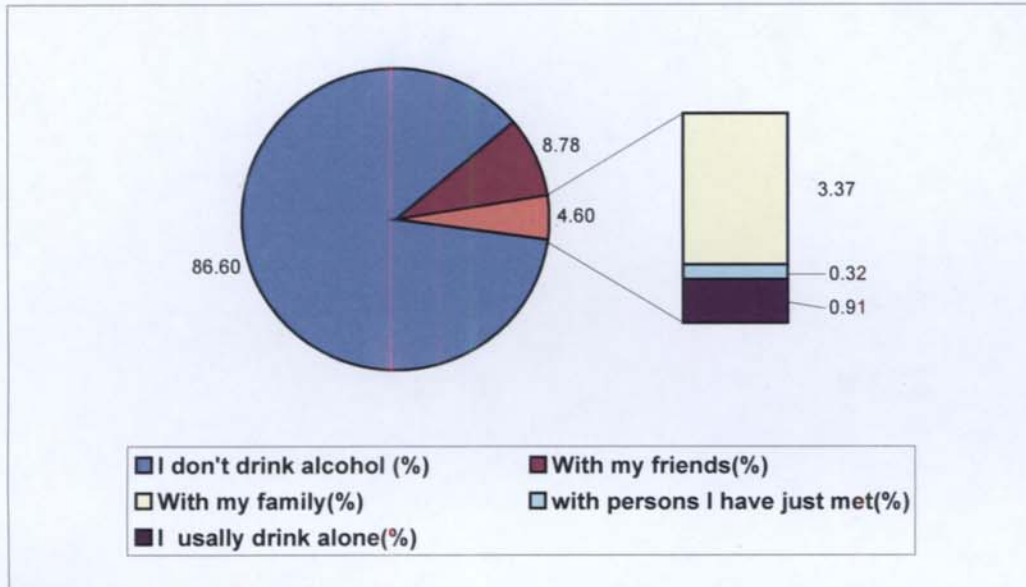
Table 28, on the question with whom do you usually drink alcohol indicates, 8.78% of the students drinking with friends, 3.37% drinking with family members, 0.32% with persons just met and 0.91% usually drink alone. Category wise, 17.62% of the State+VHSE boys drink with friends that are higher than the prevalence of 8.42% among the CBSE+ISE boys. The same trend were seen in the case of drinking with family members (State+VHSE boys = 6.42% and CBSE+ISE boys = 3.59%) and habit of drinking with persons just met amounts to 0.70% among State+VHSE boys and 0.51% among CBSE+ISE boys. In the case of students usually drink alone; it was 2.04% among State+VHSE boys and 1.44% among CBSE+ISE boys.

In the case of girls, the trend was reversing that is, the prevalence rate of drinking with friends, which were higher among the CBSE + ISE (0.73%)

than State+VHSE (0.49%). In the case of drinking with family members, the prevalence rate was higher among the State+VHSE (1.58%) than CBSE+ISE (0.59%) and in case of drinking with persons just met and usually drink alone the prevalence rate were very negligible (Table 28).

The graphical representation to the responses to question No.31 is presented in Figure.54 and the sex and category wise responses are presented as Figure 55.

**Figure 54 : Q. 31 With whom do you usually drink alcohol?
(Total (N) = 5067)**



**Figure 55 : Q. 31 With whom do you usually drink alcohol?
(Sex & Category wise)**

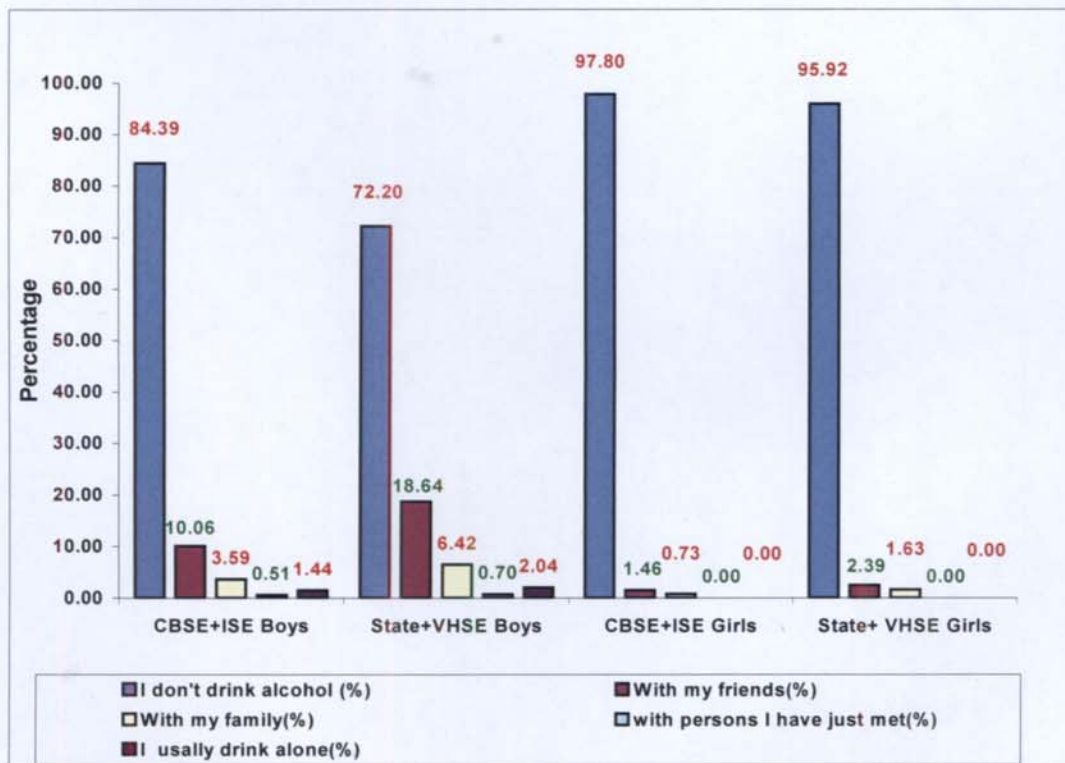


TABLE. 29

Q. 32 Do your parents or guardian know that you drink alcohol?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I don't drink alcohol (%)	822	84.39	1135	72.20	668	97.80	1763	95.92
Yes (%)	55	5.65	181	11.51	5	0.73	55	2.99
No (%)	79	8.11	197	12.53	4	0.59	11	0.60
I don't know (%)	18	1.85	59	3.75	6	0.88	9	0.49
Total	974		1572		683		1838	

The above table on the question, Do your parents or guardian know that you drink alcohol ? indicates, 5.74% students parents or guardian are not aware that they drink alcohol. At the same time 5.84% students parents or guardian know that they drink alcohol. Category wise, the prevalence rate of students taking drinks without the knowledge of parents or guardian were high among State+VHSE boys (12.53%) than the CBSE+ISE boys (8.11%). On the other hand, 5.65% of CBSE+ISE boys and 11.51% of State+VHSE boys believe that their parents or guardians are aware about their habits of drinking alcohol. (Table 29).

In the case of girls, 0.59% of CBSE+ISE girls and 0.60% of State+VHSE girls believe that their parents or guardian do not know about

their habit of drinking alcohol and 0.73% and 2.99% of CBSE+ISE girls and State+VHSE girls respectively believe that their parents or guardian are aware about their habit of drinking alcohol. (Table 29).

The graphical representation to the responses to question No.32 is presented in Figure.56 and the sex and category wise responses are presented as Figure 57.

Figure 56 : Q. 32 Do your parents or guardian know that you drink alcohol ? (Total (N) = 5067)

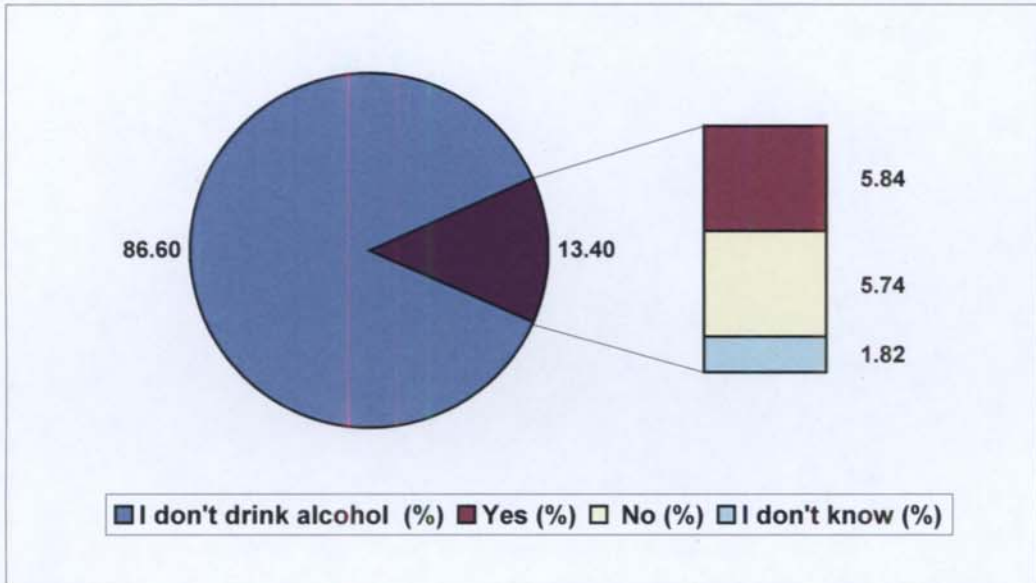


Figure 57 : Q. 32 Do your parents or guardian know that you drink alcohol ? (Sex & Category wise)

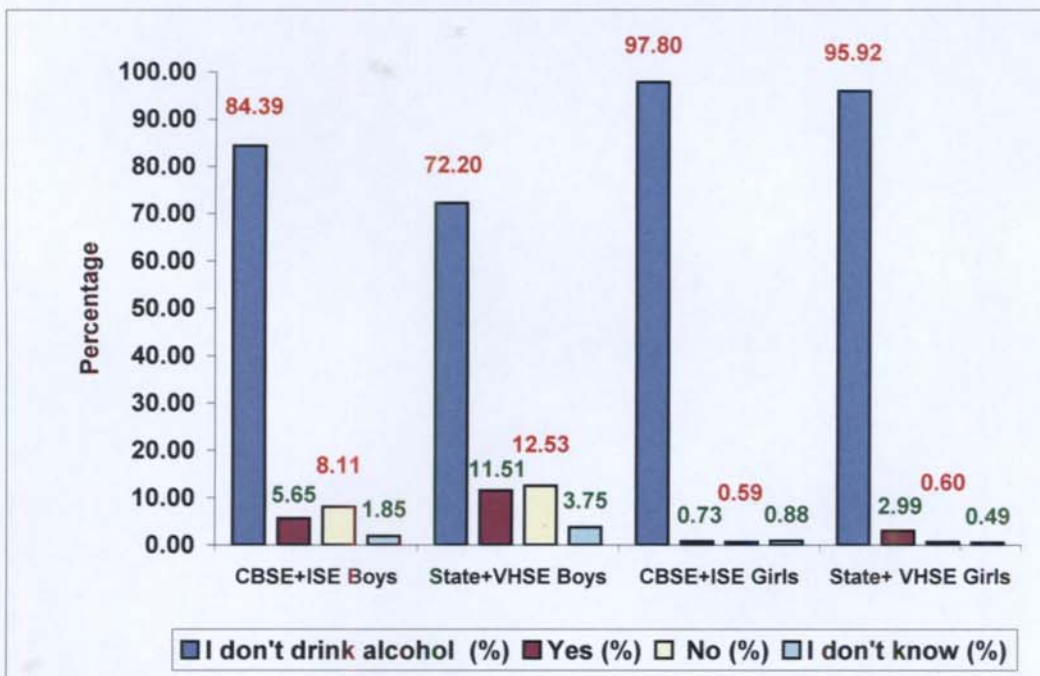


TABLE. 30

Q. 33 Which of your parents or guardian drink alcohol?

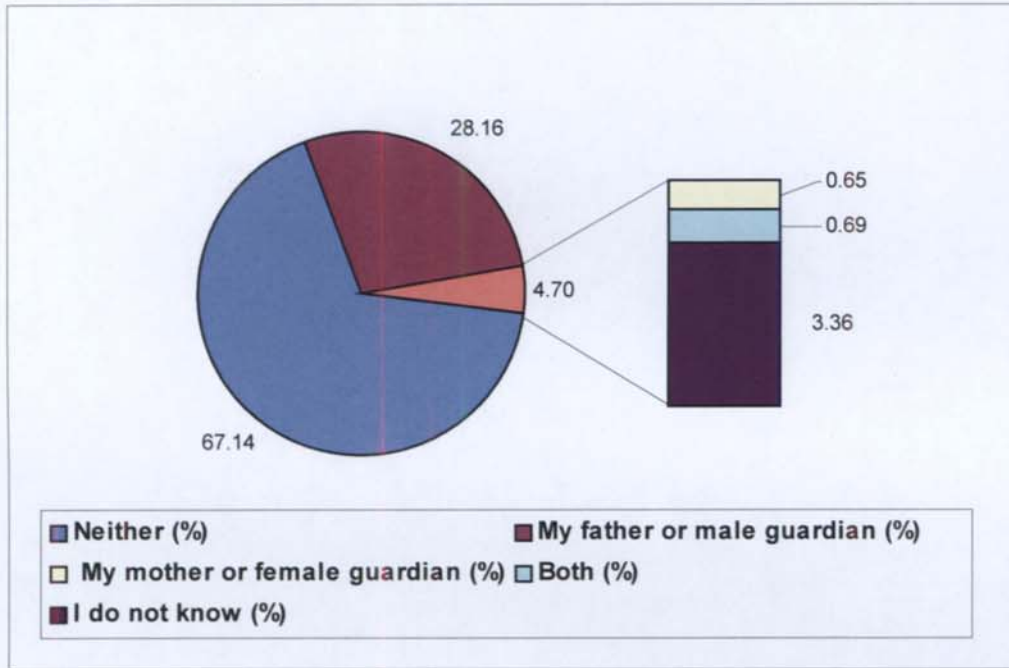
	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Neither (%)	674	69.20	920	58.52	559	81.84	1249	67.95
My father or male guardian (%)	221	22.69	566	36.01	113	16.54	527	28.67
My mother or female guardian (%)	7	0.72	22	1.40	3	0.44	1	0.05
Both (%)	8	0.82	15	0.95	2	0.29	10	0.54
I do not know (%)	64	6.57	49	3.12	6	0.88	51	2.77
Total	974		157 2		683		1838	

The above table indicates, overall, 28.16% of students father or male guardian drink alcohol. The prevalence of drinking alcohol by mother or female guardian (0.65%) and both the parents (0.69%) are negligible. Category wise, drinking habit of father or male guardian were high among State+VHSE (36.01%) than the CBSE+ISE (22.69%).

In the case of girls students, the same trend have been observed that is 28.67% among State+VHSE and 16.54% among CBSE+ISE students father or male guardian drink alcohol (Table 30).

The graphical representation to the responses to question No.33 is presented in Figure.58 and the sex and category wise responses are presented as Figure 59.

**Figure 58 : Q. 33 Which of your parents or guardian drink alcohol ?
(Total (N) = 5067)**



**Figure 59 : Q. 33 Which of your parents or guardian drink alcohol?
(Sex & Category wise)**

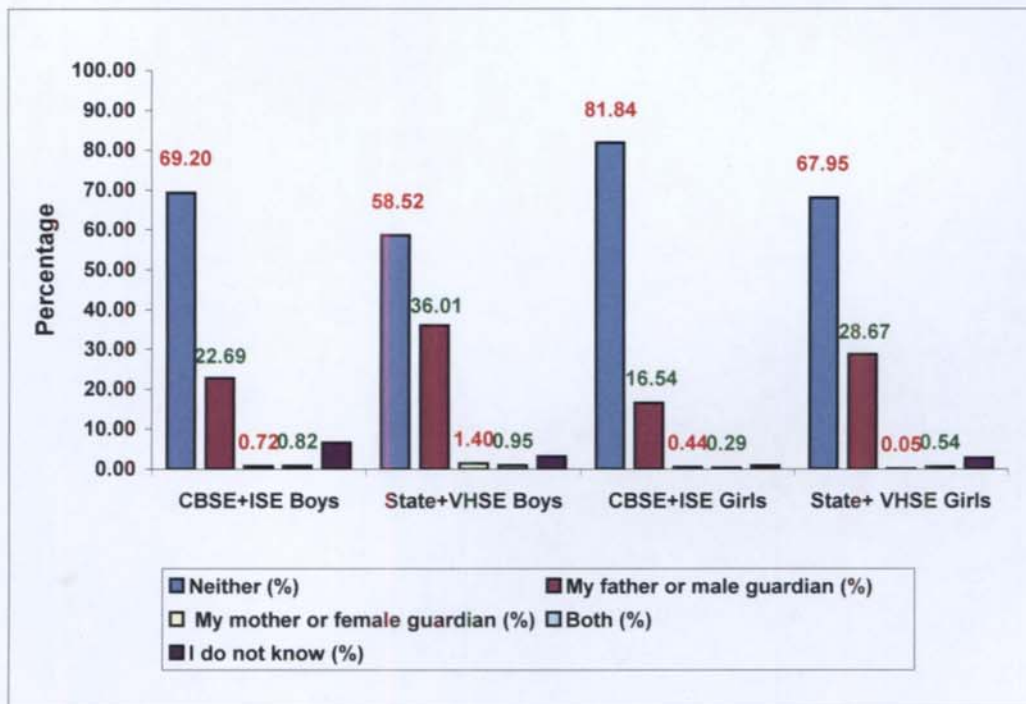


TABLE. 31

Q. 34 During your life how many times have you used drugs such as marijuana, ganja, hashish?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 times (%)	948	97.33	1506	95.80	680	99.56	1825	99.29
1 or 2 times (%)	16	1.64	47	2.99	3	0.29	13	0.65
3 to 9 times (%)	5	0.51	10	0.64	0	0.15	0	0.05
10 or more times (%)	5	0.51	9	0.57	0	0.00	0	0.00
Total	974		1572		683		1838	

The above table indicates overall, only 2.13% students have used drugs such as marijuana, ganja or hashish in their life. Category wise, the usage was higher among the State+VHSE boys (4.2%) than CBSE+ISE boys (2.66%). While in case of girls the usage of drugs such as marijuana, ganja or hashish in their life was only 0.44% among CBSE+ISE and only 0.7% among State+VHSE girls. (Table 31).

The graphical representation to the responses to question No.34 is presented in Figure.60 and the sex and category wise responses are presented as Figure 61.

Figure 60 : Q. 34 During your life how many times have you used drugs such as marijuana, ganja, hashish ? (Total (N) = 5067)

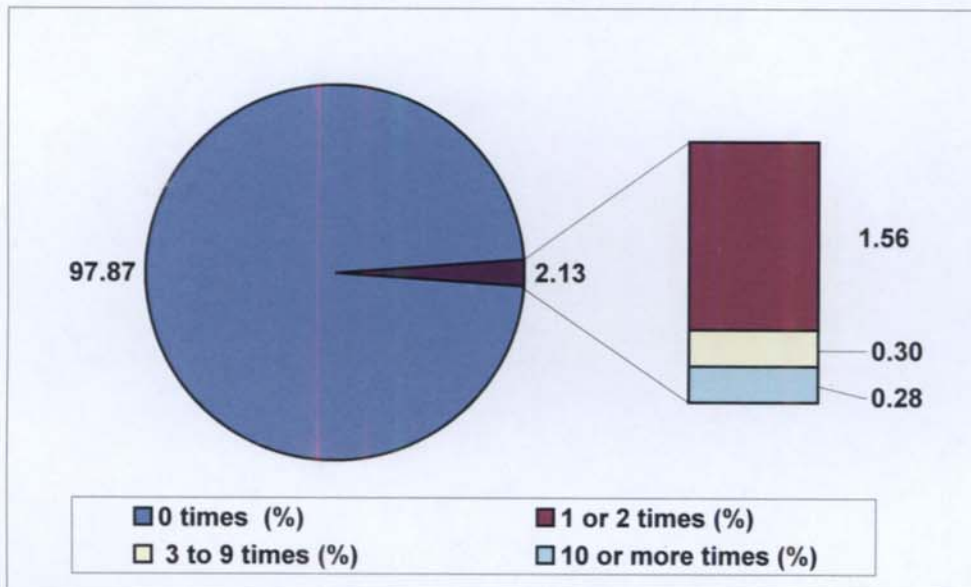


Figure 61 : Q. 34 During your life how many times have you used drugs such as marijuana, ganja, hashish ? (Sex & Category wise)

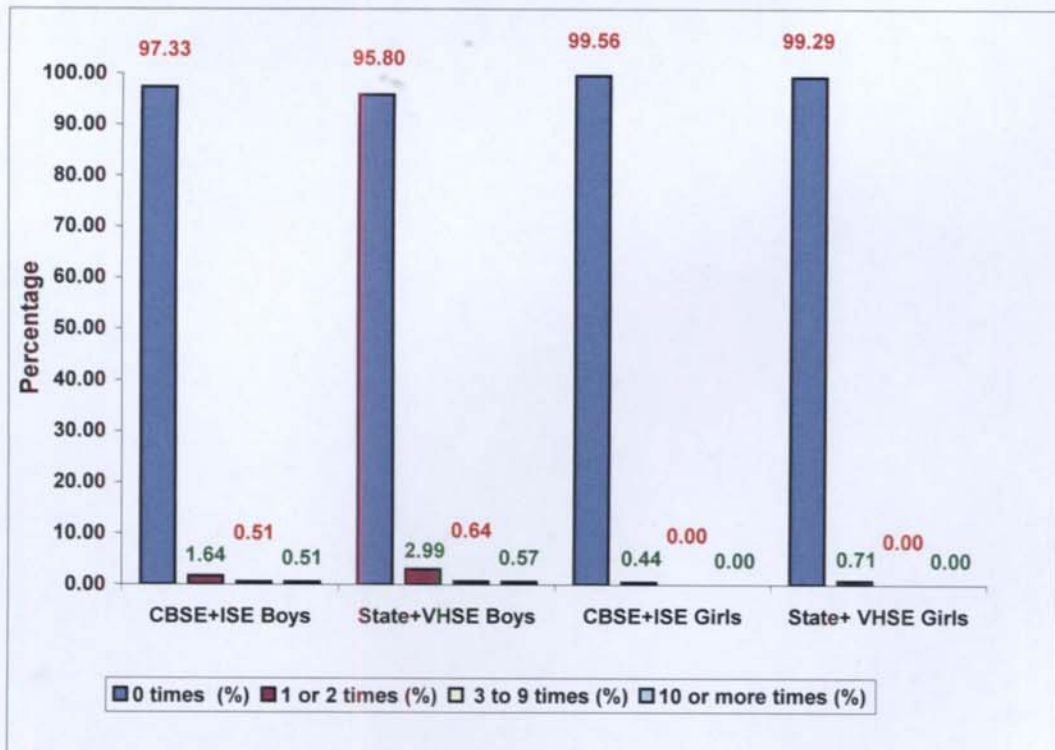


TABLE. 32

Q. 35 During the past 30 days how many times did you use ganja?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 times (%)	948	97.33	1506	95.80	680	99.56	1825	99.29
1 or 2 times (%)	18	1.85	45	2.86	1	0.15	13	0.71
3 to 9 times (%)	3	0.31	13	0.83	2	0.29	0	0.00
10 to 19 times (%)	1	0.10	4	0.25	0	0.00	0	0.00
20 or more times (%)	4	0.41	4	0.25	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, 2.13% of the students used ganja one or more times during the past 30 days prior to the survey. Category wise, the prevalence of State+VHSE boys was 4.19% and CBSE+ISE boys was 2.67% who used ganja one or more times during the past 30 days prior to the survey. While in the case of girls, it was 0.71% among State+VHSE girls and 0.44% among CBSE+ISE girls. (Table 32).

The graphical representation to the responses to question No.35 is presented in Figure.62 and the sex and category wise responses are presented as Figure 63.

Figure 62 : Q. 35 During the past 30 days how many times did you use ganja? (Total (N) = 5067)

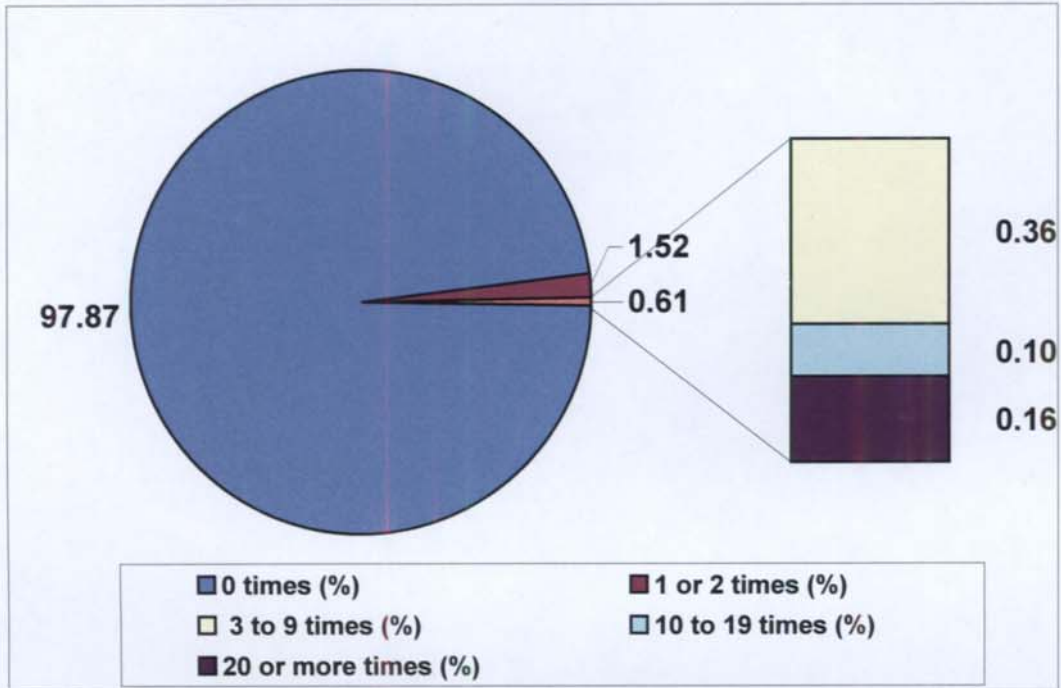


Figure 63 : Q. 35 During the past 30 days how many times did you use ganja? (Sex & Category wise)

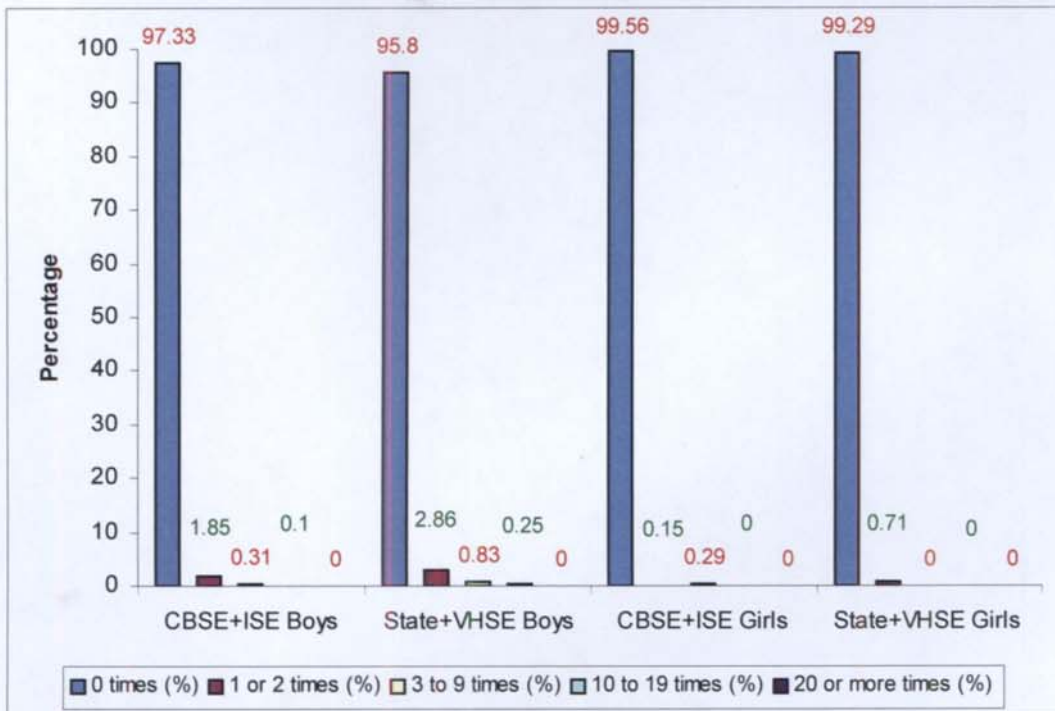


TABLE. 33

Q. 36 How old were you when you first tried marijuana or ganja?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
I have never tried ganja (%)	948	97.33	1506	95.80	680	99.56	1825	99.29
11 years old or younger (%)	0	0.00	0	0.00	0	0.00	0	0.00
12 or 13 years old (%)	2	0.21	10	0.64	0	0.00	0	0.00
14 or 15 years old (%)	5	0.51	26	1.65	1	0.15	3	0.16
16 years old or elder (%)	19	1.95	30	1.91	2	0.29	10	0.54
Total	974		1572		683		1838	

Overall, 2.13% students (both boys and girls combined) first tried marijuana or ganja at the age of 12 years or older. Category wise, 2.67% CBSE+ISE boys have first tried marijuana or ganja at the age of 12 years or older at the same it was 4.2% among State+VHSE boys. While, in the case of girls, 0.44 % CBSE +ISE students first tried marijuana or ganja at the age of 12 years or older and 0.70% among State+VHSE students (Table 33).

The graphical representation to the responses to question No.36 is presented in Figure.64 and the sex and category wise responses are presented as Figure 65.

Figure 64 : Q. 36 How old were you when you first tried marijuana or ganja? (Total (N) = 5067)

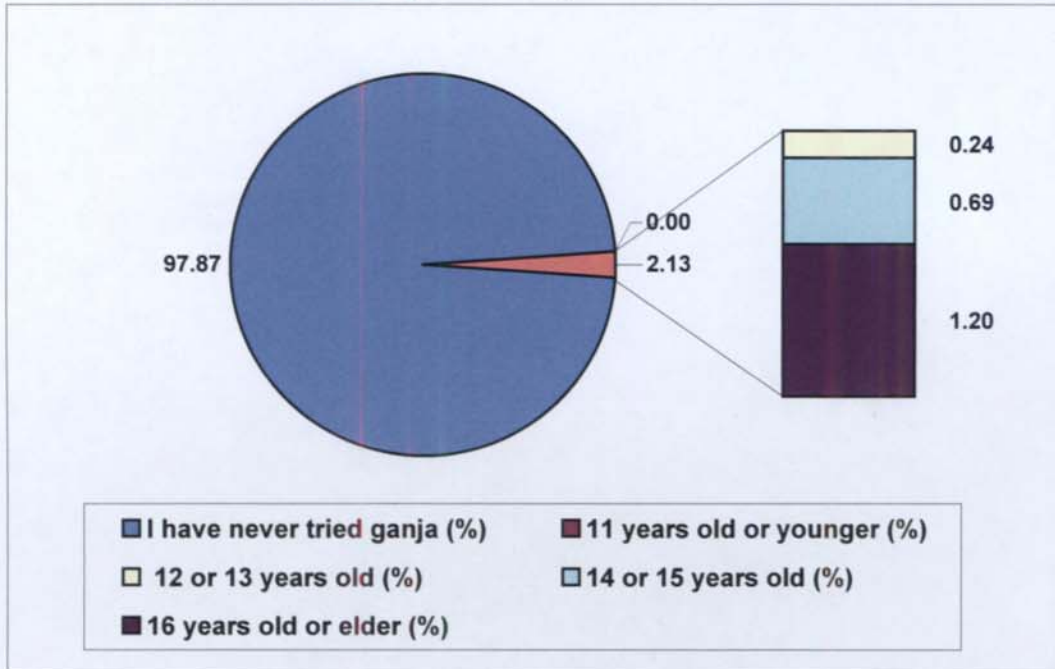


Figure 65 : Q. 36 How old were you when you first tried marijuana or ganja? (Sex and Category wise)

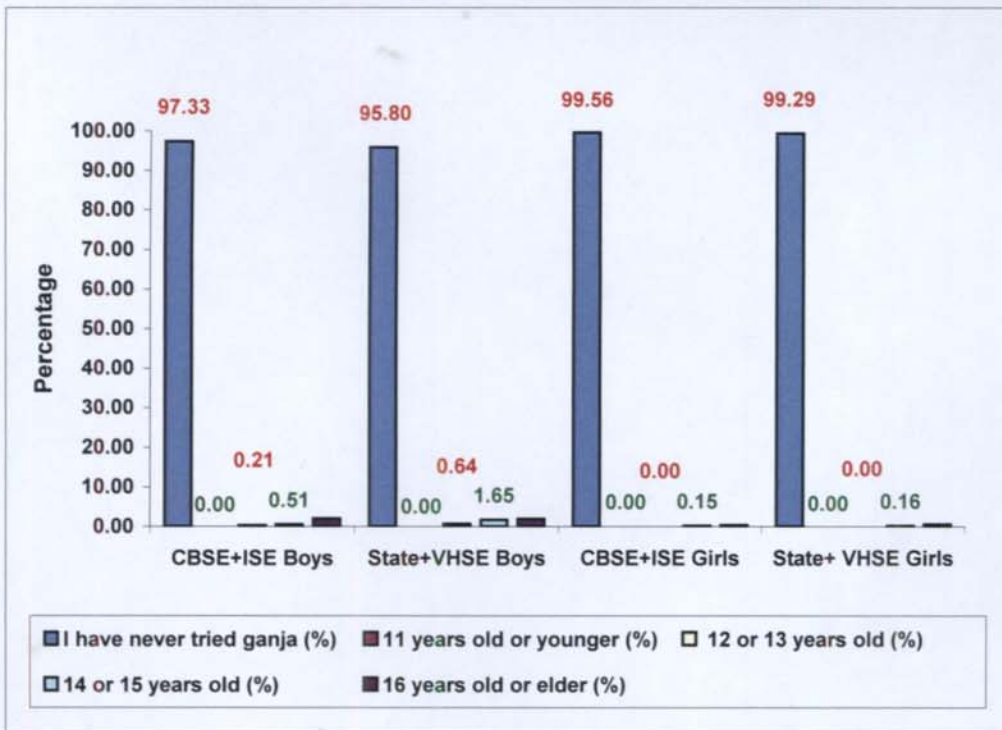


TABLE 34
Q. 37 During your life how many times have you shared needles or syringes to inject any drug into your body?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 times (%)	952	97.74	1518	96.56	679	99.41	1823	99.18
1 or 2 times (%)	12	1.23	29	1.84	3	0.44	8	0.44
3 to 9 times (%)	4	0.41	17	1.08	1	0.15	2	0.11
10 to 19 times (%)	3	0.31	6	0.38	0	0.00	5	0.27
20 or more times (%)	3	0.31	2	0.13	0	0.00	0	0.00
Total	974		1572		683		1838	

Overall, in the case of both boys and girls combined 1.88% of students have shared needles or syringes to inject any type of drug into their body in their life. Category wise, 3.43% of State+VHSE boys and 2.26% of CBSE+ISE boys have shared needles or syringes to inject any type of drug into their body in their life. While, in case of girls 0.82% State+VHSE and 0.59% of CBSE+ISE girls have shared needles or syringes to inject any drug into their body in their life (Table 34).

The graphical representation to the responses to question No.37 is presented in Figure.66 and the sex and category wise responses are presented as Figure 67.

Figure 66 : Q. 37 During your life how many times have you shared needles or syringes to inject any drug into your body ? (Total (N) = 5067)

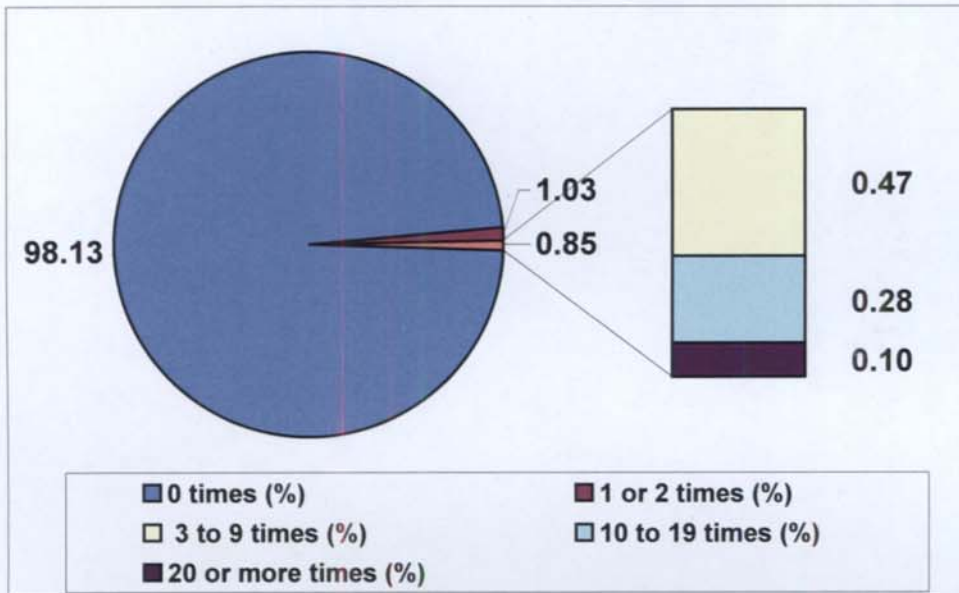


Figure 67 : Q. 37 During your life how many times have you shared needles or syringes to inject any drug into your body ? (Sex & Category wise)

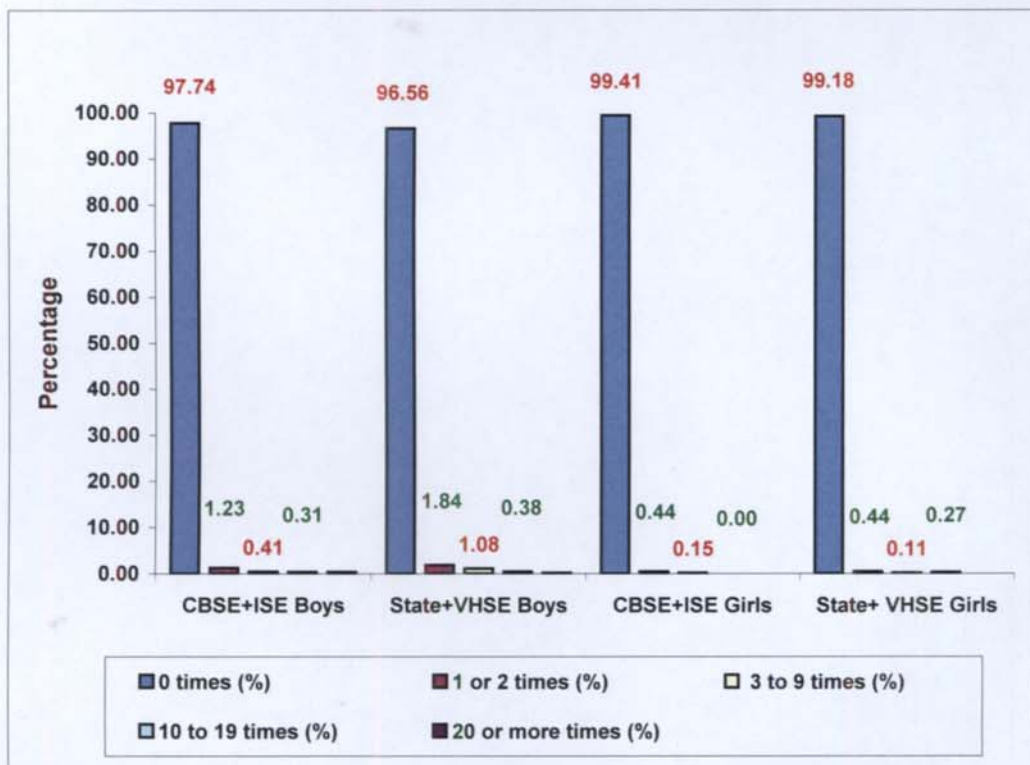


TABLE. 35
**Q. 38 During this school year were
 you taught in any of your classes the dangers of using drugs?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	588	60.37	897	57.06	444	65.01	1230	66.92
No (%)	322	33.06	530	33.72	193	28.26	512	27.86
I don't know (%)	64	6.57	145	9.22	46	6.73	96	5.22
Total	974		1572		683		1838	

Overall, in the case of both boys and girls combined show that 30.73% students were not taught about the dangers of using drugs in any of the classes during the last school year. Category wise, 42.94% of State+VHSE boys students are not taught about the dangers of using drugs, at the same time the prevalence were 39.63% among CBSE+ISE boys. While in the case of girls, 33.08% of the State+VHSE and 34.99% CBSE+ISE students were not taught about dangers of using drugs (Table 35).

The graphical representation to the responses to question No.38 is presented in Figure.68 and the sex and category wise responses is presented as Figure 69.

Figure 68 : Q. 38 During this school year were you taught in any of your classes the dangers of using drugs? (Total (N) = 5067)

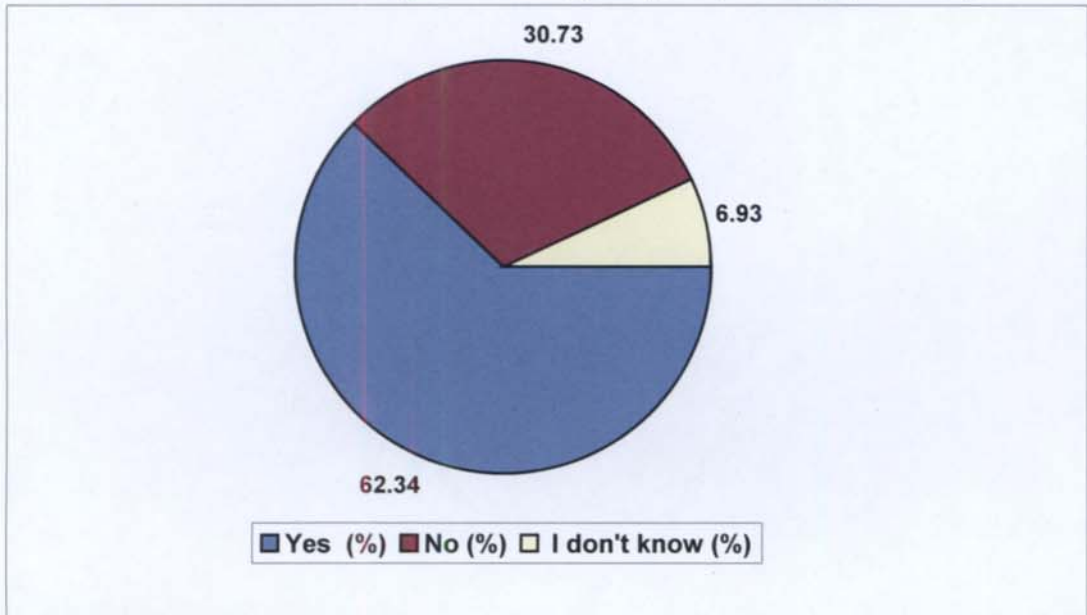


Figure 69 : Q. 38 During this school year were you taught in any of your classes the dangers of using drugs? (Sex & Category wise)

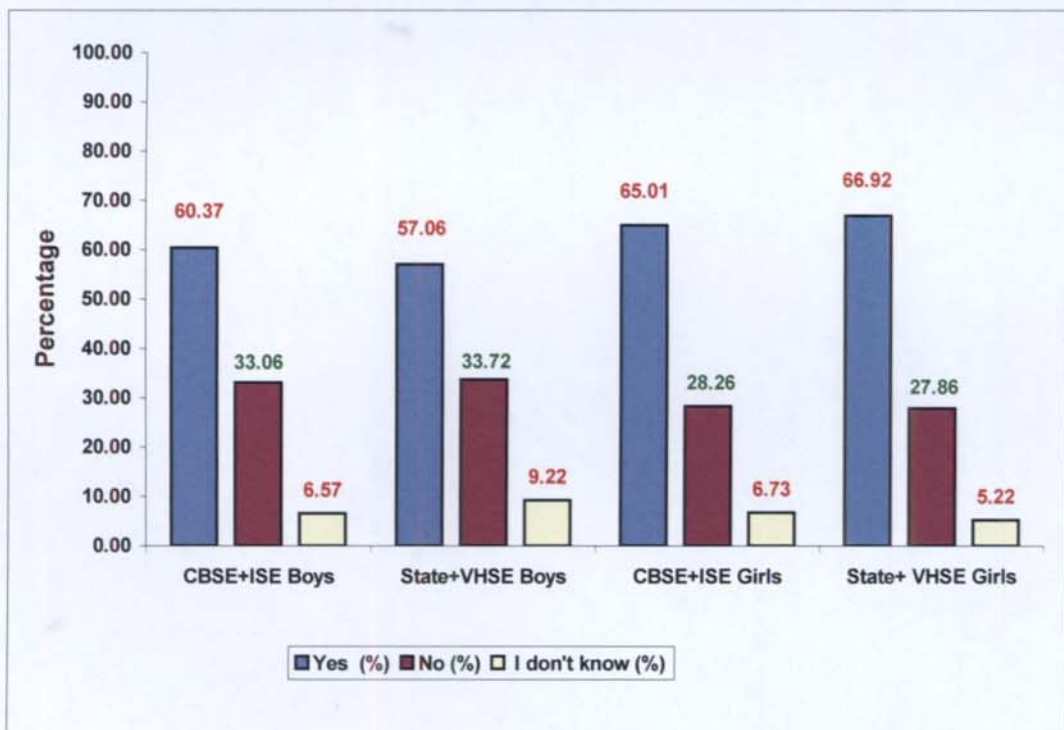


TABLE. 36
Q. 39 Have you ever heard of HIV or the disease called AIDS?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	942	96.71	1486	94.53	669	97.95	1792	97.50
No (%)	32	3.29	86	5.47	14	2.05	46	2.50
Total	974		1572		683		1838	

The above table numbered 36 shown that overall 3.51% of the students have never heard HIV or the disease called AIDS. Categorically, The prevalence of students who have never heard about HIV or the disease called AIDS is higher among the State+VHSE boys (5.47%) than CBSE+ISE boys (3.29%). While in the case of girls, the prevalence of students who have never heard of HIV or the disease called AIDS are 2.50% among State+VHSE and 2.05% among CBSE+ISE students.

The graphical representation to the responses to question No.39 is presented in Figure.70 and the sex and category wise responses are presented as Figure 71.

Figure 70 : Q. 39 Have you ever heard of HIV or the disease, called AIDS? (Total (N) = 5067)

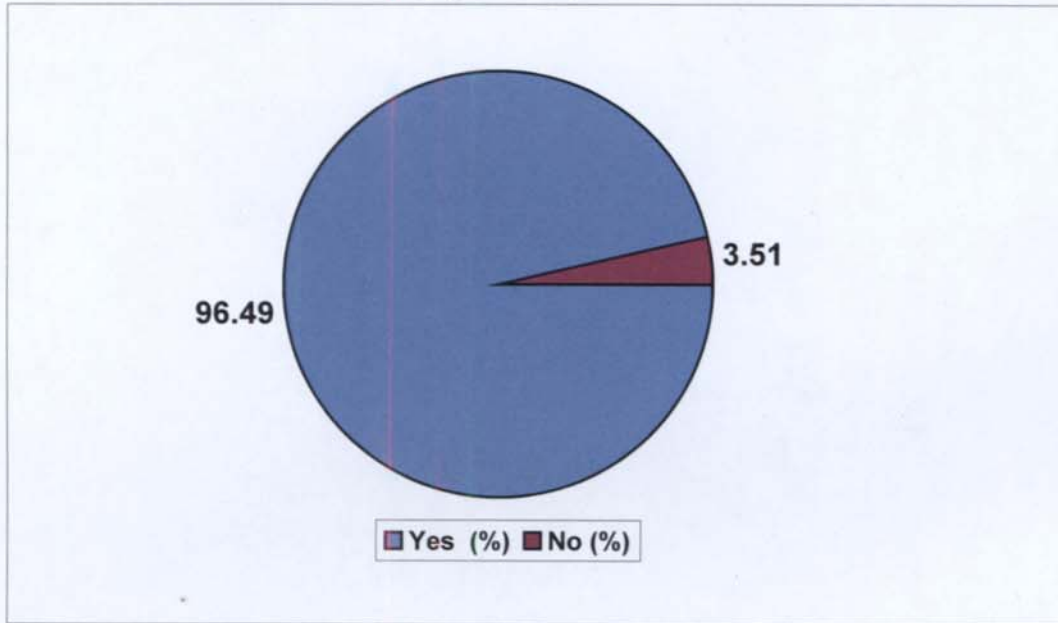


Figure 71 : Q. 39 Have you ever heard of HIV or the disease called AIDS? (Sex & category wise)

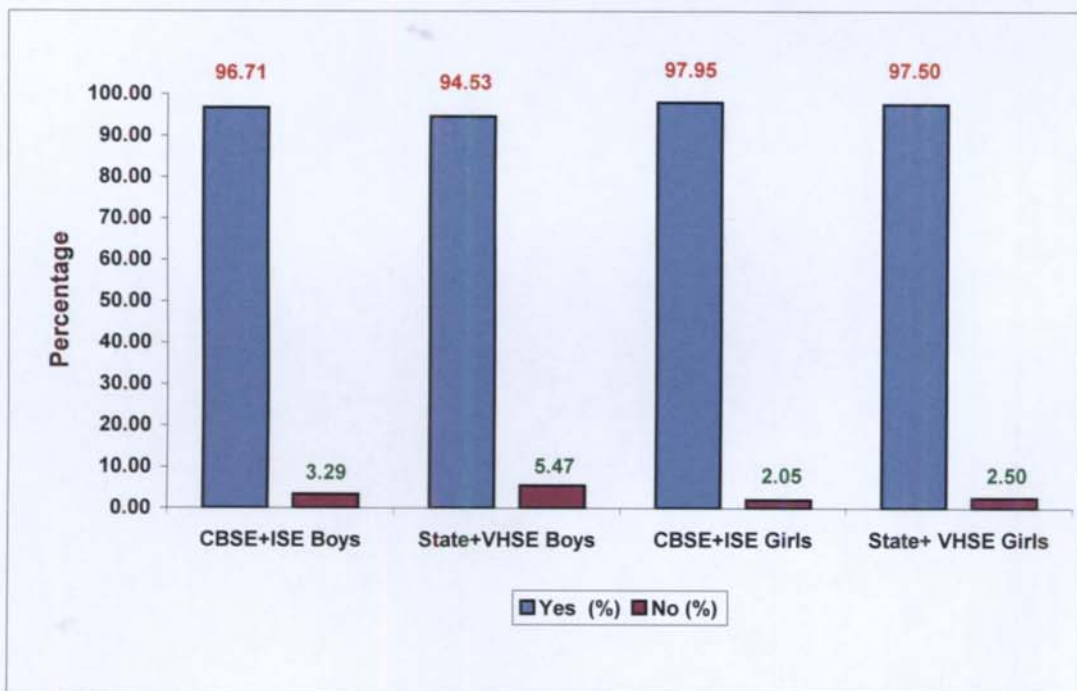


TABLE 37

Q. 40 During this school year, were you taught in any of your classes about HIV or AIDS?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	673	69.10	883	56.17	484	70.86	1090	59.30
No (%)	266	27.31	579	36.83	176	25.77	663	36.07
I don't know (%)	35	3.59	110	7.00	23	3.37	85	4.62
Total	974		1572		683		1838	

Table number 37 show that overall 38.22% of the students were not taught about HIV or AIDS in any of their classes. Categorically, the prevalence of students who were not taught about HIV or AIDS in any of your classes were higher among State+VHSE boys (43.83%) than the CBSE+ISE boys (30.9%) students. While, in the case of girl students, the prevalence of students who were not taught about HIV or AIDS in any of their classes were higher among State+VHSE (40.69%) than the CBSE+ISE (29.14%).

The graphical representation to the responses to question No.40 is presented in Figure.72 and the sex and category wise responses are presented as Figure 73.

Figure 72 : Q. 40 During this school year, were you taught, in any of your classes about HIV or AIDS? (Total (N) = 5067)

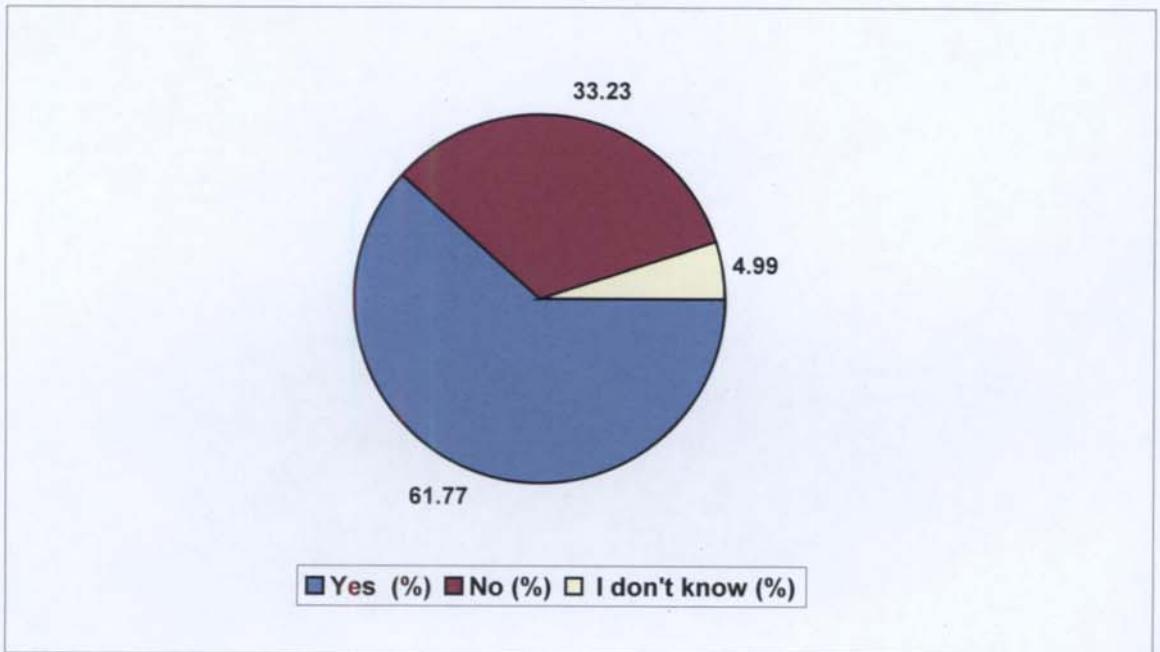


Figure 73 : Q. 40 During this school year, were you taught in any of your classes about HIV or AIDS? (Sex & Category wise)

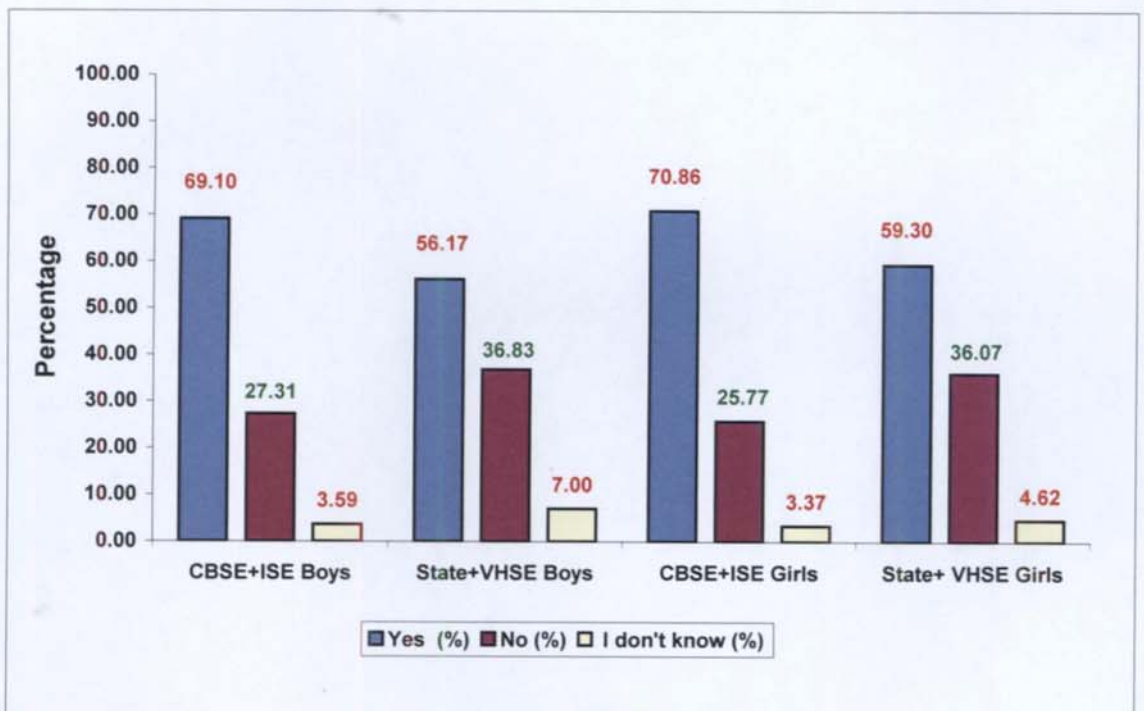


TABLE. 38

Q. 41 Can people get HIV infection or AIDS from mosquito bites?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	156	16.02	183	11.64	84	12.30	166	9.03
No (%)	752	77.21	1294	82.32	562	82.28	1572	85.53
I don't know (%)	66	6.78	95	6.04	37	5.42	100	5.44
Total	974		1572		683		1838	

Table No.38 above do indicates, 11.62% of students believe that people can get HIV infection or AIDS from mosquito bites and 5.88% of students are not sure whether mosquito bite can make a HIV infection or AIDS. Categorically, the prevalence of students believing that people can get HIV infection or AIDS from mosquito bites were higher among CBSE+ISE boys (16.02%) than the State+VHSE boys (11.64%).

While, in the case of girls students, the prevalence of students having the belief that people can get HIV infection or AIDS from mosquito bites were higher among CBSE+ISE (12.30%) than the State+VHSE (9.03%).

The graphical representation to the responses to question No.41 is presented in Figure.74 and the sex and category wise responses are presented as Figure 75.

Figure 74 :Q. 41 Can people get HIV infection or AIDS from mosquito bites? (Total (N) = 50675)

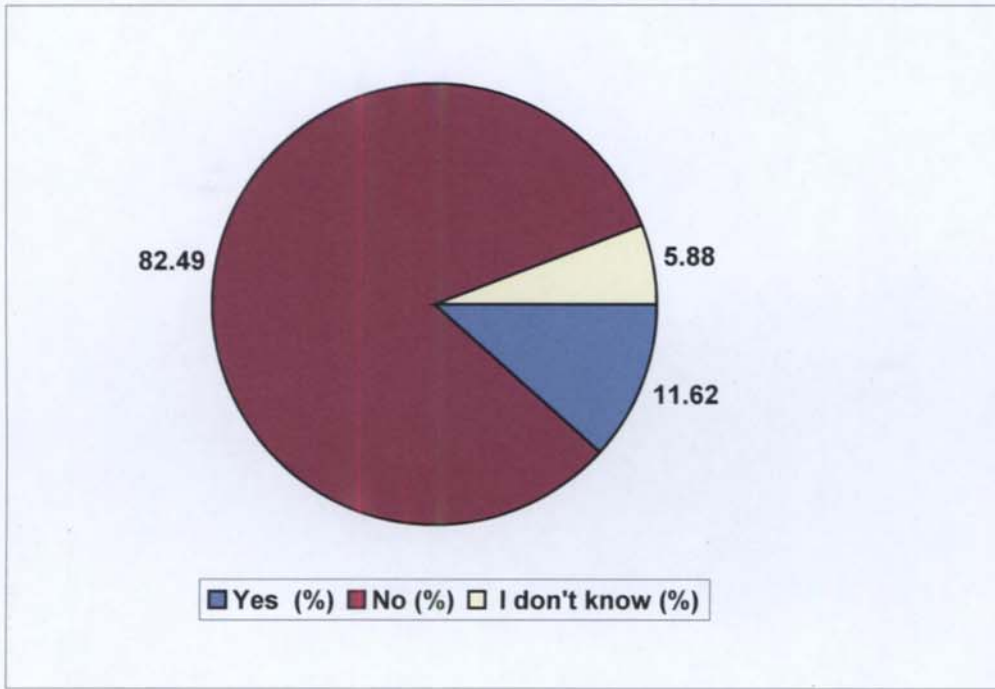


Figure 75 : Q. 41 Can people get HIV infection or AIDS from mosquito bites? (Sex & Category wise)

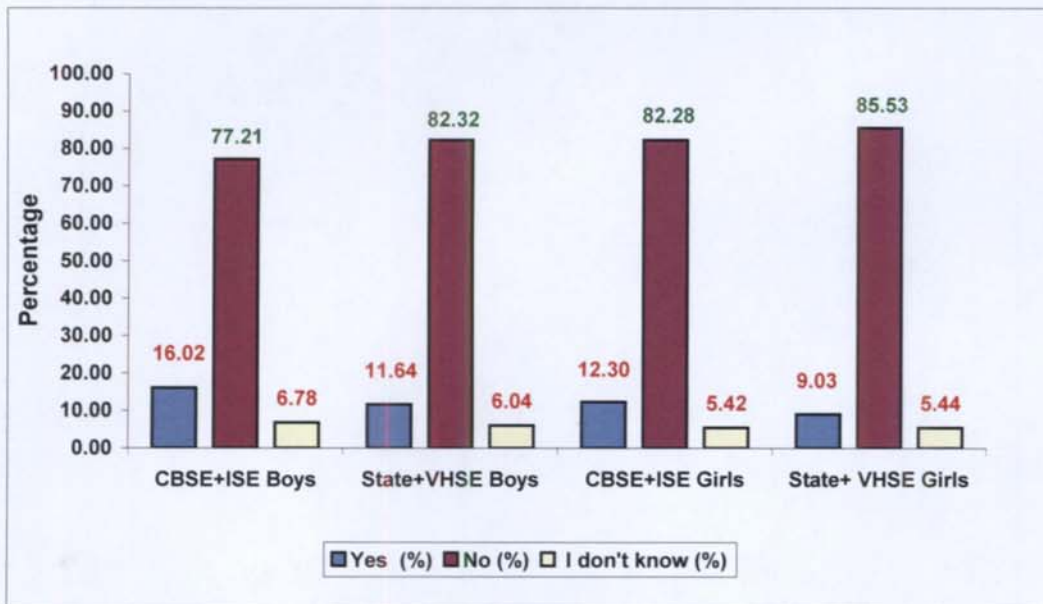


TABLE.39

Q. 42 Will people get infection of HIV by having sexual intercourse?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	936	96.10	1432	91.09	675	98.83	1698	92.38
No (%)	32	3.29	98	6.23	31	4.54	67	3.65
I don't know (%)	6	0.62	42	2.67	8	1.17	73	3.97
Total	974		1572		714		1838	

The above table indicates that 4.50% of students believe that people will not get infection of HIV by having sexual intercourse and 2.55% of students are not aware about whether people get infection of HIV by having sexual intercourse when the state of Kerala is taken as a whole. Categorically, the prevalence of students having belief that people will not get infection of HIV by having sexual intercourse were higher among State+VHSE boys (6.23%) than the CBSE+ISE boys (3.29%). The prevalence of students who are not aware whether people get infection of HIV by having sexual intercourse is also higher among State+VHSE boys (2.67%) than CBSE+ISE boys (0.62%).

While in the case of girls, the prevalence of students who believe that people will not get infection of HIV by having sexual intercourse were higher among CBSE+ISE (4.54%) than State+VHSE (3.65%) students.

The graphical representation to the responses to question No.42 is presented in Figure.76 and the sex and category wise responses are presented as Figure 77.

Figure 76 : Q. 42 Will people get infection of HIV by having sexual intercourse? (Total (N) = 5067)

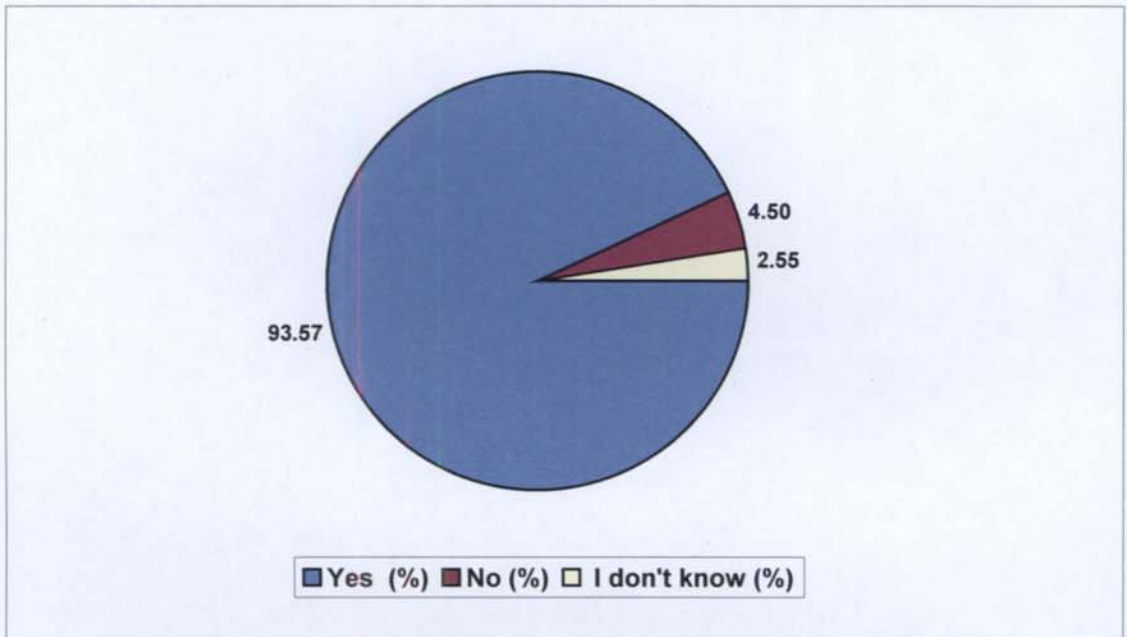


Figure 77: Q. 42 Will people get infection of HIV by having sexual intercourse? (Sex & Category wise)

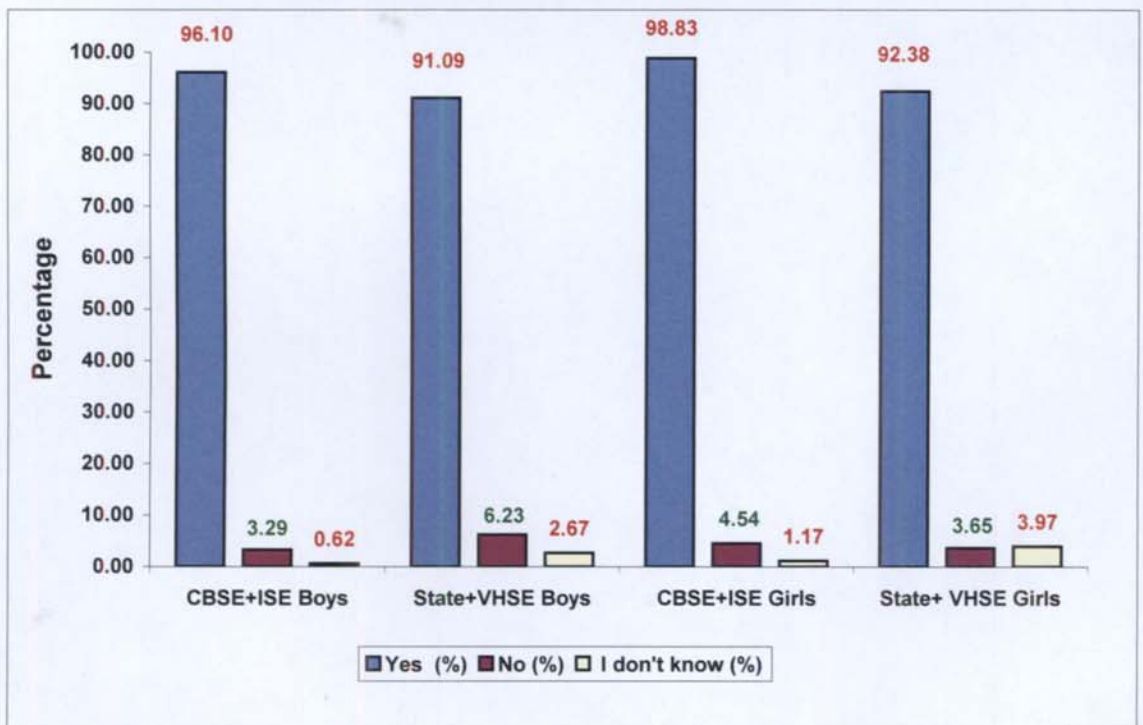


TABLE. 40

Q. 43 Will people get infection of HIV through blood transfusion?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	910	93.43	1333	84.80	625	91.51	1598	86.94
No (%)	38	3.90	169	10.75	32	4.69	138	7.51
I don't know (%)	26	2.67	70	4.45	26	3.81	102	5.55
Total	974		1572		683		1838	

The above table do indicates 7.44% of students having belief that people will not get infection of HIV through blood transfusion and 4.42% of students are not aware about whether people get infection of HIV through blood transfusion when all the students were taken as a sample group. Categorically, the prevalence of students believe that people will not get infection of HIV through blood transfusion were higher among State+VHSE boys (10.75%) than the CBSE+ISE boys (3.90%). The prevalence of students who are not aware whether the people get infection of HIV through blood transfusion is also higher among State+VHSE boys (4.45%) than CBSE+ISE boys (2.67%).

While in the case of girls, the prevalence of students believe that people will not get infection of HIV through blood transfusion were higher among State+VHSE (7.51%) than CBSE+ISE (4.69%) students.

The graphical representation to the responses to question No.43 is presented in Figure.78 and the sex and category wise responses are presented as Figure 79.

Figure 78 : Q. 43 Will people get infection of HIV through blood transfusion? (Total (N) = 5067)

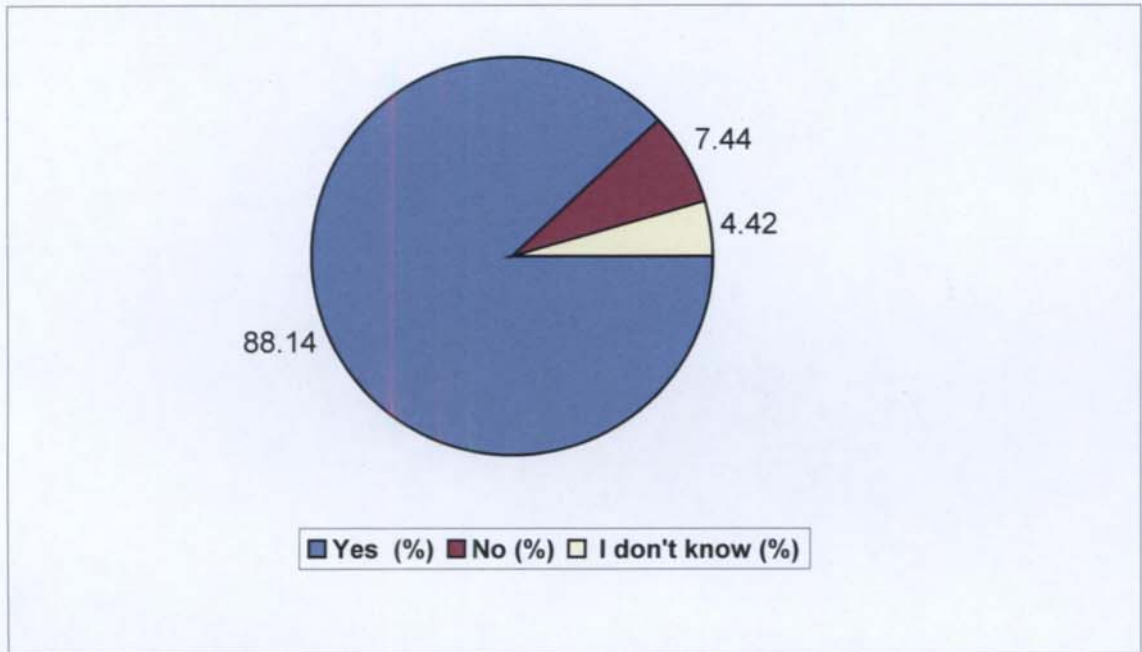


Figure 79: Q. 43 Will people get infection of HIV through blood transfusion? (Sex & Category wise)

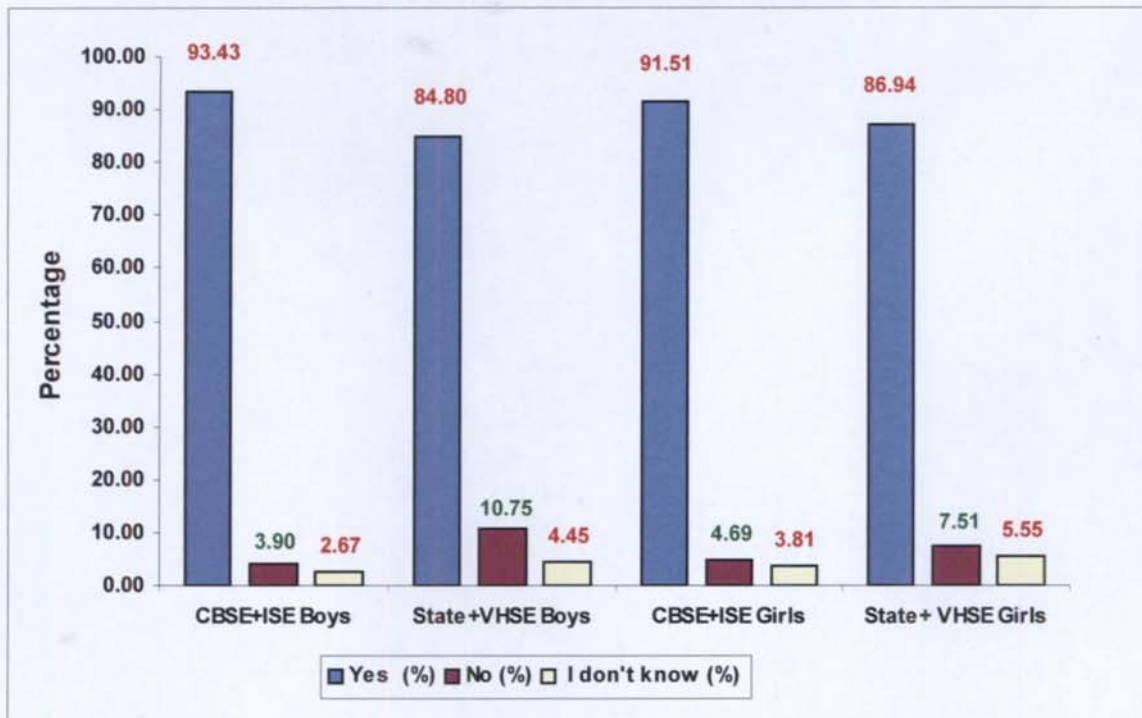


TABLE. 41

**Q. 44 Will people get infection of HIV
by using common syringes of medical injection?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHS E Girls (%)
Yes (%)	857	87.99	1275	81.11	604	88.43	1497	81.45
No (%)	70	7.19	156	9.92	45	6.59	151	8.22
I don't know (%)	47	4.83	140	8.91	34	4.98	190	10.34
Total	974		1571		683		1838	

The above table numbered 44 do indicates 8.33% of students do have belief that people will not get infection of HIV by using common syringes of medical injection and 8.11% of students are not aware about whether people get infection of HIV by using common syringes of medical injection. Categorically, the prevalence of students believe that people will not get infection of HIV by using common syringes of medical injection were higher among State+VHSE boys (9.92%) than the CBSE+ISE boys (7.19%). Besides 8.91% of state + VHSE boys and 4.83% CBSE + ISE boys are not aware whether people get infected with HIV by using common syringes of medical injection.

While in the case of girls 6.59% of CBSE + ISE and 8.22% of state + VHSE students have belief that people will not get infection of HIV by using common syringes of medical injection.

The graphical representation to the responses to question No.44 is presented in Figure.80 and the sex and category wise responses are presented as Figure 81.

Figure 80: Q. 44 Will people get infection of HIV by using common syringes of medical injection? (Total (N) = 5067)

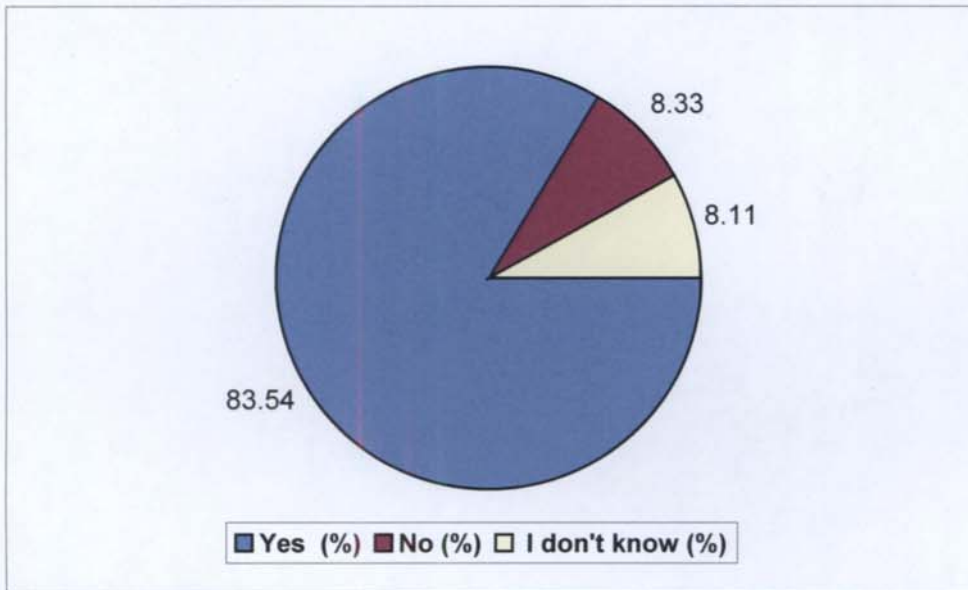


Figure 81 : Q. 44 Will people get infection of HIV by using common syringes of medical injection? (Sex & Category wise)

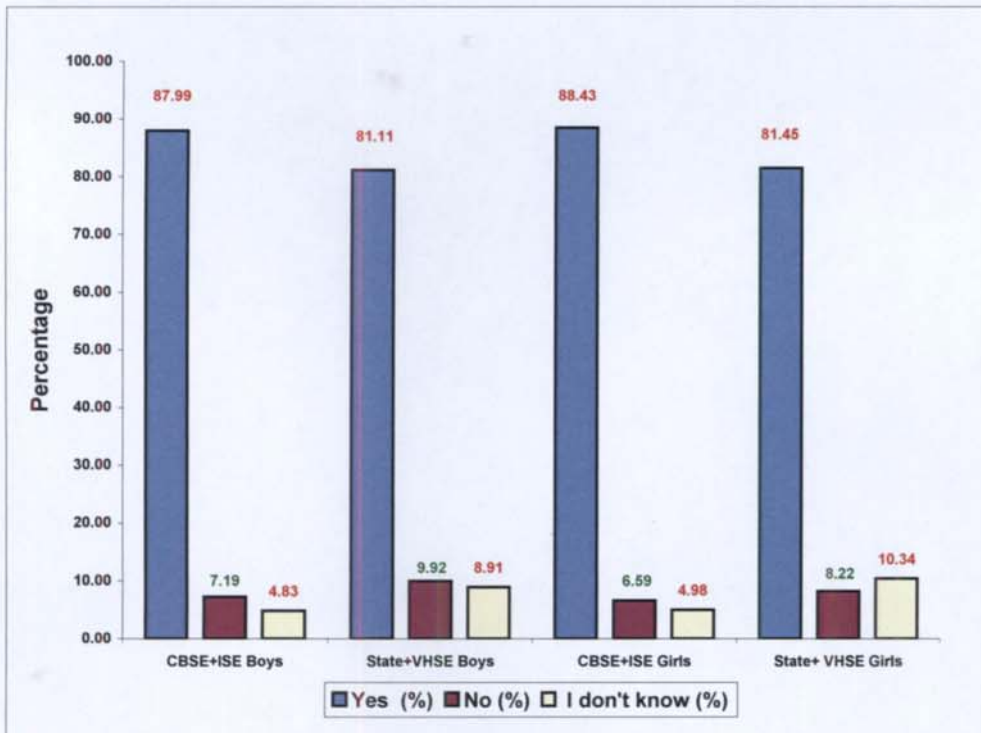


TABLE. 42

Q. 45 Will people get infection of HIV by a touch from an AIDS patient?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	81	8.32	144	9.16	47	6.88	92	5.01
No (%)	867	89.01	1366	86.90	615	90.04	1660	90.32
I don't know (%)	26	2.67	62	3.94	21	3.07	86	4.68
Total	974		1572		683		1838	

The above table do indicates that 7.18% of students of Kerala believe that people will get infection of HIV by a touch from an AIDS patient besides 3.85% of students does not know that whether people get infection of HIV by a touch from an AIDS patient. Categorically, the prevalence of students who believe that people will get infection of HIV by a touch from an AIDS patient were higher among State+VHSE boys (9.16%) than the CBSE+ISE boys (8.32%). Besides, the prevalence of students who does not know whether people get infection of HIV by a touch from an AIDS patient is also higher among State+VHSE boys (3.94%) than CBSE+ISE boys (2.67%).

While in the case of girls, the prevalence of students who believe that people will get infection of HIV by a touch from an AIDS patient were higher among CBSE+ISE (6.88%) than State+VHSE students (5.01%). At the same

time the prevalence of girl students who does not know whether people get infection of HIV by a touch from an AIDS patient is also higher among State+VHSE (4.68%) than CBSE+ISE (3.07%).

The graphical representation to the responses to question No.45 is presented in Figure.82 and the sex and category wise responses are presented as Figure 83.

Figure 82 : Q. 45 Will people get infection of HIV by a touch from a AIDS patient? (Total (N) = 5067)

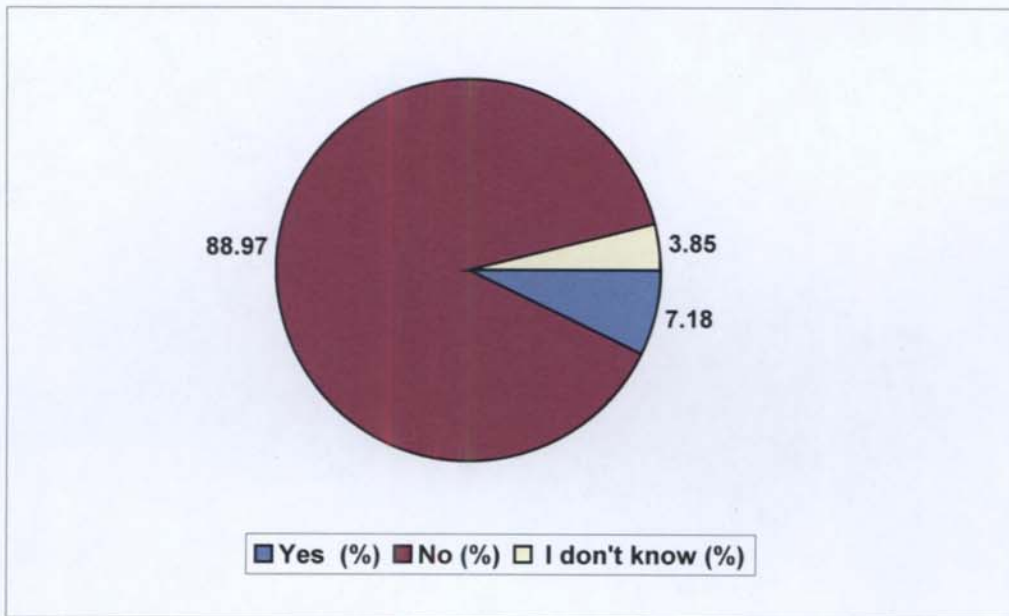


Figure 83 : Q. 45 Will people get infection of HIV by a touch from a AIDS patient? (Sex & Category wise)

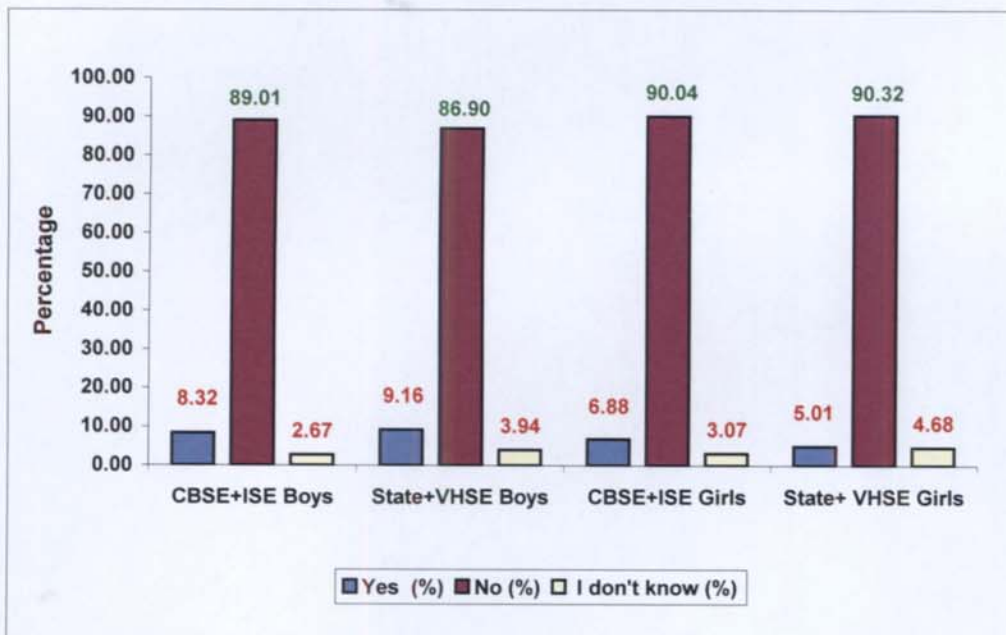


TABLE. 43

Q. 46 During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 days (%)	333	34.19	488	31.04	348	50.95	1060	57.67
1 or 2 days (%)	161	16.53	389	24.75	124	18.16	346	18.82
3 or 4 days (%)	158	16.22	208	13.23	62	9.08	228	12.40
5 or 6 days (%)	134	13.76	178	11.32	83	12.15	139	7.56
7 days (%)	188	19.30	309	19.66	66	9.66	65	3.54
Total	974		1572		683		1838	

Table 26 indicates that 43.99% of students who participated in this study had not participated in any vigorous or moderate physical activity a total of at least 60 min/ day during the 7 days preceding the survey, while 20.13% of students participated one or two days of at least 60 min/ day during the 7 days preceding the survey. At the same time 35.88% of students had participated in any vigorous or moderate physical activity 3 days or more of at least 60 min/ day during the 7 days preceding the survey. Category wise, the prevalence of students who have not participated in any kind of physical activity was higher among CBSE+ISE boys (34.19%) than State+VHSE boys (31.04%) students. While the frequency of participation in one or two days a

total of at least 60 min/ day during the 7 days preceding the survey was higher among State+VHSE boys (24.75%) when compared to the CBSE+ISE male (16.53%) students.

At the same time, the frequency of participation in three or more days of at least 60 min/ day during the 7 days preceding the survey was higher among CBSE+ISE boys (49.28%) compared to the State+VHSE male (44.21%) students.

While in the case of girls, the prevalence of students who have not participated in any kind of physical activity was higher among State+VHSE girl (57.67%) than CBSE+ISE girl (50.95%) students. At the same the frequency of participation in one or two days of at least 60 min/ day during the 7 days preceding the survey was higher among State+VHSE girls (18.82%) compare to the CBSE+ISE girl (18.16%) students.

Besides, the frequency of participation in three or more days of at least 60 min/ day during the 7 days preceding the survey was higher among CBSE+ISE girl (30.89%) when compared to the State+VHSE girl (23.5%) students.

The graphical representation to the responses to question No.46 is presented in Figure.84 and the sex and category wise responses are presented as Figure 85.

Figure 84 : Q. 46 During a usual week, on how many days, are you physically active for a total of at least 60 min. per day ? (Total (N) = 5067)

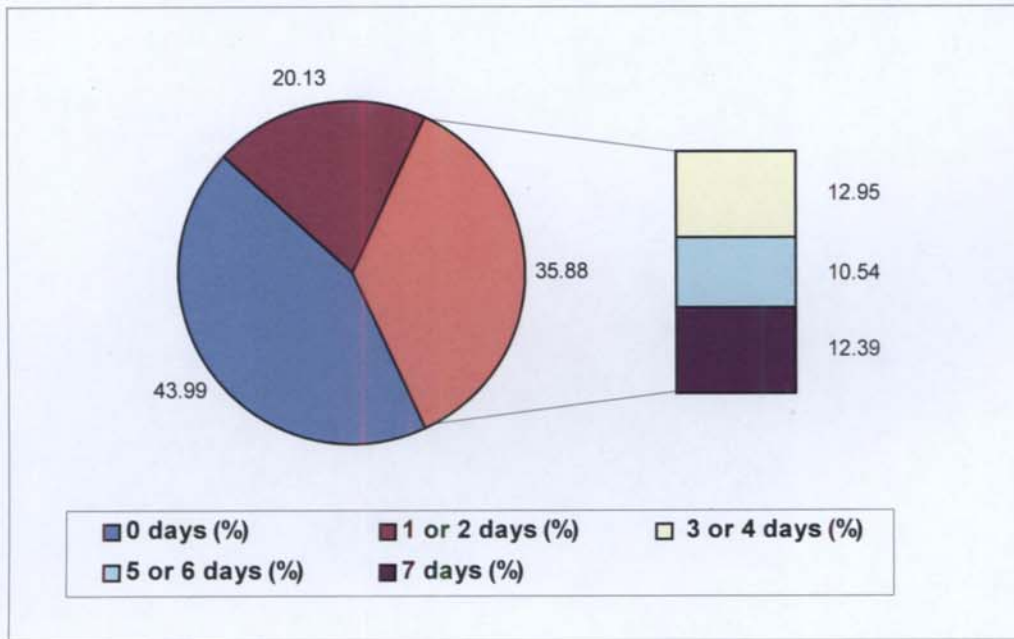


Figure 85 : Q. 46 During a usual week, on how many days are you physically active for a total of at least 60 min. per day ? (Sex & Category wise)

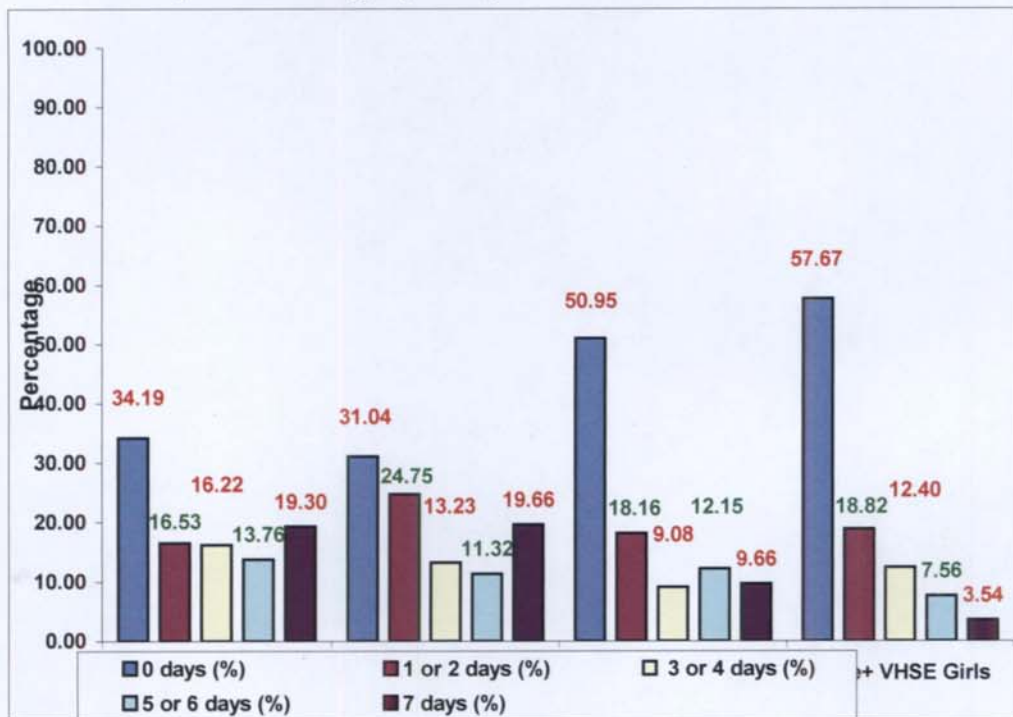


TABLE. 44

**Q. 47 How much time
do you spent during a usual day
sitting and watching television, playing
computer games, talking with friends or doing other sitting
activities such as reading books, playing chess or playing scrabble ?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Less than one hour /day (%)	206	21.15	362	23.03	144	21.08	535	29.11
1 to 2 hours/day (%)	377	38.71	648	41.22	276	40.41	799	43.47
3 to 4 hours/day (%)	231	23.72	384	24.43	153	22.40	321	17.46
5 to 6 hours/day (%)	79	8.11	98	6.23	61	8.93	113	6.15
More than 7 hours/day (%)	81	8.32	80	5.09	49	7.17	70	3.81
Total	974		1572		683		1838	

Table 44 indicates 33.95% of students who participated in the survey watched television, played video or computer ≥ 3 hours/ day on an average school day. While the prevalence having watched television, played video or computer ≥ 3 hours/ day on an average school day is higher among CBSE+ISE boys (40.15%) than State+VHSE boys (35.75%). The same trend is also observed in the case of CBSE+ISE girls (38.5%) than State+VHSE girls (27.42%).

The graphical representation to the responses to question No.47 is presented in Figure.86 and the sex and category wise responses are presented as Figure 87.

Figure. 86 : Q. 47 How much time do you spent during a usual day sitting and watching television, playing computer games, talking with friends or doing other sitting activities such as reading books, playing chess or playing scrabble ? (Total (N) = 5067)

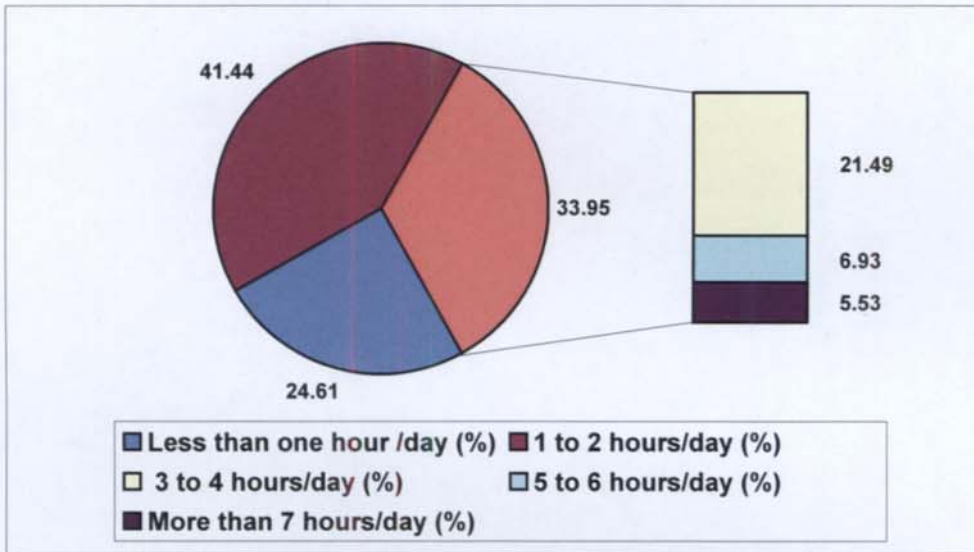


Figure 87 : Q.47How much time to you spend during a usual day sitting and watching television, playing computer games, talking with friends or doing other sitting activities such as reading books, playing chess or playing scrabble? (Sex & Category wise)

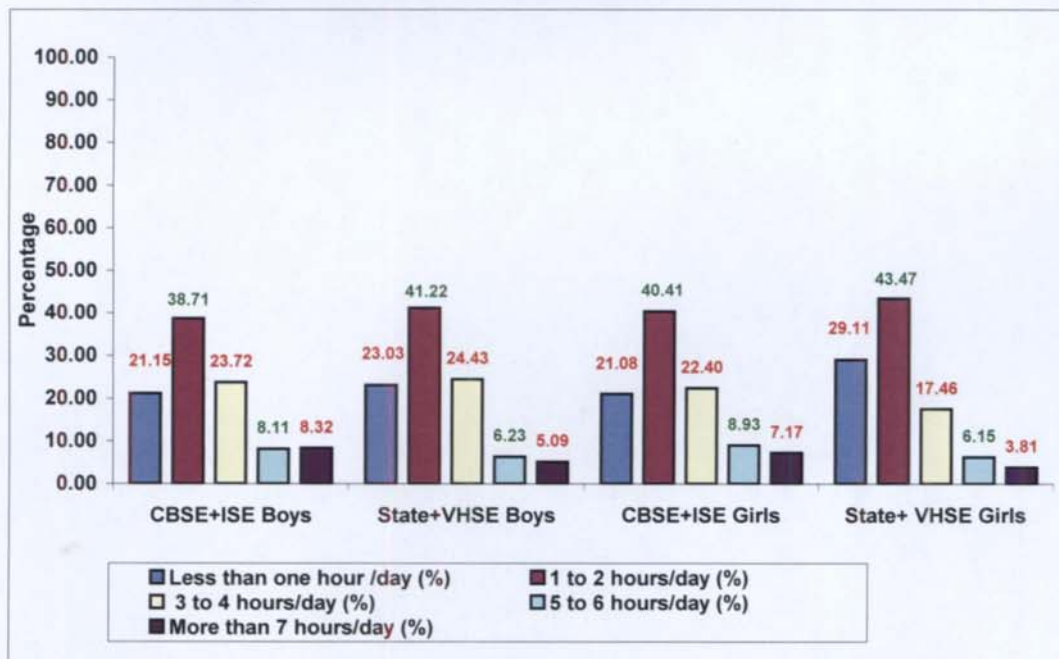


TABLE. 45

Q. 48 During the past 7 days on how many days did you walk or ride a bicycle to and from school ?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 days (%)	433	44.46	661	42.05	355	51.98	881	47.93
1 or 2 days (%)	145	14.89	240	15.27	98	14.35	219	11.92
3 or 4 days (%)	106	10.88	139	8.84	51	7.47	85	4.62
5 or 6 days (%)	115	11.81	195	12.40	63	9.22	254	13.82
7 days (%)	175	17.97	337	21.44	116	16.98	399	21.71
Total	974		1572		683		1838	

Table 45 do indicates that 40.16% students who participated in the survey walk or ride a bicycle to and from the school ≥ 3 days during the past 7 days preceding the survey and the prevalence of students who walk or ride a bicycle to and from the school ≥ 3 days during the past 7 days preceding the survey was higher among State+VHSE boys (42.68) than CBSE+ISE boys (40.66%). The same trend was also seen in the case of girls; as students who walk or ride a bicycle to and from the school ≥ 3 days during the past 7 days preceding the survey is higher among State+VHSE (40.15%) than CBSE+ISE (33.67%) students.

The graphical representation to the responses to question No.48 is presented in Figure.88 and the sex and category wise responses are presented as Figure 89.

Figure 88 : Q. 48 During the past 7 days on how many days did you walk or ride a bicycle to and from school?
(Total (N) = 5067)

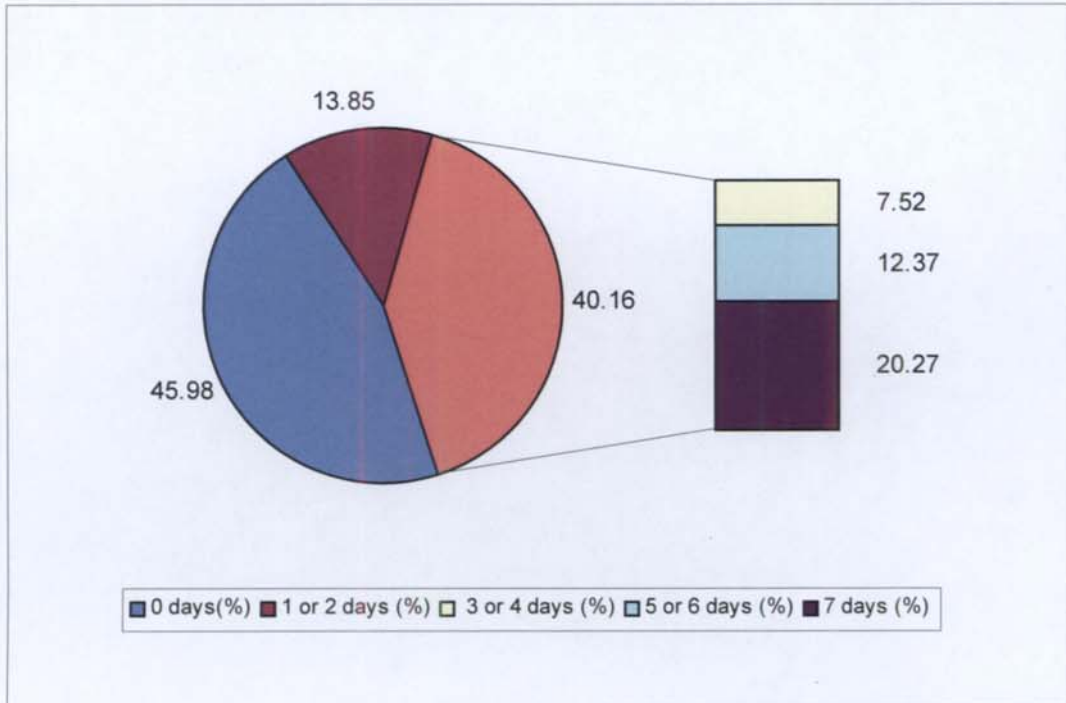


Figure 89 : Q. 48 During the past 7 days on how many days did you walk or ride a bicycle to and from school ?
(Sex & Category wise)

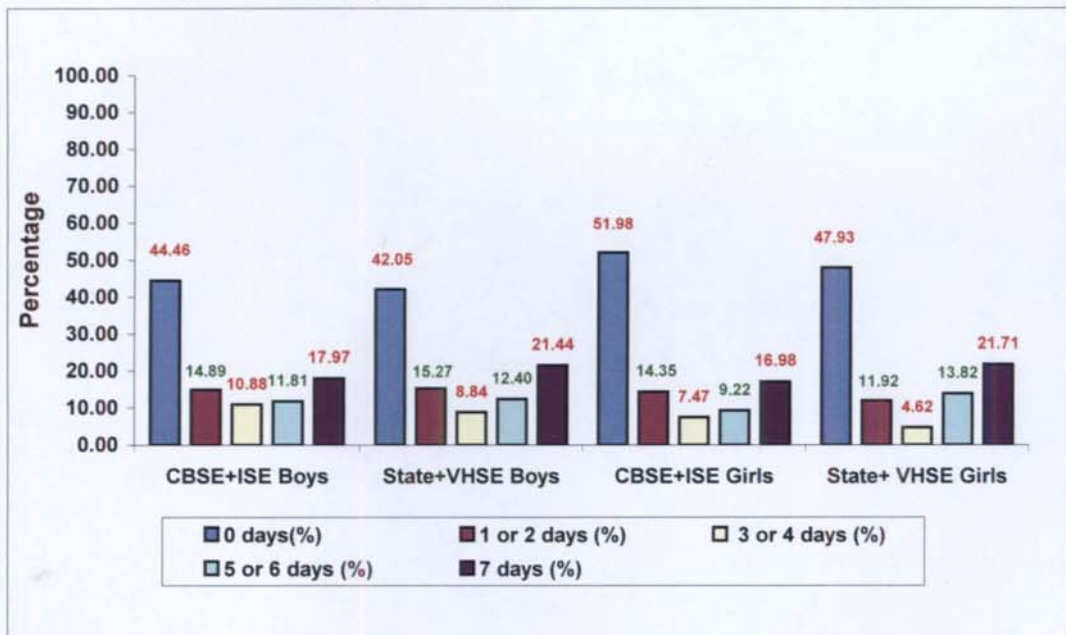


TABLE. 46
Q. 49 During the past 30 days, on
how many days did you miss classes or school without permission?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 days(%)	532	54.62	768	48.85	446	65.30	110 9	60.34
1 or 2 days (%)	250	25.67	476	30.28	170	24.89	515	28.02
3 to 5 days (%)	108	11.09	204	12.98	28	4.10	114	6.20
6 to 9 days (%)	50	5.13	63	4.01	18	2.64	47	2.56
10 or more days (%)	34	3.49	61	3.88	21	3.07	53	2.88
Total	974		1572		683		183 8	

The table 46 do indicates that 15.81% of students who participated in the survey missed classes or school ≥ 3 days during the past 30 days preceding the survey. Overall, the prevalence of students who missed classes or school ≥ 3 days during the past 30 days preceding the survey was higher among State+VHSE boys (20.87%) than the CBSE+ISE boys (19.71%) students. While in the case of girls, the same trend had been seen, hence the prevalence of students who missed classes or school ≥ 3 days during the past 30 days preceding the survey was higher among the State+VHSE girls (11.64%) than CBSE+ISE girl (9.81%) students.

The graphical representation to the responses to question No.49 presented in Figure.90 and the sex and category wise responses are presented as Figure 91.

Figure 90: Q. 49 During the past 30 days, on how many days did you miss classes or school without permission? (Total (N) = 5067)

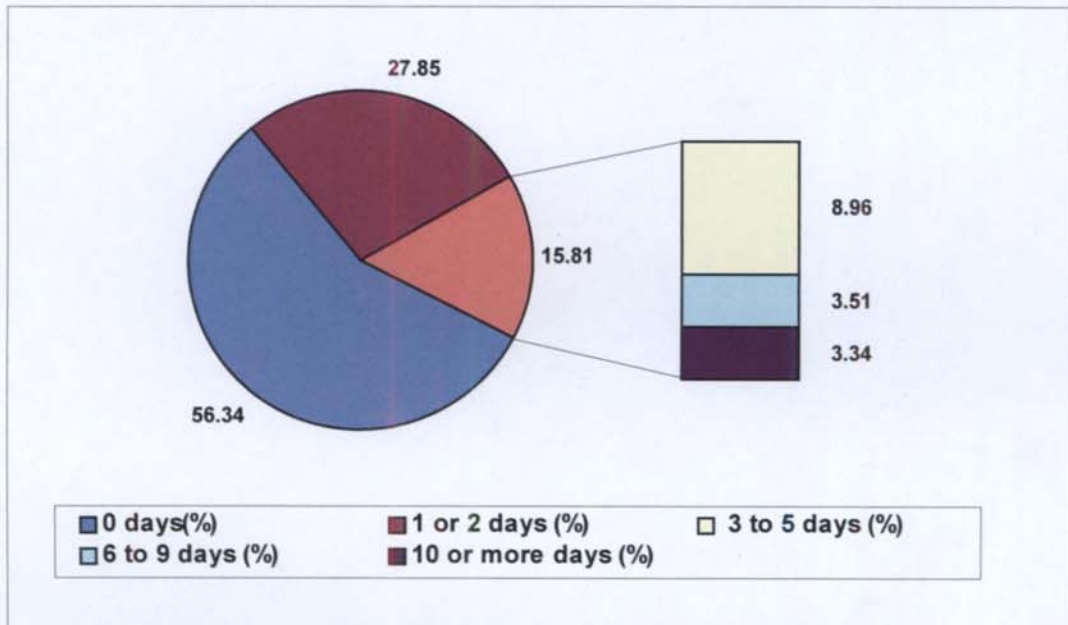


Figure 91 : Q. 49 During the past 30 days, on how many days did you miss classes or school without permission? (Sex & Category wise)

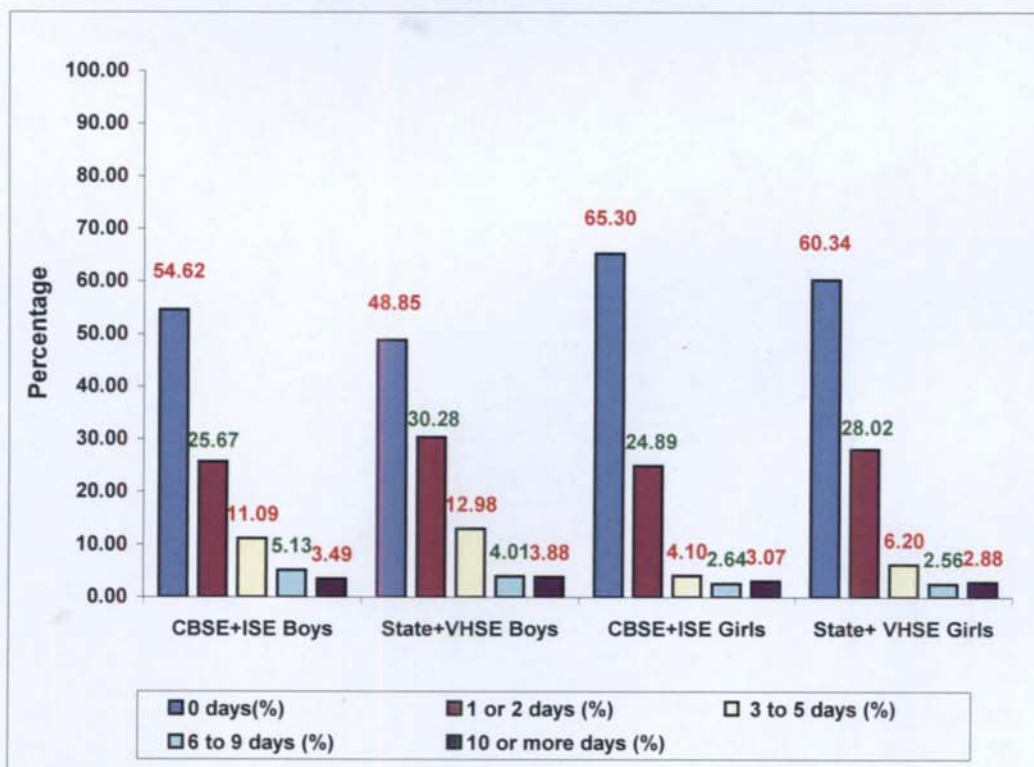


TABLE. 47

Q. 50 During the past 30 days, how often did your parents or guardian understand your problems and worries?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Never (%)	180	18.48	404	25.70	94	13.76	321	17.46
Rarely (%)	177	18.17	347	22.07	96	14.06	319	17.36
Some times (%)	279	28.64	353	22.46	127	18.59	351	19.10
Most of the time (%)	216	22.18	256	16.28	185	27.09	415	22.58
Always (%)	122	12.53	212	13.49	181	26.50	432	23.50
Total	974		1572		683		1838	

Table 47 indicates that 19.72% of students who participated in the survey believe that their parents or guardian never understands their problems and worries and at the same time 18.53% students believe that their parents or guardian rarely understands their problems and worries during the past 30 days preceding the survey.

Categorically, the prevalence of students who believe that their parents or guardian never understands their problems and worries were higher among State+VHSE boys (25.70%) than CBSE+ISE boys (18.48%). At the same time the prevalence of students, who believe that their parents or guardian

rarely understands their problems and worries were also higher among State+VHSE boys (22.07%) than CBSE+ISE boys (18.17%).

While in the case of girls, the prevalence of students who believe that their parents or guardian never understands their problems and worries were higher among State+VHSE girls (17.46%) than CBSE+ISE girls (13.76%). At the same time the prevalence of students who believe that their parents or guardian rarely understands their problems and worries were also higher among State+VHSE girls (17.36%) than CBSE+ISE girls (14.06%).

The graphical representation to the responses to question No.50 is presented in Figure.92 and the sex and category wise responses are presented as Figure 93.

Figure 92: Q. 50 During the past 30 days, how often did your parents or guardian understand your problems and worries ? (Total (N) = 5067)

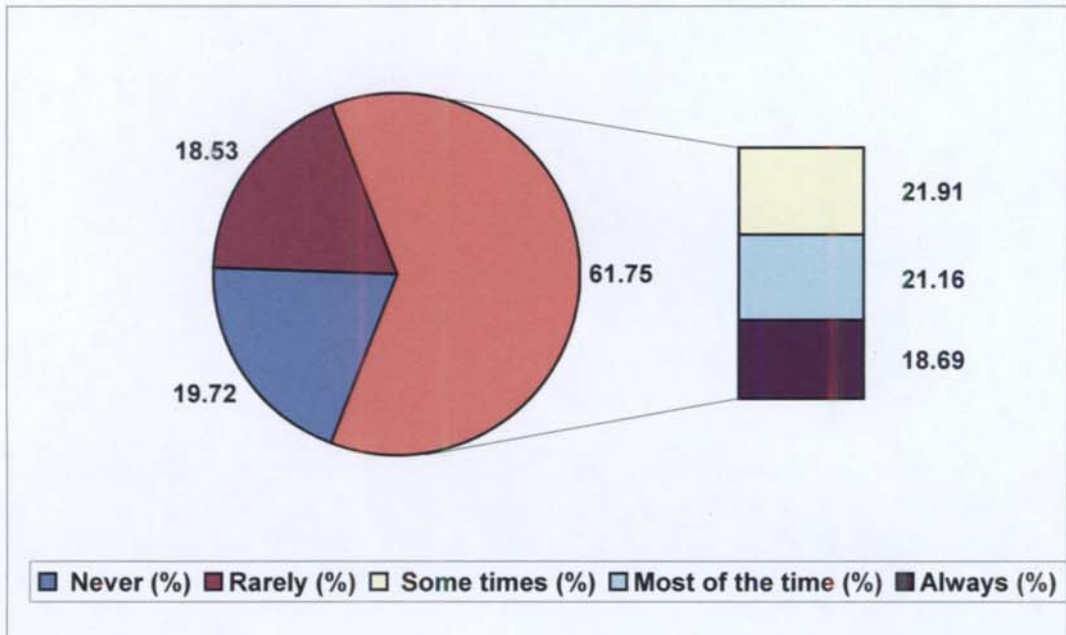


Figure 93 : Q. 50 During the past 30 days, how often did your parents or guardian understand your problems and worries ? (Sex & Category wise)

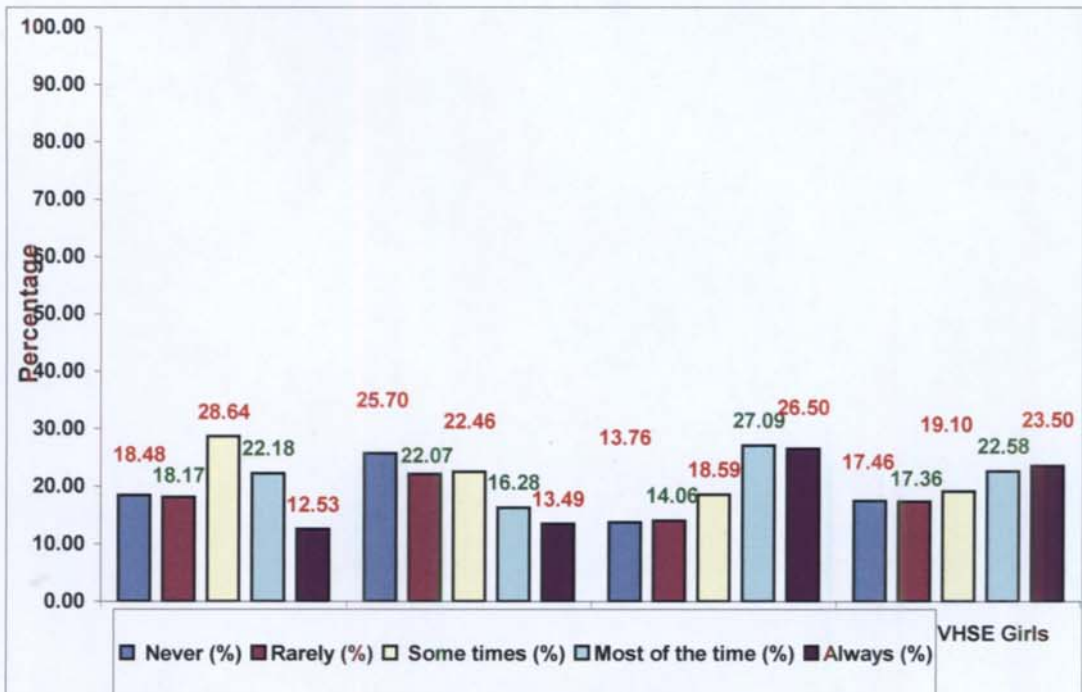


TABLE. 48

Q. 51 During the past 30 days, how often did your parents or guardian really know what you were doing with your free time ?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Never (%)	201	20.64	440	27.99	92	13.47	384	20.89
Rarely (%)	148	15.20	287	18.26	84	12.30	276	15.02
Some times (%)	255	26.18	346	22.01	134	19.62	325	17.68
Most of the time (%)	231	23.72	292	18.58	194	28.40	436	23.72
Always (%)	137	14.07	206	13.10	179	26.21	417	22.69
Total	972		1571		683		1838	

Table 48 indicates that 22.04% of students who participated in the survey believe that their parents or guardian never know what their wards are doing in their free time during the past 30 days preceding the survey and 15.69% students believe that their parents or guardian rarely know what their wards are doing their free time.

Categorically, the prevalence the students who believe that their parents or guardian never know what they are doing in their free time were higher among State+VHSE boys (27.99%) than CBSE+ISE boys (20.64%). Besides, the prevalence of students who believe that their parents or guardian rarely understands their problems and worries were also higher among State+VHSE boys (18.26%) than CBSE+ISE boys (15.20%).

While in the case of girls, the prevalence of students who believe that their parents or guardian never know what their wards are doing in their free time were higher among State+VHSE girls (20.89%) than CBSE+ISE girls (13.47%). At the same time the prevalence of students who believe that their parents or guardian rarely know what their wards are doing in their free time were also higher among State+VHSE girls (15.02%) than CBSE+ISE girls (12.30%).

The graphical representation to the responses to question No.51 is presented in Figure.94 and the sex and category wise responses are presented as Figure 95.

Figure 94 : Q. 51 During the past 30 days, how often did your parents or guardian really know what you were doing with your free time ? Total (N) = 5067)

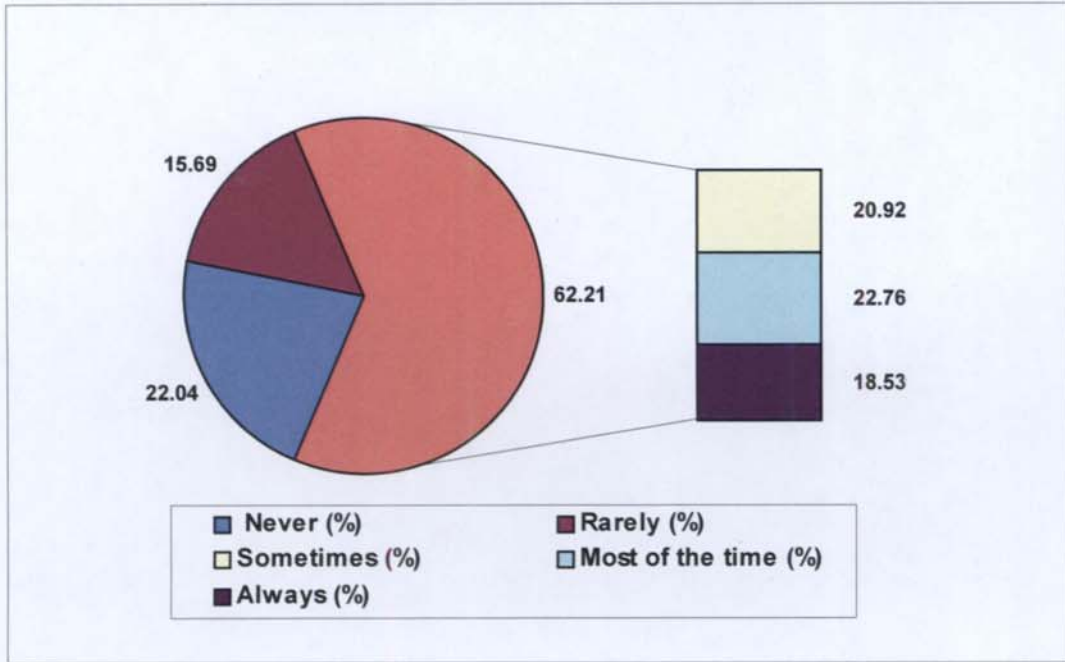


Figure 95 : Q. 51 During the past 30 days, how often did your parents or guardian really know what you were doing with your free time ? Sex & category wise)

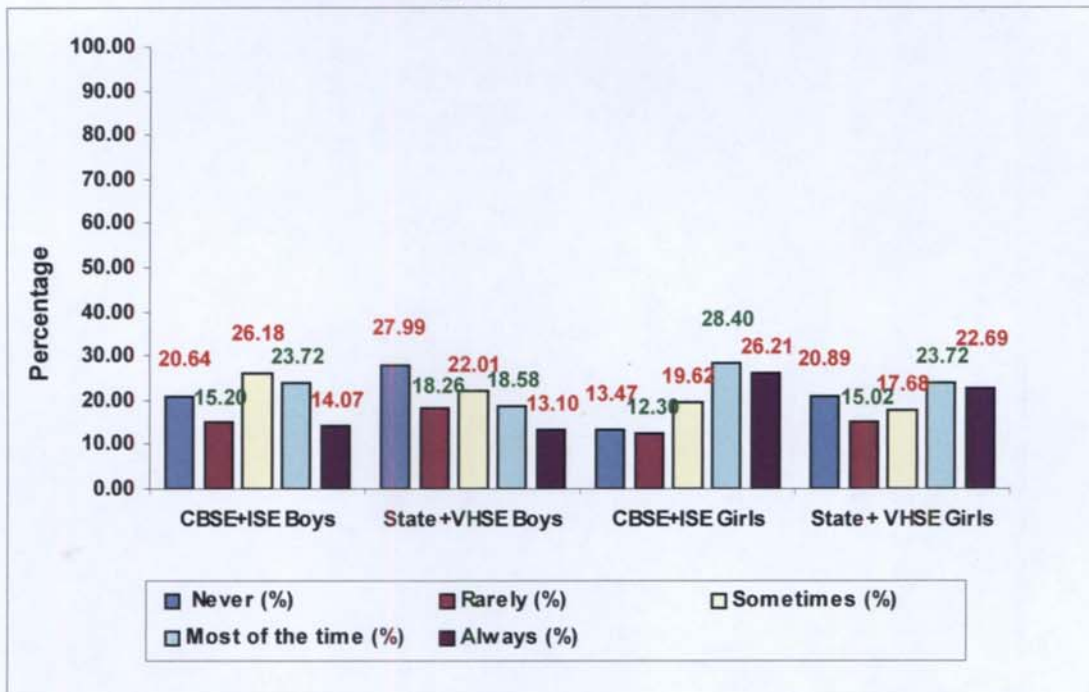


TABLE. 49
Q. 52 During this school year, on how many days did you got to physical education class each week?

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 days (%)	355	36.45	1341	85.31	263	38.51	1543	83.95
1 day (%)	619	63.55	231	14.69	420	61.49	295	16.05
2 days (%)	0	0.00	0	0.00	0	0.00	0	0.00
3 days (%)	0	0.00	0	0.00	0	0.00	0	0.00
4 or more days (%)	0	0.00	0	0.00	0	0.00	0	0.00
Total	974		1572		683		1838	

The table 49 above indicates that 69.11% of the students who have participated in the survey have not attended any classes of physical education during the current school year preceding the survey and 30.89% students have attended only one class in physical education each week preceding the survey. Zero percentage of students have attended the required number of physical education classes of more than 2 days/week.

Category-wise students who have not attended any classes of physical education during the current school year preceding the survey was higher among State+VHSE boys (85.31%) than CBSE+ISE boys (36.45%). Besides, 63.55% of CBSE+ISE boys have attended only one class in physical

education in a week during the school year preceding the survey when compared to the 14.69% of State+VHSE boys students.

While in the case of girl students who have not attended any classes of physical education during the current school year preceding the survey was higher among State+VHSE (83.95%) than CBSE+ISE (38.51%). Apart from that, 61.49% of CBSE+ISE girls have attended only one class in physical education in each week during the school year preceding the survey when compared to the 16.05% of State+VHSE girl students.

The graphical representation to the responses to question No.52 is presented in Figure.96 and the sex and category wise responses are presented as Figure 97.

Figure 96 :Q. 53 During this school year, on how many days did you get to physical education class each week ? (Total (N) = 5067)

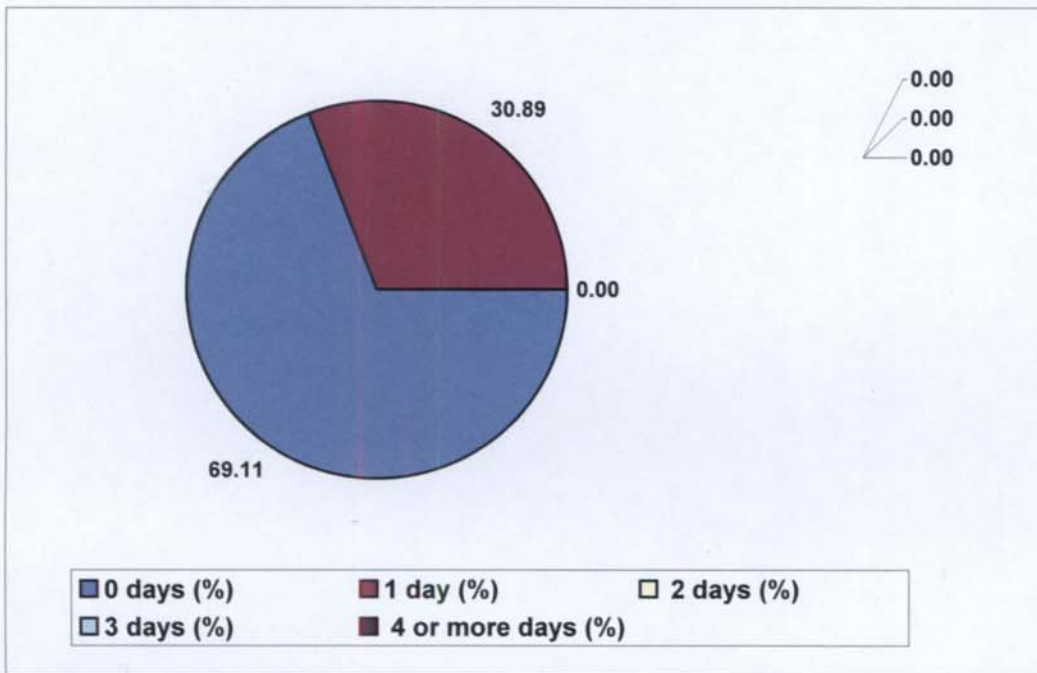


Figure 97 : Q. 52 During this school year, on how many days did you get to physical education class each week? (Sex & category wise)

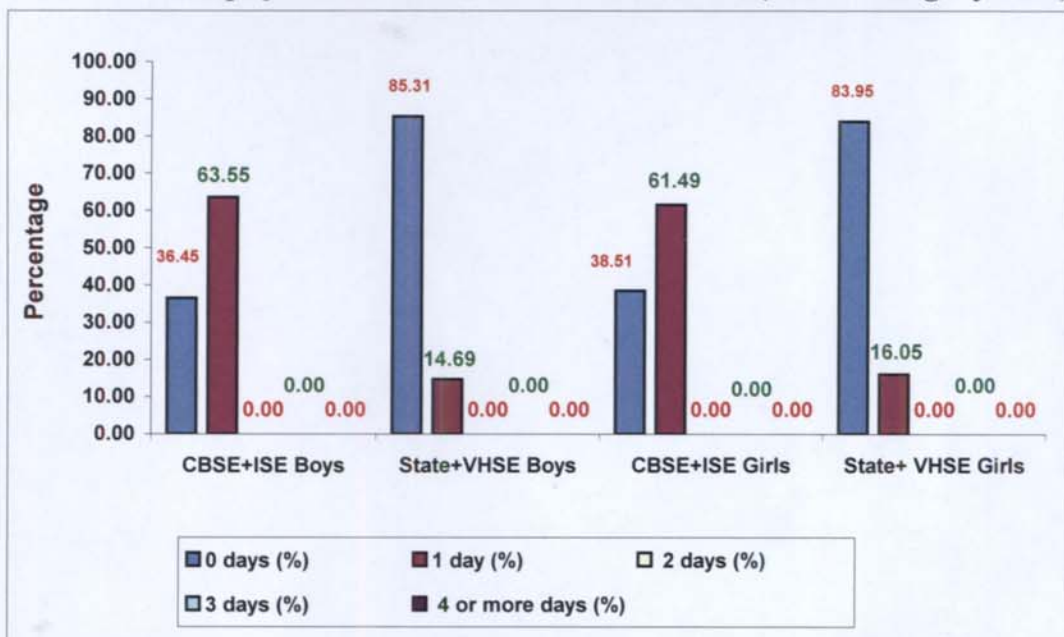


TABLE. 50

**Q. 53 During the past 12 months,
on how many sports teams did you play?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
0 team (%)	361	37.06	796	50.64	475	69.55	1636	89.01
1 team (%)	293	30.08	383	24.36	131	19.18	132	7.18
2 teams (%)	169	17.35	182	11.58	44	6.44	40	2.18
3 or more teams (%)	151	15.50	211	13.42	33	4.83	30	1.63
Total	974		1572		683		1838	

The table 50 above indicates that 64.50% of students who have participated in the survey have not played in any teams during the past 12 months and 35.50% of students have played in one or more teams during the past 12 months. Categorywise, the prevalence of students who have not played in any teams during the past 12 months is higher among State+VHSE boys (50.64%) than CBSE+ISE boys (37.06%) students.

While in the case of girls, 89.01% of State+VHSE girls have not represented any team during the past 12 month, which was very higher than the 69.55% of CBSE+ISE girl students.

The graphical representation to the responses to question No.53 is presented in Figure. 98 and the sex and category wise responses are presented as Figure 99.

Figure 98 : Q. 53 During the past 12 months, on how many sports teams did you play? (Total (N) = 5067)

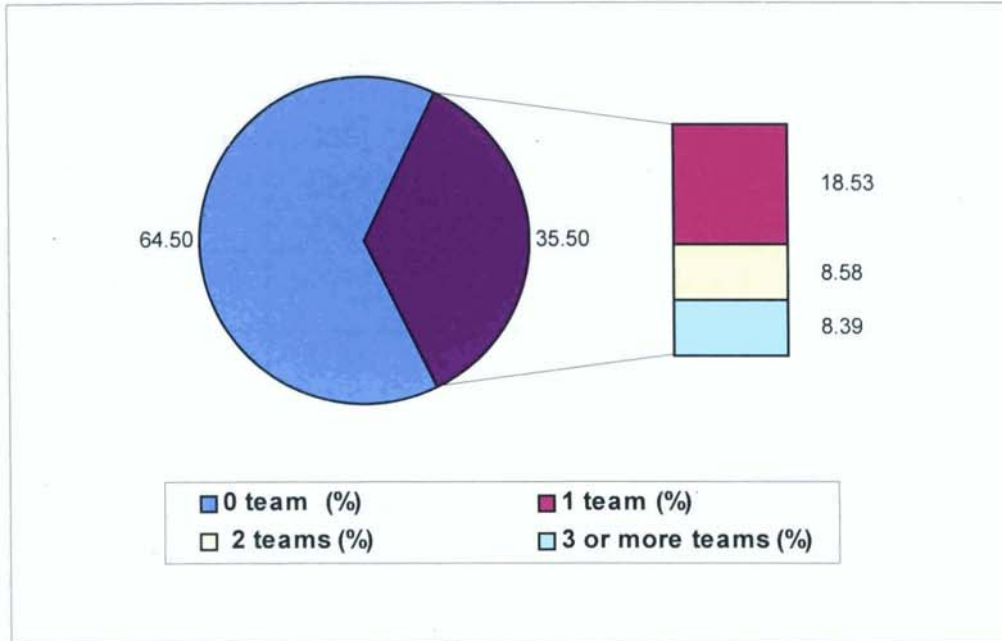


Figure 99 : Q. 53 During the past 12 months, on how many sports teams did you play? (Sex & category wise)

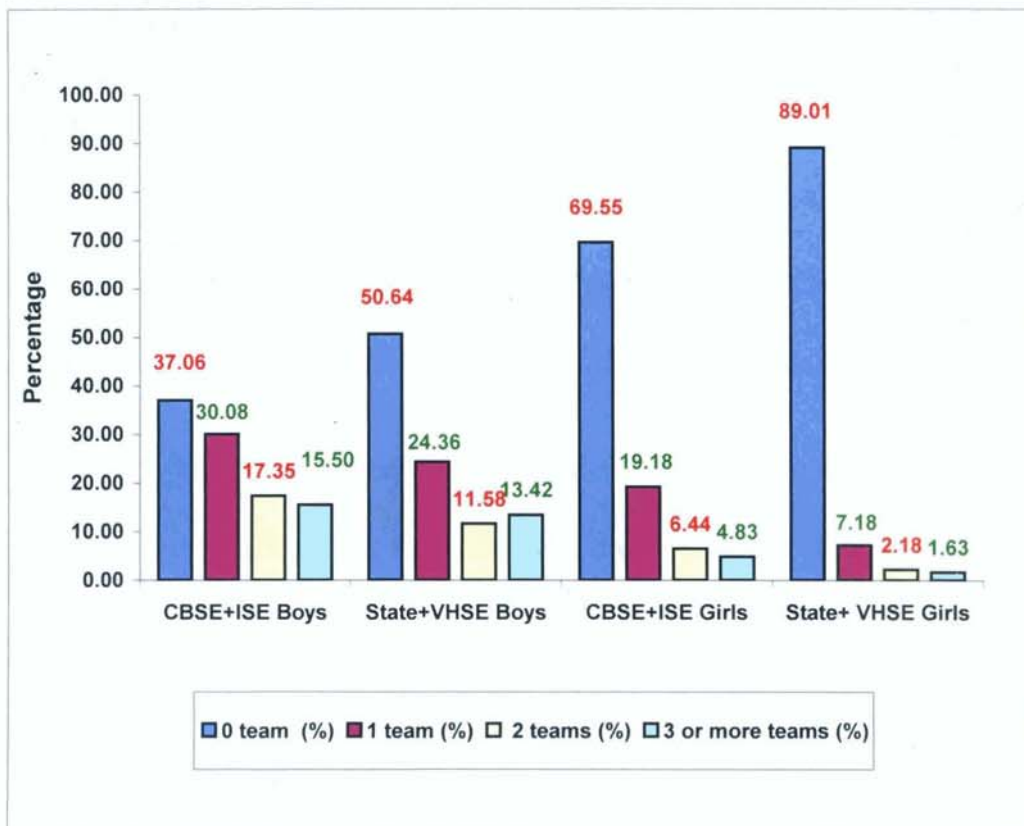


TABLE. 51
**Q. 54 During this school year have
 you been taught in any of your classes the benefit of physical activity?**

	N	CBSE+ ISE Boys (%)	N	State+ VHSE Boys (%)	N	CBSE+ ISE Girls (%)	N	State+ VHSE Girls (%)
Yes (%)	440	45.17	708	45.04	363	53.15	921	50.11
No (%)	417	42.81	718	45.67	265	38.80	804	43.74
I don't know (%)	117	12.01	146	9.29	55	8.05	113	6.15
Total	974		1572		683		1838	

The above table do indicates that 43.50% of students who have participated in the survey have not been taught about the benefits of physical activity in any of their classes. Category wise, 45.67% of State+VHSE boy students have not been taught about the benefits of physical activity in any of their classes as the percentage of 42.81% is less of the CBSE+ISE boy students. While in the case of girls, 43.74% of State+VHSE girl students were not taught about the benefits of physical activity in any of there classes when compared to the 38.80% of CBSE+ISE girl students.

The graphical representation to the responses to question No.54 is presented in Figure. 100 and the sex and category wise responses are presented as Figure 101.

Figure 100 : Q. 54 During this school year have you been taught in any of your classes the benefit of physical activity ?
(Total (N) = 5067)

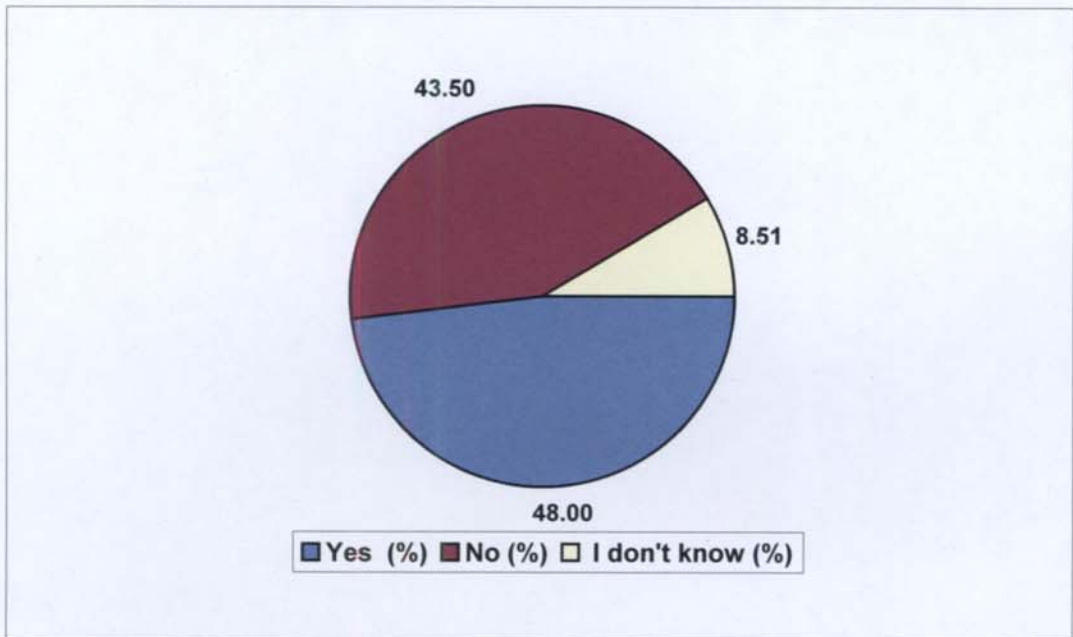


Figure 101 : Q. 54 During this school year have you been taught in any of your classes the benefit of physical activity ?
(Sex & category wise)

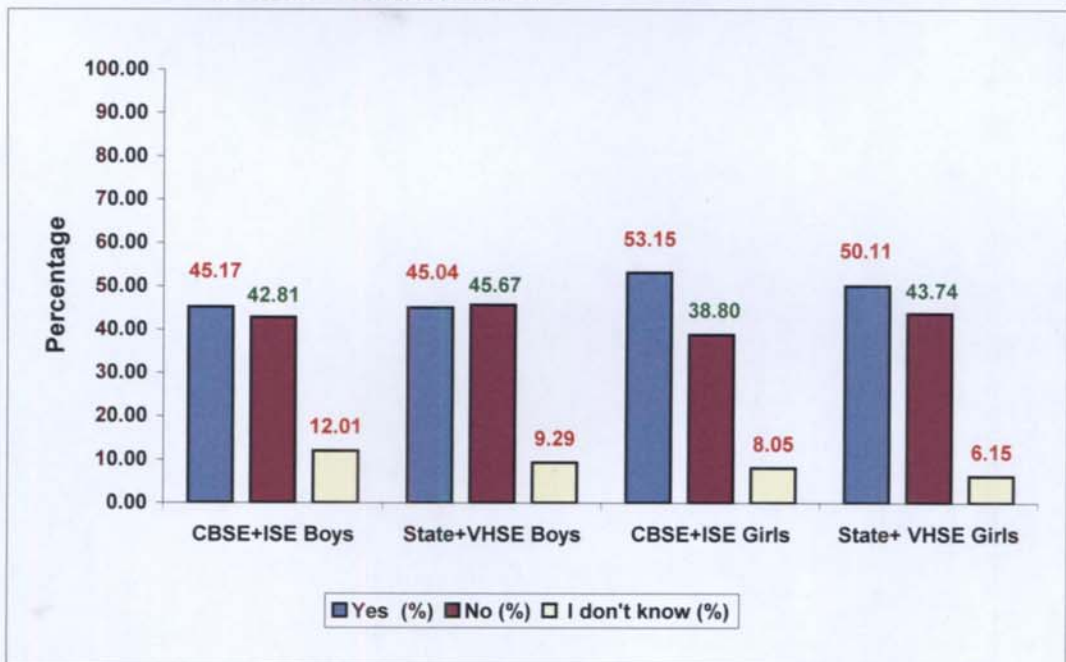


TABLE. 52
Q. 55 During the past 7 days, on how many days did you do exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training?

	N	CBSE + ISE Boys (%)	N	State +VHSE Boys (%)	N	CBSE +ISE Girls (%)	N	State+ VHSE Girls (%)
0 days (%)	234	24.02	522	33.21	376	55.05	1309	71.22
1 or 2 days (%)	244	25.05	403	25.64	173	25.33	384	20.89
3 or 4 days (%)	221	22.69	261	16.60	56	8.20	74	4.03
5 or 6 days (%)	129	13.24	131	8.33	40	5.86	26	1.41
7 days (%)	146	14.99	255	16.22	38	5.56	45	2.45
Total	974		1572		683		1838	

The above table do indicates that, 48.17% of students of the State of Kerala were not doing any exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training during the past 7 days preceding the survey. Category wise, 33.21% of State+VHSE boy students were not doing any exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training during the past 7 days preceding the survey which is lower than 24.02% of CBSE+ISE boy students. While in the case of girl students, the same trend had been seen i.e., 71.22% of State+VHSE girl students were

not doing any exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training during the past 7 days preceding the survey that is lower than the 55.05% of CBSE+ISE girl students.

The graphical representation to the responses to question No.55 is presented in Figure. 102 and the sex and category wise responses are presented as Figure 103.

Figure 102 : Q. 55 During the past 7 days, on how many days did you do exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training ? (Total (N) = 5067)

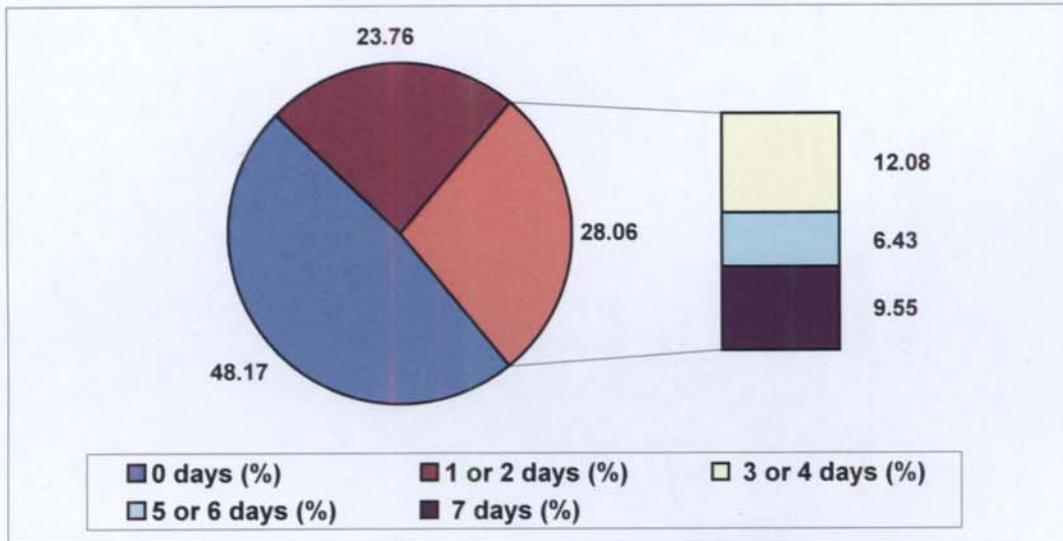
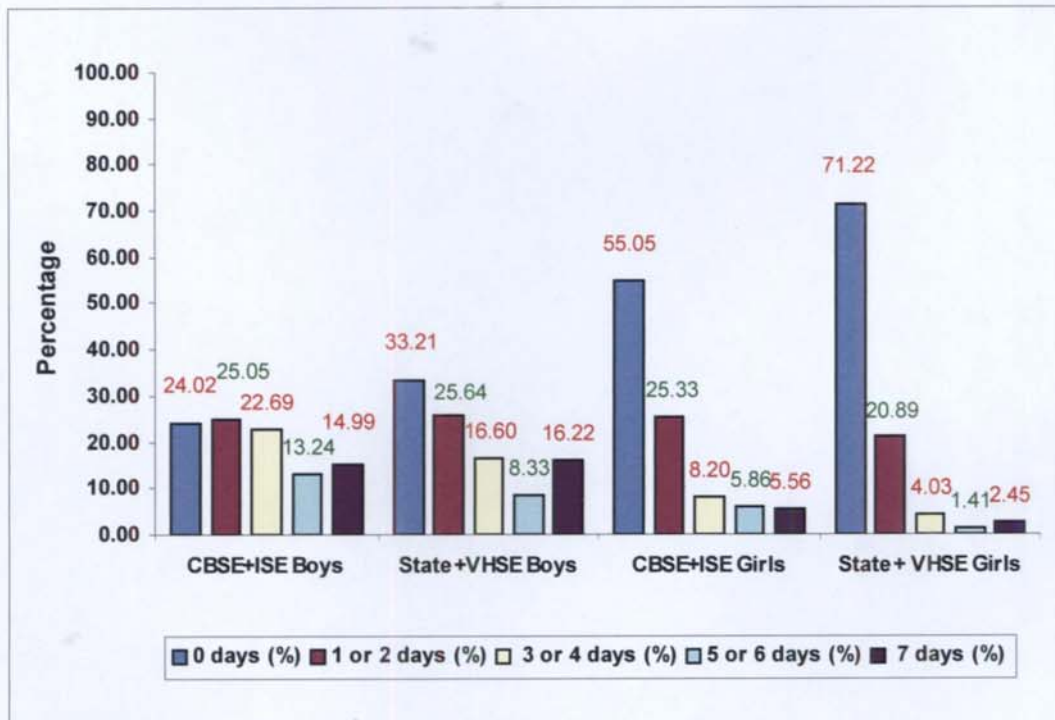


Figure 103 : Q. 55 During the past 7 days, on how many days did you do exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching and weight training ? (Sex & Category wise)



DISCUSSION OF FINDINGS

Prevalence of underweight among higher secondary students of Kerala aged 16-19 years was found to be 40.64% when compared with the BMI criteria (≤ 18.5) of the World Health Organization. A report published by World Bank too supports this finding. According to them, approximately 60 million children are underweight in India and the prevalence of underweight among children in India is amongst the highest in the world, and is nearly double to that of Sub-Saharan Africa. In 1998-99, 47% of children below the age of three were under weight or severely under weight, and further 26% were mildly underweight to such an extent that, in totality, almost three quarter of the children's population in India came under the underweight category.

Findings related to Dietary Behavior and Overweight

A major difference was found in the prevalence rate of state + VHSE boys (43.55%) compared to CBSE + ISE boys (26.55%) students. The prevalence of over weight/obesity among higher secondary students was also found to be 5.72%, taking the BMI criteria of World Health Organization. The results also proved that 9.14% of boys and 6.86% girl students belonging to CBSE+ISE stream were obese. The participant's height and weight was recorded. Normal height and weight of Indian students (6-18 years) is already published in "Essential Food and Nutrition: An Advanced Text book: Vol. II"

by M. Swaminathan was utilized for a comparison. The results revealed that the mean height of the higher secondary State + VHSE boy students was 1.06 cm lesser when compared to standard value (168.4 cm) for 16 years boys. In the case of girls state + VHSE students it was found when compared with recommended height (155.3 cm) the CBSE + ISE students were found to be 3.33 cm taller. In the case of weight, State + VHSE boys weight 1.42 kg less than the recommended value (55.5 kg) for 16 year boys. However, the CBSE + ISE boys were 3.47 kg heavier than the recommended weight. In the case of girl students, State + VHSE girls were 3.89 kg higher than the recommended weight (49.8 kg) for 16 year old girls meanwhile CBSE + ISE girl students were 0.36 kg heavier than the recommended value.

This difference may be due to varied socio-economic status of the students. In Kerala, most of the CBSE + ISE students belong to the affluent families and having better food security. In an earlier study conducted in Thiruvananthapuram by Thankachy Yamini Ramachandran (2004), the results showed that 6.5% of school going children of rural and urban adolescents aged 13-19 years were overweight or obese.

A school based study in Chennai done in adolescent girls 10-15 years old of affluent families found a prevalence of 9.6% over weight and 6% obesity. In the case study taken from children of affluent schools, it was found that they had a prevalence of 7.2% over weight/obesity with high

prevalence of obesity in males than in females. The higher prevalence of over weight/obesity in adolescents is significant because obese adolescents become obese adults thus increasing the risks of various diseases. This has been proved in many other studies in the past and being researched even today to find the exact etiology.

Study conducted by Thankachy in 2004 in consensus with the prevalence of over weight/obesity found to be more in unaided school 7.2% compared to 5.5% in aided and 4.9% in Government. It is not only due to the genetic factor but also because of the lifestyle practices and diet pattern followed in their house hold, which are very important etiological factor in the prevalence of over weight/obesity.

On an average the parents of the upper middle class and to a certain extent of the middle class prefer to send their wards in schools having CBSE syllabus in pursuit of English education and to lay foundation for a successful professional career in medicine or engineering. In this pursuit, anxiety of academic excellence prevails over everything else as a result, the dietary habit of their wards suffers in the sense they cater to their taste rather than the nutritive or health aspects, a fact which can be explained in the common interest is that, this section of the society shows interest towards instant and fast food. It has been proved that these foods are highly tasty but are very

dangerous to the overall health status of an individual, and hence the food outlets similar to the KFC of U.S.A have started functioning in Kerala.

Food availability is not scarce as only 3.34% went hungry most of the time or constantly more than 16 days preceding the survey. Almost 67.34% of students ate fruits once or more per day such as ripe bananas, papaya, pineapple, grapes, orange etc. Only 2.84% ate vegetables four or more times a day, the desirable frequency.

Findings Related to Hygiene

Hygienic related behaviour of the students is commendable as almost 95% of them practiced healthy hygienic behaviour. Overall 69.77% of the students believed that, the toilets or latrines in their school were safe but 42.10% of students believed that the toilets or latrines in their schools were not clean. Categorically, 56.17% of State+VHSE students believed that, the toilets or latrines in their schools was not clean. Majority of CBSE+ISE Schools in Kerala had better toilet facilities compared to the State Schools. Still majority of state school boys utilized open place for urination. A majority of schools provided hand washing facilities, safe drinking water supply and sanitary toilet facilities in the state.

A high standard of personal hygiene plays an important part in preventing the spread of infection through food, from the cook to the individual who eats the food. Further the healthy habits of the children like

washing their hands with soap after each visit to the toilet and drinking purified water to prevent dysentery, gastroenteritis etc. too can go a long way in preventing infectious disease.

Diarrhoeal diseases kill 2 to 3 million children in developing countries every year. Hand washing with soap alone could cut deaths to half. Removing excreta and cleaning hands with soap after contact with faecal material prevents transmission of the bacteria, viruses, and protozoa that cause diarrhoeal diseases. Overall only 21.75% of students never or rarely used soap for washing hands after using toilet or latrine in the State.

UNICEF states that, more than 2.6 billion people – forty four per cent of the world's population – take basic sanitation facilities and over one billion people still use unsafe drinking water sources. As a result, thousands of children die every day from diarrhoea and other water-sanitation and hygiene related diseases and many more suffer and get weakened by illness.

Findings Related to Violence

Injuries refer to various forms of being hurt either physically or emotionally. Overall 42.19% students had involved in physical fight more than once during the past 12 months. When compared to the similar studies conducted in Philippines (Marina, 2004) Zambia (Zambia Global School Health Survey – 2004), the incident of physical fight was relatively low in

Kerala. However, workable solutions have to be found by providing a safe environment as problems do exist always in school settings.

Findings Related to Mental Health

Mental health refers to the state of being mentally gained, it also refers to the ability of an individual to cope and adapt to the demands of life and the changes in the meaning of life itself. In most cases when individuals are psychologically and socially challenged, they resort to all sorts of behaviour to cope with challenges and stresses. Every country and culture has children and adolescents struggling with mental health problems and most of these young people suffer needlessly, unable to access appropriate resources for recognition, support and treatment. If ignored, they are at high risk for abuse and neglect, suicide, alcoholism and other drug use, school failure, violence and criminal activities leading to mental illness in adulthood, and health jeopardizing impulsive behaviours.

The study revealed that 32.54% subjects expressed a sense of loneliness during the past 30 days, which was relatively high compared to Zambia (24.1%) and USA (28.6%). Suicide attempt was considerably low in state of Kerala (13.5%) compared to Zambia (31.9%) (ZGSHS, 2004) and 16.9% in U.S.A (YRBS-US, 2003). Philippines (17.1%) (Marina, 2004) and 14.3% in China. (Benchun, 2000).

The emergence of the nuclear families among the middle class families in Kerala might be a probable reason for this sense of loneliness and most of the times they do not find anyone of their peers to share their experiences. Apart from that, children often get ridiculed by their own parents as a result of peer group comparison and academic percentage holds centre stage, as the students are traumatized to get into safer zone to get admission in good professional colleges. The ultimate result in this is that the students show withdrawal symptoms due to fear and retaliate by spending time alone.

Findings Related to Tobacco Use

About one in three or 1.1 billion people worldwide smoke. Among these, about 80% live in low- and middle-income communities (WHO, 1999). By 2020, the tobacco epidemic is expected to kill more people than any single disease and tobacco use will be cause for about 18 percent of all deaths in developed countries and about eleven percent of all deaths in developing countries. Tobacco use is a known or probable cause of about 25 diseases including heart disease; cancer, stroke, and chronic obstructive pulmonary disease. Use of smokeless tobacco causes oral cancer in the lip, tongue, mouth, and throat apart from cancer in the digestive system. Most people start using tobacco before the age of 18. Exposure to tobacco smoke in the environment can aggravate allergies and increase the severity of symptoms in children and adolescents with asthma and heart disease and it is also

associated with lung cancer (WHO, UNESCO, 1999). Tobacco use among family members, film stars, and sports heroes has a negative influence among the children and adolescents which lure them to tobacco use (USDHHS, 1994).

Overall, 6.16% students smoked cigarettes 30 days preceding the survey. This was comparatively high, 21.9% in United States (YRBS-US, 2003), 10.8% in Philippines (Marina, 2004), and 8.7% in China (Benchun, 2003). A similar study was done by Subashbabu, C S Chuttani and N S M Murthy, (1978) on the smoking habits of 1284 secondary school children in Delhi Urban Areas (India). They reported the prevalence of cigarette smoking was 8.7% overall, increasing from 5.4% amongst boys aged 14 to 26.7% when aged 19. Nearly 80% started smoking between the ages of 11 to 14 years. Smoking habit can be attributed to family income and smoking members in the family.

Approximately, 4.89% students had used some form of tobacco within 30 days of the survey. It was high in Philippines (6.2%) and United States of America (6.7%). However it was low in China (1.9%).

Recently a bill was passed in the parliament banning smoking scenes from the films in India. The reason can be clearly attributed to the negative influence films was having on the young generation. They were blindly following what the heroes and villains in the films including smoking giving

them cult status. Added to that when majority among the peer group do a thing even if it is negative one gets tempted easily and becomes a prey of the viscous circle of friends.

Findings Related with Alcohol and Other drug Use

Worldwide, alcohol use causes 3% of deaths (1.8 million) annually, which is equal to 4% of the global disease burden. Besides, the direct effects of intoxication and addiction, alcohol use causes about 20% to 30% of oesophageal cancer, liver disease, homicide and other intentional injuries, epilepsy, and motor vehicle accidents worldwide (WHO, 2002). In most countries, alcohol-related mortality is highest among 45- to 54-year-olds, but the relationship between the age of initiation of alcohol use and the pattern of its use and abuse in adulthood makes the study of alcohol consumption among adolescents important (Poikolainen, 2001).

While adverse health consequences from long-term chronic alcohol use may not cause death or disability until late in life but acute consequences of alcohol use, including intentional and unintentional injuries, are far more common among youth and young adults. Unintentional injuries are the leading cause of death among 15- to 25-year-old and many of these injuries are related to alcohol use (Facy, 2000). Young people who drink are more likely to use tobacco and other drugs and engage in risky sexual behaviour, than those who do not drink (Hibell, 2000). Problems with alcohol can

impair adolescents' psychological development and influence both the school environment and leisure time negatively (Currie et al, 2000).

The percentage of youth aged 15-19 years who consumed alcohol was 5.96% in state of Kerala. In the Global School Based Student Health Survey (GSHS) in Philippines 2003-04, the prevalence of alcohol conception among youth aged between 15-19 is 23.6%, in Zambia GSHS 2003, it was 27.1% and in US (YRBS) in 2003, it was 44.9% and in China, it was 13.6% among youth aged 13-15. Significantly boy's alcohol consumption was greater than girls. Comparatively low prevalence rate in Kerala may be due to the social taboos against drinking alcohol in the society.

Only 2.13% students had used drugs such as marijuana, ganja or hashish in their life. Meanwhile 30.73% students reported that they were not taught about the dangers of using drugs in their school. Relatively Drug abuse reported in Philippines during 2003-04 was 6.7%, 38.4%. In U.S.A during 2003 and 5.1 % in Japan during 2002.

One of the major achievements of modern medicine has been the conquest of most of the communicable diseases, as these diseases were major causes of mortality and morbidity in earlier decades of twentieth century. With the development of effective vaccines and modern antibiotics, the threat of communicable diseases was largely eradicated. In the ever changing techno savvy world and especially when the young generation gets stress in the quest

for instant success. In order to relieve them from this wrongly perceived and self created stress they easily fall prey and tread towards the path of self destruction through use of Alcohol and drugs.

Findings on HIV/AIDS Related knowledge

In the early eighties, when the first few cases of AIDS were reported, few might have realised its propensity to become a global public health problem. In a span of two decades, since its first identification, HIV infection has become a pandemic and has posed a formidable challenge to mankind, in almost all aspects of life. Acquired immunodeficiency syndrome was first reported in India in 1986, and from available data it is clear that it is sweeping the whole country. The report from NACO published in 1999 showed that there were approximately 87,313 HIV positive cases in India and no part of our country are free of HIV infection. These figures grossly underestimate the situation due to underreporting and inconsistent zero-surveillance in different states in our country. The alarming rate of its spread, the magnitude of its infection, inordinately long incubation period and resultant propensity of spread, lack of curative therapy and vaccine to prevent it mandates the acquisition of complete knowledge about HIV disease. This acquisition of knowledge is not only required for medical and paramedical personnel, but also to some extent, to the majority of population, particularly the high risk one. Today, AIDS prevention largely depends on health education and

behavioural changes based on AIDS awareness, particularly among young adults who are prone to risky behaviour.

Since the epidemic began, more than 60 million people have been infected with HIV. More than half of those newly infected with HIV today are between 15 and 24 years old and each day, nearly 6,000 becomes infected. An estimated 11.8 million young people aged 15 to 24 are living with (UNICEF, UNAIDS, WHO, 2002) HIV and AIDS. HIV infection and AIDS is by far the leading cause of death in sub-Saharan Africa and the 4th leading cause of death worldwide. In many countries, HIV infection and AIDS is reducing average life expectancy, threatening food security and nutrition, dissolving households, overloading the health care system, reducing economic growth and development, (UNAIDS, 2002), reducing school enrolment and the availability of teachers.

The study revealed that, 96.49% of higher secondary students are aware about AIDS as an infective communicable disease as HIV/AIDS has several established modes of transmission. In the state, 11.62% students believed that the people can get HIV infected or AIDS from mosquito bite, 4.50% students believed that people will not get infected of HIV by having sexual intercourse and surprisingly 7.18% students felt that it can be transmitted by casual contact and handshake. Above all an alarming

percentage of 38.22% higher secondary students are not taught about HIV or AIDS in their school.

According to the G.S.H.S survey done in Philippines during 2003-04 50.9% students reported that they had been taught about HIV/AIDS and over half of the students believed people can protect themselves from HIV by not having sexual intercourse with them. Z.G.H.S Survey done in Zambia during 2004 reported that less than half of the students 47.4% were taught in their classes about HIV or AIDS in their school year and 28.7% had been told by a doctor or nurse that they had a sexually transmitted infection such as HIV/AIDS, syphilis, bola or gonorrhoea. Thus proving the students indulgence in sexual activities and are prone to HIV infection. From the YRBS survey done in U.S.A during 2003, 87.9% of students had never been taught in school about AIDS or HIV infection.

In India sex is a subject which has got lot of social taboo attached to still. It is not taught in the required way in the schools because of which students are curious about sexual activities during adolescent and are afraid to speak freely to get the doubts clarified either from their parents or teachers. The physiological urge compels them to discuss this often with not so knowledgeable peers leading to unhealthy practices and developing dangerous habits. The explosion in information technology and unplanned urbanization has led to the school children getting over awed by the fast paced life and

getting into the diabolical club and fast food culture. Having a beer or sharing a few puffs with their friends are just the beginning of future addiction.

Findings Related to Attitude towards Physical Activity

Appropriate regular physical activity is a major component in preventing chronic diseases, along with a healthy diet and non smoking. For individuals, it is a powerful means of preventing chronic diseases but for nations, it can provide a cost-effective way of improving public health across the population. Available experience and scientific evidence show that regular physical activity provides people, both male and female, of all ages and conditions - including disabilities - with a wide range of physical, social and mental health benefits. Physical activity interacts positively with strategies to improve diet, discourage the use of tobacco, alcohol and drugs, helps reduce violence apart from the enhancing functional capacity and promoting social interaction and integration.

Physical inactivity is estimated to cause 2 million deaths worldwide annually. Globally, it is estimated to cause about 10-16% of cases, each of breast cancer, colon cancer or diabetes, and about 22% of ischemic heart disease. Estimated attributable fractions are similar both in men and women.

Currently 60% of the world's population is estimated not to get enough physical activity to achieve even this modest recommendation with the adults in developed countries are most likely to be inactive. Patterns of physical activity acquired during childhood and adolescence are more likely to be maintained throughout the life span, providing the basis for an active and healthy life. Unhealthy lifestyles - including sedentary behaviour, poor diet and substance abuse, adopted at a young age, are likely to persist. Physical activity is not merely about individual behaviour and hence multi-sectional policies and initiatives are needed to create environments that help people to be physically active (WHO, 2006).

Overall, 35.88% of students had been physically active indulging in any kind of physical activity which increases their heart rate for a total of at least 60 minutes/day on ≥ 3 days or more preceding the survey (i.e. related currently to recommended levels of physical activity). Comparatively YRBS – U.S.A survey in 2003, reported 35.8% of students being physically active doing any kind of physical activity (which increase their heart rate) for a total of at least 60 minutes/day on ≥ 5 of the 7 days preceding the survey (i.e., met currently recommended levels of physical activity). In the GSHS survey conducted in Philippines during 2003-04 reported 7.6% of students were physically active for all seven days during the preceding seven days to the survey for a total of at least 60 minutes per day.

However, in the state of Kerala, 30.89% of students attended only one class in physical education each week preceding the survey. According to the present syllabus in state higher secondary classes only two class per week is allotted but the service of physical education teachers was not provided. But in the YRBS survey in U.S conducted in 2003 reported that 33.0% of students went to Physical Education classes 5 days/week in their school.

Overall, 33.95% of students watched television, played video or computer games ≥ 3 hours per day on an average school day. In the GSHS survey conducted in Philippines during 2003-04 reported that 29.3% students spent 3 or more hours per day watching television , playing computer games, talking with friends or doing comparatively passive activities such as playing cards during a typical productive day. In the YRBS survey conducted in the U.S during 2005 reported that 37.2% of students watched television ≥ 3 hours/day on an average school day.

The information technology boom has made the world shrink unquestionably. For things that one had to spend many hours searching through a library, students now have everything at their finger tips, thanks to the World Wide Web network. Earlier students used to spend time in the play grounds indulging in any physical activities of their understanding irrespective of the climate or consequences. Today, they would be much happier to sit for hours in an internet café for hours together browsing through

the subjects of their interest or chatting with their friends leading to a very stagnant life which in turn paves the way to life style diseases. Even those who do indulge in some kind of activity, do so out of compulsion or aiming instant success and many shy away from regular physical work citing numerous reasons ranging from what do I get a kind of attitude leading to simple lethargy.

Chapter Five

SUMMARY CONCLUSION AND RECOMMENDATIONS

- ✦ Findings
 - ✦ Discussion of Findings
 - ✦ Summary
 - ✦ Conclusion
 - ✦ Recommendations
-

SUMMARY

The purpose of the study was to assess the health-risk behaviours and attitude towards physical activity among higher secondary school students in Kerala. The variables selected were height, weight, dietary behaviour, overweight, hygiene, violence, mental health, prevalence of tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity which are the priority health-risk behaviours.

The survey covered 5067 male and female students in higher secondary schools following the State Higher Secondary, CBSE, ISE and VHSE syllabus of education in Kerala during the year 2005-06. The sample represented proportionately the various districts of Kerala state with 2546 boys (Mean Age = 16.48 years) and 2521 girls (Mean Age = 16.19 years). To determine the risk behaviours and its assessment, a questionnaire was developed primarily based on the questionnaire developed by Centre for Disease Control and Prevention, U.S. Department of Health and Human Services, Atlanta, GA 30333. The questionnaire contained 55 multiple-choice questions. The sample design divide the state based on revenue districts (14) in which each educational district (34) was evaluated for their location in accordance with geographic regions. Twenty (20) Primary Sampling units (PSU) was created by grouping the adjacent educational districts, so that the total population in each grouping was approximately equal. Two classes from

two different schools of each PSU were selected. All the students from the selected division of a particular group were invited to participate in the testing programme. Thus, 50 to 100 students from each PSU participated in the testing programme. The data collected was subjected to statistical treatment namely, descriptive statistics and student's "t" test.

The analysis of the results in relation to the dietary behaviour and obesity do reveals the findings the prevalence of underweight among higher secondary students of Kerala aged 16-19 years (40.64%). A major difference was found in the prevalence rate of under weight among State + VHSE boys (43.55%) when compared to CBSE + ISE boys (26.55%) students and among girls, 49.95% of the State + VHSE students are underweight compared to the 29.14% in the CBSE+ISE counter parts. The prevalence of over weight/obesity among higher secondary students was only 5.72%, 9.14% of boys and 6.86% girl students belonging to CBSE+ISE stream were obese when compared to 0.02% boys and 2.50% girls students among State + VHSE counter parts. The mean height of the higher secondary State + VHSE boys students was 1.06 cm lesser when compared to standard value (168.4 cm) for 16 years boys, the average height of the CBSE+ISE boys were 168.28 cm and State+VHSE boys were 167.34, which is 0.94cm higher than State+ VHSE boys. While, State+VHSE girls students were found with recommended height (155.3cm) at the same time CBSE+ISE girls students were found 3.33 cm taller. Body weight of State + VHSE boys were 1.42 kg lesser than the

recommended value (55.5 kg) for 16 year boys and the CBSE+ISE boys weigh 3.47 kg more than the recommended weight. While the body weight of girls students in State + VHSE were 3.89 kg lesser than the recommended weight (49.8 kg) for 16 year old girls and at the same time CBSE+ISE girls students were 0.36 kg higher than the recommended value.

As far as the variable hygiene was concerned, State-wide, 69.77% of the students believed that, the toilets or latrines in their school are safe but 42.10% of students are of opinion, that the toilets or latrines in their schools are not clean, overall 21.75% of students never or rarely used soap for washing hands after using toilet or latrine.

Regarding the variables violence and mental health, State-wide 42.19% students had involved in physical fight more than once during the past 12 months. The sense of loneliness was found among 32.5% of students in Kerala during the past 30 days preceding the survey. Further regarding the variable tobacco, alcohol and other drug use, Overall, 6.16% students smoked cigarettes 30 days preceding the survey and approximately 4.89% students had used some form of tobacco within 30 days preceding the survey. The percentage of youth aged 15-19 years who consumed alcohol was 5.96%, while only 2.13% students had used drugs such as marijuana, ganja or hashish in their life. Besides, 30.73% students were not taught about the dangers of using drugs in their school.

However, regarding the variable HIV/AIDS related knowledge 96.49% of higher secondary students are aware about HIV/AIDS as a infective communicable disease, 11.62% students believed that people can get HIV infected or AIDS from mosquito bite and 4.50% students believe that people will not get infected of HIV/AIDS by having sexual intercourse. While, 7.18% students felt that HIV/AIDS can be transmitted by casual contact and handshake and an alarming percentage of 38.22% higher secondary students are not taught about HIV or AIDS in their school.

Lastly, the findings related to the variable, attitude towards physical activity, overall, 35.88% of students had been physically active and doing some kind of physical activity of at least 60 minutes/day on ≥ 3 days or more preceding the survey, which do increase their heart rate and at the same time 30.89% of students attended only one class in physical education per week preceding the survey, State-wide 33.95% of students watched television, played video or computer ≥ 3 hours per day on an average school day.

Conclusions

Antonovsky (1996) states: ". . . We are always in the dangerous river of life. The twin question is: *How dangerous is our river? How well can we swim?*" Youth risk behaviour studies provide one mechanism for assessing the 'level of danger' in an adolescent's river of life. Based on the findings of the study the following conclusions were drawn:

1. Prevalence of underweight among higher secondary students of Kerala aged 16-19 years were found to be 40.64% compared to the BMI criteria (≤ 8.5) of the World Health Organization.
2. A major difference was found in the prevalence rate of under weight among State + VHSE boys (43.55%) compared to CBSE + ISE boys (26.55%) students.
3. Among girls, 49.95% of the State + VHSE students are underweight compared to the 29.14% in the CBSE + ISE counter parts.
4. The prevalence of over weight/obesity among higher secondary students was only 5.72% taking the BMI criteria of World Health Organization.
5. 9.14% of boys and 6.86% girl students belonging to CBSE + ISE stream were obese compared to 0.02% boys and 2.50% girls students in the State + VHSE counter parts.
6. The mean height of the higher secondary State + VHSE boys students was 1.06 cm lesser when compared to standard value (168.4 cm) for 16 years boys.
7. The average height of the CBSE+ISE boys were 168.28 cm and State + VHSE boys were 167.34, which is 0.94cm higher than State + VHSE boys.

8. State + VHSE girls students were found with recommended height (155.3 cm) and at the same time CBSE+ISE girls students were found to be 3.33 cm taller.
9. Body weight of State + VHSE boys were 1.42 kg lesser than the recommended value (55.5 kg) for 16 year boys and the CBSE+ISE boys were 3.47 kg heavier than the recommended weight.
10. Girl students in State + VHSE weigh 3.89 kg less than the recommended weight (49.8 kg) for 16 year old girls at the same time CBSE+ISE girl students were 0.36 kg higher than the recommended value.
11. Overall, 69.77% of the students are of the notion that, the toilets or latrines in their school are safe but 42.10% of students had the opinion that the toilets or latrines in their schools are not clean.
12. Overall 21.75% of students never or rarely used soap for washing hands after using toilet or latrine.
13. State-wide 42.19% students had involved in physical fight more than once during the past 12 months.
14. The sense of loneliness was found among 32.5% of students in Kerala during the past 30 days preceding the survey.
15. Overall, 6.16% students smoked cigarettes 30 days preceding the survey.

16. Approximately 4.89% students had used some form of tobacco on within 30 days preceding the survey.
17. The percentage of youth aged 15-19 years who consumed alcohol was 5.96%.
18. Only 2.13% students had used drugs such as marijuana, ganja or hashish in their life.
19. 30.73% students were not taught about the dangers of using drugs in their school.
20. 96.49% of higher secondary students are aware about HIV/AIDS as a infective communicable disease.
21. 11.62% students believed that the people can get HIV infected or AIDS from mosquito bite.
22. 4.50% students believe that people will not get infected of HIV/AIDS by having sexual intercourse.
23. 7.18% students felt that HIV/AIDS can be transmitted by casual contact and handshake.
24. An alarming percentage of 38.22% higher secondary students are not taught about HIV or AIDS in their school.

25. Overall, 35.88% of students had been physically active and doing some kind of physical activity for at least 60 minutes per day ≥ 3 days or more preceding the survey which do increase their heart rate.
26. 30.89% of students were found to have attended only one class in physical education per week preceding the survey.
27. Overall 33.95% of students watched television, played video or computer ≥ 3 hours per day on an average school day.

RECOMMENDATIONS

In the light of the conclusions drawn, the following recommendations are made:

1. Supplementary feeding activities need to be better targeted towards those who need it most, and growth-monitoring activities need to be performed with greater regularity, with an emphasis on using this process to help parents understand how to improve their children's health and nutrition.
2. A surveillance system should be maintained and be sustained to help monitor and to ensure the effectiveness of such systems and also other public and school health programmes for youth.
3. An education programme to improve the health of school children through better hygiene and sanitation practices have to be implemented in

each school. This will ensure safe, secure and healthy environment for the school children and equip them to face the challenges in their life in a better manner.

4. The children should be taught to realise their rights for a healthy and safe learning environment.
5. Schools should help to improve child and adolescent health by providing and maintaining sanitary conditions, such as hand washing, toilet or latrine, other sanitation facilities and safe drinking water as they are either non-existent or inadequate in many schools in both rural and urban areas in Kerala.
6. School health programmes should be designed and implemented, which will help to reduce violence and unintentional injuries in schools by establishing social and physical environments that promote safety, prevent injuries and violence.
7. Health education should be taught, so as to develop students knowledge, attitudes, and skills which they need to adopt safe and healthy lifestyles for establishing crisis mechanisms; for developing mental health and social services so as to meet the needs of students, apart from and providing safe physical education and extracurricular physical activity programmes.

8. Non-violence should be taught as part of the school curriculum. Educating today's youth about the effects of violence, how the police are there to help and how to manage conflict in a non-violent way?
9. Teachers should be trained for early detection of possible problems, which will be a blessing besides, Teachers and parents need to watch for signs of unusual behaviour and address it before it escalates into an uncontrollable violence.
10. Parents, teachers, police, councillors and communities should work together with students, guiding them in the right direction, giving them the tools necessary to become balanced individuals.
11. Students should be provided with a safe environment to learn and grow so as to lessen the fears produced by external debilitating forces thereby helping them to mature into responsible adults.
12. Programmes should be implemented to identify the students with emotional, social and physical problems.
13. To help students develop positive mental health, School mental health and social services should impart life-skills such as problem solving, critical thinking, communication, interpersonal relations, empathy, and methods to cope with emotions and crises and to develop mental health.

14. In addition, school mental health and social services should include prevention, assessment, treatment, and case management for students either directly or through referrals to community-based programmes.
15. Action should be taken to reduce tobacco use by implementing and enforcing policies to prevent tobacco use among students, faculty, staff and visitors on school property during all school events not only by providing tobacco use prevention education but also by offering tobacco cessation programmes for faculty, staff and students.
16. Alcohol abuse prevention programmes should be implemented in school campuses, and besides more effective policies and programmes have be implemented to address this issue.
17. The help of voluntary organisations should be sought to provide training and support for peer- facilitated prevention activities, usually related to alcohol and other drug use and sexual responsibility.
18. The government machinery should formulate policies, regulations and practices in the right perspective so as to reduce alcohol consumption among school children. The parents and teachers being guardian and caretakers have a big role to play too, so as to s strictly guard pupil against this habit.

19. Government should implement policies and programmes that reduce drug use. Besides, parents and teachers should educate children about drug use and its consequences.
20. Health education programme should be provided to help students develop the knowledge and skills they need to avoid or reduce sexual risk behaviours.
21. Action should be initiated to ensure that each student is undergoing the recommend level of physical activity each week.
22. Students should be taught about the importance of physical activity and the Ministry of Education may tackle this problem by including physical education in the school curriculum and by providing emphasis to this aspect among the teaching staff.
23. Regular Monitoring and evaluation activities should be carried out for strengthening through the collection of timely, relevant, accessible, high-quality information.
24. School authorities should address priority health-risk behaviours among their students by increasing access to health-related information, education and services.

25. Important baseline data should be developed and provided to school authorities, leaders, students and health officials so as to use in reducing health-risk behaviours among school students.
26. Programmes should be planned and implemented to deal with adolescent health risk behaviours and prevention efforts should be taken by education, public and community.
27. The Department of Education and the Directorate of Health Services should consider significant results, and , be guided in modifying strategies towards effective programme interventions, reducing morbidity, mortality from chronic diseases even among youth and also when they become adults.
28. Further research should be taken up to clarify the multidimensionality underlying Kerala adolescent population health risk behaviours which were not examined in this study.
29. Further, this study should be carried out periodically in order to track how results change over a period of time.

APPENDIX

APPENDIX – I

The Questionnaire on Health Risk Behaviour and Attitude towards Physical activity among Higher Secondary School Students in Kerala

This survey is about your health and the things you do that may affect your health. Students like you all over your state are doing this survey. The information you give will be use to develop better health programmes for young people like yourself

Do not write your name on this survey or the answer sheet. The answers you give will be keeping private. No one will know your answer. Answer the questions based on what you really know or do. There is no right or wrong answers.

Completing the survey is voluntary. Your grade or mark in the class will not be affect whether or not you answer the questions: If you do not want to answer a question, just leave it blank. Make sure to read every question and make tick mark in the answer sheet.

ആരോഗ്യത്തിന് ഹാനികരമായ സ്വഭാവങ്ങളും കേരളത്തിലെ ഹയർ സെക്കന്ററി സ്കൂൾ കുട്ടികളുടെ ആരോഗ്യ പ്രവർത്തനങ്ങളെക്കുറിച്ചുള്ള മനോഭാവവും

ഈ സർവ്വേ നിങ്ങളുടെ ആരോഗ്യത്തെക്കുറിച്ചും നിങ്ങൾ ചെയ്യുന്ന കാര്യങ്ങൾ എങ്ങനെ നിങ്ങളുടെ ആരോഗ്യത്തെ ബാധിക്കുന്നു എന്നതിനെക്കുറിച്ചുമാണ്. നിങ്ങൾ നൽകുന്ന വിവരങ്ങൾ നിങ്ങളെപ്പോലുള്ളവരുടെ മെച്ചപ്പെട്ട ആരോഗ്യപരിപാടികൾ വികസിപ്പിക്കുന്നതിന് ഉപയോഗിക്കുന്നതിനാണ്.

ഈ ഉത്തരക്കടലാസിൽ നിങ്ങളുടെ പേരെഴുതരുത്. നിങ്ങൾ നൽകുന്ന ഉത്തരങ്ങൾ രഹസ്യമായി സൂക്ഷിക്കും. ആരോടും ഇവ വെളിപ്പെടുത്തുകയില്ല. ചോദ്യങ്ങളുടെ ഉത്തരങ്ങൾ നിങ്ങൾക്ക് അറിയാവുന്നവ നിങ്ങൾ ശരിയാണെന്ന് വിശ്വസിക്കുന്ന വിധത്തിൽ എഴുതുക. ഉത്തരങ്ങൾ ശരിയോ തെറ്റോ എന്ന് വിലയിരുത്തുന്നില്ല.

നിങ്ങൾ സ്വയമാണ് ഈ സർവ്വേ പൂർത്തിയാക്കുന്നത്. അതായത് ഇതിൽ യാതൊരു നിർബന്ധവും പ്രേരണയും ഇല്ല. നിങ്ങൾ ചോദ്യങ്ങൾക്ക് ഉത്തരം നൽകിയാലും ഇല്ലെങ്കിലും അത് നിങ്ങളുടെ ക്ലാസ്സിലെ ഗ്രേഡിനെയാ മാർക്കിനെയാ ബാധിക്കില്ല. ഏതെങ്കിലും ചോദ്യത്തിന് ഉത്തരം പറയാൻ ആഗ്രഹിക്കുന്നില്ലെങ്കിൽ ആ കോളം പൂരിപ്പിക്കേണ്ടതില്ല. എല്ലാ ചോദ്യങ്ങളും വായിച്ചു എന്ന് ഉറപ്പുവരുത്തുക. ശരിയെന്ന നിങ്ങൾ വിശ്വസിക്കുന്ന ഉത്തരങ്ങൾ അനുബന്ധമായുള്ള ഉത്തരക്കടലാസിൽ പേനകൊണ്ട് ടിക് മാർക്ക് ഇടുക.

1. How old are you? (നിങ്ങളുടെ വയസ്സ്?)
 - A. 15 years old or younger (15 വയസ്സോ അതിനു താഴെയോ)
 - B. 16 years old (16 വയസ്സ്)
 - C. 17 years old (17 വയസ്സ്)
 - D. 18 years old (18 വയസ്സ്)
 - E. 19 years old or above (19 വയസ്സോ അതിനു മുകളിൽ)
2. What is your sex? (നിങ്ങൾ ആൺകുട്ടിയോ പെൺകുട്ടിയോ?)
 - A. Boy (ആൺകുട്ടി)
 - B. Girl (പെൺകുട്ടി)
3. In which standard are you studying?(നിങ്ങൾ ഏതു ക്ലാസ്സിൽ പഠിക്കുന്നു?)
 - A. +1
 - B. +2
4. In which category does your school belongs to? (നിങ്ങളുടെ സ്കൂൾ ഏതു വിഭാഗത്തിൽ പെടുന്നു?)
 - A. Government (ഗവൺമെന്റ്)
 - B. Aided (ഗവൺമെന്റ് എയിഡഡ്)
 - C. Un Aided (അൺ എയിഡഡ്)
5. Which syllabus of education are you following?. (നിങ്ങളുടെ സ്കൂൾ ഏതു പാഠ്യപദ്ധതിയാണ് പിന്തുടരുന്നത്?)
 - A. State Higher Secondary (സംസ്ഥാന ഹയർ സെക്കണ്ടറി)
 - B. C.B.S.E. (സി.ബി.എസ്.ഇ.)
 - C. I.S.E. (ഐ.എസ്.ഇ.)
 - D. V.H.S.E.(വി.എച്ച്.എസ്.ഇ.)
6. What is your Height and weight?
 - A. Height - In cm
 - B. Weight - in Kgs
7. During the past 30 days, how often did you feel hungry because of not having enough food at home?(കഴിഞ്ഞ 30 ദിവസങ്ങൾക്കിടയിൽ നിങ്ങളുടെ വീട്ടിൽ ഭക്ഷണമില്ലാത്തതുകൊണ്ട് വിശപ്പ് അനുഭവപ്പെട്ടുവോ?)
 - A. Never (ഒരിക്കലും)
 - B. Rarely (അപൂർവ്വമായി)
 - C. Sometimes (ചിലപ്പോൾ)
 - D. Most of the time (മിക്കപ്പോഴും)
 - E. Always (എല്ലായ്പ്പോഴും)

8. How many times per day did you usually eat fruits, such as ripe bananas, Pappaya, Pineapple, grapes, orange or any other? (ദിവസത്തിൽ എത്ര തവണ നിങ്ങൾ സാധാരണയായി വാഴപ്പഴം, പപ്പായ, കൈതച്ചക്ക, മുന്തിരി അല്ലെങ്കിൽ മറ്റേതെങ്കിലും പഴങ്ങൾ കഴിക്കാറുണ്ട്?)
- I did not eat fruits (ഞാൻ പഴങ്ങൾ കഴിക്കാറില്ല)
 - 1 time per day (ദിവസം ഒരു നേരം)
 - 2 times per day (ദിവസം രണ്ടു നേരം)
 - 3 times per day (ദിവസം മൂന്നു നേരം)
 - 4 or more times per day (നാലോ അതിൽ കൂടുതലോ)
9. How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others? (ദിവസത്തിൽ എത്ര തവണ നിങ്ങൾ സാധാരണയായി പച്ചക്കറികൾ (വെണ്ടക്ക, മത്തങ്ങ, മുരിങ്ങക്കായ, വഴുതനങ്ങ, തക്കാളി, ഇലവർഗങ്ങൾ മുതലായവ കഴിക്കാറുണ്ട്?)
- I did not eat vegetables (ഞാൻ പച്ചക്കറികൾ കഴിക്കാറില്ല)
 - 1 time per day (ദിവസം ഒരു നേരം)
 - 2 times per day (ദിവസം രണ്ടു നേരം)
 - 3times per day (ദിവസം മൂന്നുനേരം)
 - 4 or more times per day (നാലോ അതിൽ കൂടുതൽ)
10. During the past 7 days, how did you usually wash your hands before eating at School? (കഴിഞ്ഞ ഏഴു ദിവസങ്ങളിൽ സ്കൂളിൽ വെച്ച് എങ്ങനെയാണ് ഭക്ഷണത്തിന് മുമ്പ് കൈ കഴുകുന്നത്?)
- I did not wash my hands before eating at School (സ്കൂളിൽവെച്ച് ഭക്ഷണത്തിന് മുമ്പ് കൈ കഴുകാറില്ല)
 - In a dish of water used by others (മറ്റുള്ളവർ ഉപയോഗിച്ചുകൊണ്ടിരിക്കുന്ന പാത്രത്തിലെ വെള്ളത്തിൽ)
 - In a dish of water used only by me (ഞാൻ മാത്രം ഉപയോഗിക്കുന്ന പാത്രത്തിലെ വെള്ളത്തിൽ)
 - Under running water or tap (ഒഴുകുന്ന വെള്ളത്തിൽ അല്ലെങ്കിൽ ടാപ്പിൽനിന്ന്)
 - Some other way (മററു വിധത്തിൽ)
11. Are the toilets or latrines safe at school? (സ്കൂളിലെ ലാട്രിനും ടോയിലറും സുരക്ഷിതമാണോ?)
- There are no toilets or latrines at school (സ്കൂളിൽ ടോയ്ലറും ലാട്രിനും ഇല്ല)
 - Yes (അതെ)
 - No (അല്ല)

12. Are the toilets or latrines clean at School? (സ്കൂളിലെ ലാട്രിനും ടോയിലറും വൃത്തിയുള്ളതാണോ?)
- A. There are no toilets or latrines at School (സ്കൂളിൽ ടോയ്ലറും ലാട്രിനും ഇല്ല)
- B. Yes(അതെ)
- C. No (അല്ല)
13. How often do you use soap when washing your hands after using toilet or latrine? (ടോയ്ലറിലും അല്ലെങ്കിൽ ലാട്രിനിലും പോയതിനുശേഷം എത്ര തവണ കൈ കഴുകുമ്പോൾ സോപ്പ് ഉപയോഗിക്കാറുണ്ട്?)
- A. Never (ഒരിക്കലും)
- B. Rarely (അപൂർവ്വമായി)
- C. Sometimes (ചിലപ്പോൾ)
- D. Most of the time (മിക്കപ്പോഴും)
- E. Always (എല്ലായ്പ്പോഴും)
14. During the past 12 months, how many times were you in a physical fight? (കഴിഞ്ഞ 12 മാസക്കാലത്തിനിടയിൽ എത്രതവണ നിങ്ങൾ ശാരീരികമായ ഏറ്റുമുട്ടലിൽ ഏർപ്പെട്ടിട്ടുണ്ട്?)
- A. 0 time (ഇല്ല)
- B. 1 time (ഒരു തവണ)
- C. 2 to 5 times (2 മുതൽ 5)
- D. 6 to 9 times (6 മുതൽ 8)
- E. 10 or more times (10 അല്ലെങ്കിൽ അതിൽ കൂടുതൽ)
15. During the past 30 days, how often have you felt lonely? (കഴിഞ്ഞ 30 ദിവസങ്ങൾക്കിടയിൽ നിങ്ങൾക്ക് എത്ര തവണ ഏകാന്തത അനുഭവപ്പെട്ടു?)
- A. Never (ഒരിക്കലും)
- B. Rarely (അപൂർവ്വമായി)
- C. Sometimes (ചിലപ്പോൾ)
- D. Most of the time (മിക്കപ്പോഴും)
- E. Always (എല്ലായ്പ്പോഴും)
16. During the past 12 months, did you ever seriously consider attempting suicide? (കഴിഞ്ഞ 12 മാസക്കാലത്തിനിടയ്ക്ക് എങ്ങനെയെന്ന് ആത്മഹത്യ ചെയ്യേണ്ടതിനെക്കുറിച്ച് നിങ്ങൾ ഒരു പ്ലാൻ തയ്യാറാക്കിയിട്ടുണ്ടോ?)
- A. Yes (ഉണ്ട്)
- B. No (ഇല്ല)

17. How many close friends do you have? (നിങ്ങൾക്ക് ഏറ്റവും അടുത്ത എത്ര കുട്ടുകാർ ഉണ്ട്?)
- A. 0 (ആരുമില്ല)
 B. 1 (ഒന്ന്)
 C. 2 (രണ്ട്)
 D. 3 or more (3 അല്ലെങ്കിൽ അതിൽ കൂടുതൽ)
18. How old were you when you first tried a cigarette? (നിങ്ങൾ ആദ്യമായി സിഗരറ്റ് വലിച്ചപ്പോൾ എത്ര വയസ്സുണ്ടായിരുന്നു?)
- A. I have never smoked cigarettes (ഞാൻ ഒരിക്കലും പുക വലിച്ചിട്ടില്ല)
 B. 10 years olds or younger (10 വയസ്സോ അതിൽ കുറവോ ഉള്ളപ്പോൾ)
 C. 11 to 13 years old (11 മുതൽ 13 വയസ്സ്)
 D. 14 to 16 years old (14 മുതൽ 16 വയസ്സ്)
 E. 17 years old or elder (17 അല്ലെങ്കിൽ അതിൽ കൂടുതൽ)
19. During the past 30 days, on how many days have you smoked cigarettes? (കഴിഞ്ഞ 30 ദിവസങ്ങളിൽ എത്ര ദിവസം നിങ്ങൾ പുക വലിച്ചിട്ടുണ്ട്?)
- A. 0 days (0 ദിവസം)
 B. 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 C. 3 to 15 days (3 മുതൽ 15 ദിവസം)
 D. 16 to 29 days (16 മുതൽ 29 ദിവസം)
 E. All days (എല്ലാ ദിവസവും)
20. During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag? (കഴിഞ്ഞ 30 ദിവസങ്ങളിൽ എത്ര ദിവസം നിങ്ങൾ പുകയില, മറ്റേതെങ്കിലും തരത്തിലുള്ള ഗുഡ്ക, ഹാൻസ്, പാൻമസാല തുടങ്ങിയവ ഉപയോഗിച്ചിട്ടുണ്ട്?)
- A. 0 days (0 ദിവസം)
 B. 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 C. 3 to 15 days (3 മുതൽ 15 ദിവസം)
 D. 16 to 29 days (16 മുതൽ 29 ദിവസം)
 E. All days (എല്ലാ ദിവസവും)
21. During the past 12 months, have you ever tried to stop smoking cigarettes? (കഴിഞ്ഞ 12 മാസക്കാലത്തിനിടയിൽ എപ്പോഴെങ്കിലും പുകയില ഉപേക്ഷിക്കാൻ ശ്രമിച്ചിട്ടുണ്ടോ?)
- A. I have never smoked cigarettes (ഞാൻ ഒരിക്കലും പുകവലിച്ചിട്ടില്ല)
 B. I did not smoke cigarettes during the past 12 months (ഞാൻ കഴിഞ്ഞ 12 മാസക്കാലത്തിനിടയിൽ പുകവലിച്ചിട്ടില്ല)
 C. Yes (ഉണ്ട്)
 D. No (ഇല്ല)

22. During the past 30 days, how many cigarettes have you smoked daily? (കഴിഞ്ഞ 30 ദിവസങ്ങളിൽ ഒരു ദിവസം എത്രതവണ പുകവലിച്ചിട്ടുണ്ട് ?)
- I did not smoke cigarette) (ഞാൻ പുക വലിക്കില്ല)
 - 1 or 2 numbers (1 അല്ലെങ്കിൽ 2 എണ്ണം)
 - 3 to 15 numbers (3 മുതൽ 15 എണ്ണം)
 - 16 to 29 numbers (16 മുതൽ 29 എണ്ണം)
 - 30 or more (30 അതിൽ കൂടുതൽ)
23. Which of your parents or guardian use any form of tobacco? (നിങ്ങളുടെ രക്ഷിതാക്കളിൽ ആരാണ് പുകയില ഉത്പന്നങ്ങൾ ഉപയോഗിക്കുന്നത് ?)
- Neither (ആർക്കുമില്ല)
 - My father or male guardian (എന്റെ അച്ഛൻ)
 - My mother or female guardian (എന്റെ അമ്മ)
 - Both (രണ്ടുപേരും)
 - I do not know (എനിക്കറിയില്ല)
24. How old were you when you had your first drink of alcohol other than a few sips? (നിങ്ങൾ ആദ്യമായി മദ്യം കഴിച്ചപ്പോൾ നിങ്ങൾക്ക് എത്ര വയസ്സുണ്ടായിരുന്നു?)
- I have never had a drink of alcohol (ഞാൻ ഒരിക്കലും മദ്യം കഴിച്ചിട്ടില്ല)
 - 11 years or younger (11 വയസ്സ് അല്ലെങ്കിൽ അതിലും താഴെ)
 - 12 or 13 years old (12 വയസ്സ് അല്ലെങ്കിൽ 13 വയസ്സ്)
 - 14 or 15 years old (14 വയസ്സ് അല്ലെങ്കിൽ 15 വയസ്സ്)
 - 16 years old or elder (16 അല്ലെങ്കിൽ അതിനുമുകളിൽ)
25. During the past 30 days, on how many days did you have at least one drink containing alcohol? (കഴിഞ്ഞ 30 ദിവസത്തിനിടയ്ക്ക് എത്ര ദിവസം ഒരു ഡ്രിങ്കെങ്കിലും മദ്യം കഴിച്ചു?)
- 0 days (0 ദിവസം)
 - 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 - 3 to 15 days (3 മുതൽ 29 ദിവസം)
 - 16 to 29 days (16 മുതൽ 29 ദിവസം)
 - All days (എല്ലാ ദിവസവും)
26. During your life, how many times did you drink so much alcohol that you were really drunk? (ജീവിതത്തിനിടയിൽ എത്ര തവണ ബോധം മറയുന്നതുവരെ കുടിച്ചിട്ടുണ്ട്)
- 0 days (0 ദിവസം)
 - 1 or 2 times (1 അല്ലെങ്കിൽ 2 തവണ)
 - 3 to 9 times (3 മുതൽ 9 തവണ)
 - 10 to 19 times (10 മുതൽ 19 തവണ)
 - 20 or more times (20 അതിൽ കൂടുതൽ)

27. How old were you for the first time you drunk so much alcohol that you were really drunk? (എത്രമാത്രം വയസ്സിലാണ് ബോധം മറയുന്നതുവരെ ആദ്യമായി കുടിച്ചത്?)
- I have never drunk so much alcohol that I was really drunk (ഞാനിതുവരെയും ബോധം മറയുന്നതുവരെ കുടിച്ചിട്ടില്ല)
 - 11 years old or younger (11 വയസ്സോ അതിൽ കുറവും)
 - 12 or 13 years old (12 അല്ലെങ്കിൽ 13 വയസ്സ്)
 - 14 or 15 years old (14 അല്ലെങ്കിൽ 15 വയസ്സ്)
 - 16 years old or elder (16 വയസ്സും അതിനു മുകളിലും)
28. During your life, how many times have you ever had a hang-over, felt sick, headache got into trouble with your family or friends, missed school, or got into fights, as a result of drinking alcohol? (നിങ്ങളുടെ ജീവിതകാലത്തിനിടയിൽ എപ്പോഴെങ്കിലും മദ്യം കഴിച്ചതുമൂലമുള്ള ഹാംഗ് ഓവർ, തലവേദന, രോഗം, കുടുംബത്തിലുള്ളവരുമായോ സുഹൃത്തുക്കളുമായോ വഴക്ക്, സ്കൂളിൽ പോകാൻ കഴിയാതിരിക്കുക, ഏറ്റുമുട്ടലുണ്ടാവുക എന്നിവ ഉണ്ടായിട്ടുണ്ടോ?)
- 0 times (0 തവണ)
 - 1 or 2 times (1 അല്ലെങ്കിൽ 2 തവണ)
 - 3 to 9 times (3 മുതൽ 9 തവണ)
 - 10 to 19 times (10 മുതൽ 19 തവണ)
 - 20 or more times (20 അതിൽ കൂടുതൽ)
29. What is the most number of drinks you have had on one occasion? (ഒരു വസരത്തിൽ ഏറ്റവും കൂടുതൽ എത്ര ഡ്രിങ്ക് വരെ കഴിക്കും?)
- I do not drink alcohol (ഞാൻ കുടിക്കില്ല)
 - Less than peg (60 ml) (ഒരു പെഗിൽ (60ml) കുറവ്)
 - 2 peg (2 പെഗ്)
 - 3 peg (3 പെഗ്)
 - 4 or more drinks (4 അതിൽ കൂടുതൽ)
30. What type of alcohol do you usually drink? (ഏതുതരം മദ്യമാണ് സാധാരണ കഴിക്കാറ്?)
- I do not drink alcohol (ഞാൻ കുടിക്കാറില്ല)
 - Beer (ബിയർ)
 - Vodka/gin (വോഡ്ക/ജിൻ)
 - Toddy (കളളി)
 - Some other type (മറ്റേതെങ്കിലും)

31. With whom do you usually drink alcohol? (ആരോടൊപ്പമാണ് മദ്യപിക്കാറ്?)
- I do not drink alcohol (ഞാൻ കുടിക്കാറില്ല)
 - With my friends (കുട്ടുകാരോടൊപ്പം)
 - With my family (കുടുംബത്തോടൊപ്പം)
 - With persons I have just met (ഞാൻ ആ സമയത്ത് കണ്ടുമുട്ടുന്നവരോടൊപ്പം)
 - I usually drink alone (ഒറ്റയ്ക്കാണ് പതിവ്)
32. Do your parents or guardians know that you drink alcohol? (നിങ്ങളുടെ മാതാപിതാക്കൾക്കോ രക്ഷിതാക്കൾക്കോ നിങ്ങൾ മദ്യപിക്കുന്ന വിവരം അറിയാമോ?)
- I do not drink alcohol (ഞാൻ മദ്യപിക്കാറില്ല)
 - Yes (അതെ)
 - No (ഇല്ല)
 - I do not know (എനിക്കറിയില്ല)
33. Which of your parents or guardian drink alcohol? (നിങ്ങളുടെ മാതാപിതാക്കളിൽ അല്ലെങ്കിൽ രക്ഷിതാക്കളിൽ ആരാണ് മദ്യപിക്കുന്നത്?)
- Neither (ആരും കുടിക്കാറില്ല)
 - My father or male guardian (എന്റെ അച്ഛൻ അല്ലെങ്കിൽ രക്ഷിതാവ്)
 - My mother or female guardian (എന്റെ അമ്മ അല്ലെങ്കിൽ രക്ഷിതാവ്)
 - Both (ഇരുവരും)
 - I do not know (എനിക്കറിയില്ല)
34. During your life, how many times have you used drugs, such as Marijuana, Ganja, Hashish? (ജീവിതത്തിൽ എത്ര തവണ മയക്കുമരുന്നുകളായ കഞ്ചാവ്, ഹാഷിഷ് ഇവ ഉപയോഗിച്ചിട്ടുണ്ട്?)
- 0 times (0 തവണ)
 - 1 or 2 times (1 അല്ലെങ്കിൽ 2 തവണ)
 - 3 to 9 times (3 മുതൽ 9 വരെ)
 - 10 or more times (10 അല്ലെങ്കിൽ അതിൽ കൂടുതൽ)
35. During the past 30 days, how many times did you use Ganja? (കഴിഞ്ഞ 30 ദിവസത്തിനിടയ്ക്ക് എത്ര തവണ 'കഞ്ചാവ്' ഉപയോഗിച്ചിട്ടുണ്ട്?)
- 0 days (0 ദിവസം)
 - 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 - 3 to 15 days (3 മുതൽ 9 വരെ)
 - 10 to 19 days (10 മുതൽ 19 വരെ)
 - 20 or more times (20 അല്ലെങ്കിൽ കൂടുതൽ)

36. How old were you when you first tried marijuana or ganja? (ആദ്യമായി മരിജുവാൻ അല്ലെങ്കിൽ കഞ്ചാവ് ആദ്യമായി ഉപയോഗിച്ചപ്പോൾ നിങ്ങൾക്ക് എന്തു പ്രായമുണ്ടായിരുന്നു ?)
- A. I have never tried marijuana or ganja (ഞാൻ ഒരിക്കലും മരിജുവാൻ അല്ലെങ്കിൽ കഞ്ചാവ് ഉപയോഗിച്ചിട്ടില്ല)
- B. 11 years old or younger (11 വയസ്സോ അതിൽ കുറവ്)
- C. 12 or 13 years old (12 അല്ലെങ്കിൽ 13 വയസ്സ്)
- D. 14 or 15 years old (14 അല്ലെങ്കിൽ 15 വയസ്സ്)
- E. 16 years old or elder (16 അല്ലെങ്കിൽ കൂടുതൽ)
37. During your life, how many times have you shared needles or syringes to inject any drugs into your body? (നിങ്ങളുടെ ജീവിതകാലത്ത് എത്ര തവണ നിങ്ങൾ കുത്തിവയ്ക്കാനുപയോഗിക്കുന്ന സൂചികളും സിറിഞ്ചുകളും പങ്കുവെച്ച് ഉപയോഗിച്ചിട്ടുണ്ട്?)
- A. 0 times (0 തവണ)
- B. 1 or 2 times (1 അല്ലെങ്കിൽ 2 തവണ)
- C. 3 to 9 times (3 മുതൽ 9 തവണ)
- D. 10 to 19 times (10 മുതൽ 19 വരെ)
- E. 20 or more times (20 അല്ലെങ്കിൽ കൂടുതൽ)
38. During this school year, were you taught in any of your classes the dangers of using drugs? (ഈ സ്കൂൾ വർഷത്തിൽ മയക്കുമരുന്നുകൾ ഉപയോഗിക്കുന്നതിലെ അപകടത്തെക്കുറിച്ച് ആരെങ്കിലും പഠിപ്പിച്ചുവോ?)
- A. Yes (അതെ)
- B. No (ഇല്ല)
- C. I do not know (എനിക്കറിയില്ല)
39. Have you ever heard of HIV or the disease called AIDS? (നിങ്ങൾ എപ്പോഴെങ്കിലും എച്ച്. ഐ. വി. യെക്കുറിച്ച് അല്ലെങ്കിൽ എയ്ഡ്സിനെക്കുറിച്ച് കേട്ടിട്ടുണ്ടോ?)
- A. Yes (അതെ)
- B. No. (ഇല്ല)
40. During this school year, were you taught in any of your classes about HIV or AIDS? (ഈ സ്കൂൾ വർഷത്തിൽ എച്ച് ഐ. വിയെ അല്ലെങ്കിൽ എയ്ഡ്സിനെക്കുറിച്ച് പഠിപ്പിച്ചുവോ?)
- A. Yes (അതെ)
- B. No (ഇല്ല)
- C. I do not know (എനിക്കറിയില്ല)

41. Can people get HIV injection or AIDS from mosquito bites? (എയ്ഡ്സ് പകരുന്നത് കൊതുക് കടിക്കുന്നതിലൂടെയാണോ?)
- A. Yes (അതെ)
 B. No (ഇല്ല)
 C. I do not know (എനിക്കറിയില്ല)
42. Will people get infection of HIV by having sexual intercourse? (ലൈംഗിക ബന്ധത്തിലൂടെ എയ്ഡ്സ് പകരുമോ?)
- A. Yes (അതെ)
 B. No (ഇല്ല)
 C. I do not know (എനിക്കറിയില്ല)
43. Will people get infection of HIV through blood transfusion? (രക്തം കൊടുക്കുന്നതിലൂടെ എയ്ഡ്സ് പകരുമോ?)
- A. Yes (അതെ)
 B. No (ഇല്ല)
 C. I do not know (എനിക്കറിയില്ല)
44. Will people get infection of HIV by using common syringes of medical injection? (കോമൺ സിറിഞ്ച് ഉപയോഗിക്കുന്നതിലൂടെ എയ്ഡ്സ് പകരുമോ?)
- A. Yes (അതെ)
 B. No (ഇല്ല)
 C. I do not know (എനിക്കറിയില്ല)
45. Will people get infection of HIV by a touch from a AIDS Patient? (എയ്ഡ്സ് രോഗിയെ തൊടുന്നതിലൂടെ എയ്ഡ്സ് പകരുമോ?)
- A. Yes (അതെ)
 B. No (ഇല്ല)
 C. I do not know (എനിക്കറിയില്ല)
46. During a usual week, on how many days are you physically active for a total of at least 60 minutes per day? (ഒരു സാധാരണ ആഴ്ചയിൽ എത്ര ദിവസം നിങ്ങൾ ഒരു ദിവസത്തിൽ 60 മിനിറ്റുകളിലും ശാരീരികമായി ഊർജ്ജസ്വലമായിരുന്നു ?)
- A. 0 times (0 തവണ)
 B. 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 C. 3 or 4 days (3 അല്ലെങ്കിൽ 4 ദിവസം)
 D. 5 or 6 days (5 അല്ലെങ്കിൽ 6 ദിവസം)
 E. 7 days (7 ദിവസം)

47. How much time do you spend during a usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities, such as reading books, playing chess, or playing scrabble? (ഒരു സാധാരണ ദിവസം ടി. വി. കാണുന്നതിനോ കമ്പ്യൂട്ടർ ഗെയിംസ് കളിക്കുന്നതിനോ സുഹൃത്തുക്കളുമായി സംസാരിക്കുന്നതിനോ അല്ലെങ്കിൽ ഇരുന്നുകൊണ്ടു ചെയ്യാവുന്ന മറ്റ് പ്രവർത്തികളിൽ ഏർപ്പെടുന്നതിനോ അതായത് പുസ്തകം വായിക്കുക, ചെസ് തുടങ്ങിയവയ്ക്ക് എത്ര സമയം ചെലവഴിക്കുന്നു?)
- Less than 1 hour per day (1 മണിക്കൂറിൽ കുറവ്)
 - 1 to 2 hours per day (1 മുതൽ 2 മണിക്കൂർ)
 - 3 to 4 hour per day (3 മുതൽ 4 മണിക്കൂർ)
 - 5 to 6 hour per day (5 മുതൽ 6 മണിക്കൂർ)
 - More than 7 hour per day (7 ദിവസം)
48. During the past 7 days, on how many days did you walk or ride a bicycle to and from school? (കഴിഞ്ഞ 7 ദിവസങ്ങൾക്കുള്ളിൽ എത്ര ദിവസം നിങ്ങൾ സ്കൂളിലേക്ക് നടന്നോ സൈക്കിളിലോ പോവുകയും വരുകയും ചെയ്തു?)
- 0 times (0 ദിവസം)
 - 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 - 3 or 4 days (3 അല്ലെങ്കിൽ 4 ദിവസം)
 - 5 or 6 days (5 അല്ലെങ്കിൽ 6 ദിവസം)
 - 7 days (7 ദിവസം)
49. During the past 30 days, on how many days did you miss classes or school without permission? (കഴിഞ്ഞ 30 ദിവസങ്ങൾക്കുള്ളിൽ എത്രദിവസം നിങ്ങൾക്ക് ക്ലാസ്സ് നഷ്ടപ്പെട്ടു അല്ലെങ്കിൽ സ്കൂളിൽ നിന്ന് അനുവാദം കൂടാതെ മാറിനിന്നു?)
- 0 days (0 ദിവസം)
 - 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 - 3 to 5 days (3 മുതൽ 5 ദിവസം)
 - 6 to 9 days (6 മുതൽ 9 ദിവസം)
 - 10 or more days (10, അല്ലെങ്കിൽ കൂടുതൽ)
50. During the past 30 days, how often did your parents or guardian understand your problems and worries? (കഴിഞ്ഞ 30 ദിവസങ്ങൾക്കുള്ളിൽ എത്ര തവണ നിങ്ങളുടെ മാതാപിതാക്കൾ അല്ലെങ്കിൽ രക്ഷിതാക്കൾ നിങ്ങളുടെ പ്രശ്നങ്ങളും വിഷയങ്ങളും മനസ്സിലാക്കി?)
- Never (ഒരിക്കലും)
 - Rarely (അപൂർവ്വമായി)
 - Sometimes (ചിലപ്പോൾ)
 - Most of the time (മിക്കപ്പോഴും)
 - Always (എല്ലായ്പ്പോഴും)

- 51. During the past 30 days, how often did your parents or guardians really know what you were doing with your free time? (കഴിഞ്ഞ 30 ദിവസങ്ങൾക്കുള്ളിൽ എത്ര തവണ നിങ്ങളുടെ മാതാപിതാക്കൾ അല്ലെങ്കിൽ രക്ഷിതാക്കൾ നിങ്ങളുടെ ഒഴിവുസമയം വാസ്തവത്തിൽ എങ്ങനെ ചെലവഴിക്കുന്നുവെന്ന് എത്ര തവണ അന്വേഷിച്ചിരുന്നു?)
 - A. Never (ഒരിക്കലും)
 - B. Rarely (അപൂർവ്വമായി)
 - C. Sometimes (ചിലപ്പോൾ)
 - D. Most of the time (മിക്കപ്പോഴും)
 - E. Always (എല്ലായ്പ്പോഴും)
- 52. During this school year, on how many days did you go to physical education class each week? (ഈ സ്കൂൾ വർഷത്തിൽ ആഴ്ചയിൽ എത്ര ദിവസം നിങ്ങൾ ഫിസിക്കൽ എഡ്യൂക്കേഷൻ ക്ലാസിൽ പങ്കെടുത്തു?)
 - A. 0 days (0 ദിവസം)
 - B. 1 day (1 ദിവസം)
 - C. 2 days (2 ദിവസം)
 - D. 3 days (3 ദിവസം)
 - E. 4 or more days (4 അതിൽ കൂടുതൽ)
- 53. During the past 12 months, on how many sports teams did you play? (കഴിഞ്ഞ 12 മാസത്തിൽ നിങ്ങൾ എത്ര ടീമുകളിൽ കളിച്ചു?)
 - A. 0 teams (0 ടീം)
 - B. 1 team (1 ടീം)
 - C. 2 teams (2 ടീമുകളിൽ)
 - D. 3 or more teams (3 അതിൽ കൂടുതലും)
- 54. During this school year, have you been taught in any of your classes the benefits of physical activity? (ഈ സ്കൂൾ വർഷത്തിൽ ഏതെങ്കിലും ക്ലാസ്സിൽ ശാരീരിക പ്രവർത്തനങ്ങളുടെ മേന്മകളെക്കുറിച്ച് പഠിപ്പിച്ചുവോ?)
 - A. Yes (അതെ)
 - B. No (ഇല്ല)
 - C. I do not know (എനിക്കറിയില്ല)
- 55. During the past 7 days, on how many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training? (കഴിഞ്ഞ 7 ദിവസങ്ങളിൽ പൂഷ് അപ്പുകൾ, സിറ്റപ്പുകൾ റോട്ടചീംഗ്, കാൽമുട്ടുകൾ വളക്കൽ, ലെഗ് സ്ട്രെച്ചിംഗ് അല്ലെങ്കിൽ വെയ്റ്റ് ട്രെയിനിംഗ് മുതലായ വ്യായാമങ്ങൾ എത്ര ദിവസം ചെയ്തു?)
 - A. 0 times (0 തവണ)
 - B. 1 or 2 days (1 അല്ലെങ്കിൽ 2 ദിവസം)
 - C. 3 or 4 days (3 അല്ലെങ്കിൽ 4 ദിവസം)
 - D. 5 or 6 days (5 അല്ലെങ്കിൽ 6 ദിവസം)
 - E. 7 days (7 ദിവസം)

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