HEALTH-RISK BEHAVIOUR AND ATTITUDE TOWARDS PHYSICAL ACTIVITY AMONG ENGINEERING COLLEGE STUDENTS IN KERALA

Thesis submitted to
the University of Calicut in partial fulfillment of
the requirements for the degree of
doctor of philosophy in physical education

by

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DECLARATION

I, Mrs. Seeja V V., by declare that the thesis entitled **"HEALTH-RISK BEHAVIOUR AND ATTITUDE TOWARDS PHYSICAL ACTIVITY AMONG ENGINEERING COLLEGE STUDENTS IN KERALA"** submitted to the University of Calicut, in fulfilment of the requirements for the award of the degree of Doctor of Philosophy in Physical Education is recorded of original research work done by me under the supervision and guidance of **Dr. K. P. MANOJ, Director, Department of Physical Education, Kannur University** and it has not formed before on the basis for the award of any Degree/Diploma/Associateship/Fellowship or any other similar title.

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CERTIFICATE

This is to certify that the thesis entitled **"HEALTH-RISK BEHAVIOUR AND ATTITUDE TOWARDS PHYSICAL ACTIVITY AMONG ENGINEERING COLLEGE STUDENTS IN KERA.LA"** submitted to the University of Calicut, in fulfilment of the requirements for the award of the degree of Doctor of Philosophy in Physical Education is recorded of original research work done by Mrs Seeja V V., during the period of 2013 – 2022 of her study in the Department of Physical Education, University of Calicut under my supervision and guidance and the thesis has not previously formed on the basis for the award of any Degree/Diploma/Associate ship/Fellowship or any other similar title and it represents entirely an independent work on the part of the candidate.

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Dedication

I dedicate this project to God Almighty my creator, my strong pillar, my source of inspiration, wisdom, knowledge and understanding. He has been the source of my strength throughout this program and on His wings only have I soared. I also dedicate this work to my beloved parents and family members for their whole hearted support and prayers. I also dedicate this to my husband Mr. Rajesh C.S. who has encouraged me all the way and whose encouragement has made sure that I give it all it takes to finish that which I have started. To my child Sriya.C.Rajesh who has been affected in every way possible by this quest. And special dedication to Umar. C. K, who has given tremendous support and love.

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4. Published a paper on 'Yoga as a Science of Human Engineering' (June 2014)
5. Published an international paper on 'Effect of Aerobic Exercises on Selected Components of Physical Fitness of Adult Female' (May 2020)

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CHAPTER I
INTRODUCTION

Health-risk behaviours such as excessive drinking, illicit drug use, unsafe sexual activity, and impaired driving represent considerable risks both to the individual and to the society. Not only are these behaviours associated with some of the leading causes of death worldwide but they also pose costs to society in terms of property damage, violence, imprisonment, diminished lifespan and treatment expenses (Kolek, 2006). Healthy behaviours are those activities engaged in by people who are basically healthy that have an impact upon their health status. Included in this classification are such activities such as: seeking information about health-related matters; going to the doctor clinic, or dentist for check-ups, prophylaxis or immunizations, engaging in exercise and good nutritional practices, wearing seat belts, practicing 'safe sex', periodic self-examinations of breasts or testes and moderate use of alcohol. Also under the rubric of health behaviours are those activities that place one's health at risk, such as: smoking cigarettes, misusing drugs, drinking to excess and sharing needles.

An individual should consume an average of 400 g of fruits and vegetables per day excluding the carbohydrates fruits (WHO/FAO, 2003). A healthy diet incorporates nutritious food including minerals, proteins, vitamins, and other essential contents. A balanced diet or healthy diet would help the individual to shield over malnutrition as well as many of the chronic lifestyle diseases. From the studies it was said that the higher the perceived access, the greater the increment in the consumption of fruits and vegetables, and one of the main contributing factor is the prices of those items (Caldwell, Kobayashi & DuBow2009). When it comes to fatty food or protein rich food like red meat, the higher the intake of red meat, the higher the risk for

cardiovascular diseases, cancer mortality and the same is higher in the case of unprocessed red meat (Wagialla, Mustafa & Bashir, 2019).

To have a healthy life and to improve the quality of life one should try to maintain a balanced diet. The general health benefits of a balanced diet are:

- Reduce the occurrence of chronic diseases and cholesterol as the diet include more fibre content food (Bredbenner et. al., 2007).
- Reduce the heart disease and the risk of hypertension incidence.
- Reduce constipation.
- Reduce the risk of diverticular disease.
- Reduce osteoporosis and rheumatoid arthritis risk incidence (Leitzmann, 2014).
- Lower concentration of uric acid, high sensitivity C-Reactive protein and Triacyglycerol, (Alpers et.al., 2015)

Health-risk behaviours may be defined as those threatening the righteousness of young people and interfering the way for them to be responsible adults. These behaviours are generally listed in six groups: behaviours contributing to accidents with or without intention; smoking; alcohol and other substance use; unintended pregnancies and sexual behaviours contributing to sexually transmitted diseases; unhealthy diet behaviours and physical inactivity. Health-risk behaviours are generally acquired during adolescence and their results are reflected on to adulthood and cause important increases in mortality and morbidity (Eaton, et.al., 2006). Accidents as the leading causes of deaths in the adolescent period are closely related to risky behaviours. In addition, cardiovascular diseases and cancers, which are the first two causes of adult mortality, are also closely related to

risky attitude and behaviours in the adolescent period (Tenore, Sharp & Lipsky, 2001). Although these Health-risk behaviours are often first initiated in adolescence (Steinberg, 2004) they may be even more prevalent and dangerous during emerging adulthood, the late teens and early twenties (Arnett, 2005) when the adolescent is expected to have entered the college/ university. Many emerging adults live independently from parents, allowing for increased freedom to spend their time and money as they wish (Aquilino, 2006).

While in the past, only a small proportion of youth lived away from home to follow an intensive higher education program for several years, today there is a real expansion worldwide in the number of college/ university students studying in a city. While youth in industrialized countries have greater opportunities for university education, the largest proportion of university students are citizens of transitional and developing countries.

The health enhancing properties of physical activity are evidence-based and widely accepted. Physical activity is any bodily movement that is produced by the contraction of skeletal muscle and that substantially increases energy expenditure. It includes active living, active play, sport, Physical Education and active transport. Current Department of Health and Children guidelines recommend that children and youth participate daily in at least 60 minutes of moderate to vigorous intensity physical activity (> 60 min MVPA). This activity should be developmentally appropriate, involve a variety of activities and be enjoyable.

Physical activity is important to children's current and future health, and adherence to the physical activity guidelines produces a range of direct and indirect benefits. It assists in the control of body weight by increasing energy expenditure, this is important in teaching children and young people how to achieve a healthy 'energy balance', and avoid developing adult

obesity. It reduces the risk of developing premature cardiovascular disease, type-2 diabetes, metabolic syndrome and some site specific cancers. Weight bearing physical activity is important in bone formation and remodeling. In addition, physical activity reduces depression and anxiety, enhances mood, self-esteem and quality of life.

Participation in regular health enhancing physical activity has also been found to reduce rule-breaking behaviour, and to improve attention span and classroom behaviour. It has positive effects on academic performance, including achievement in maths tests and reading, academic grades and perceptual skills. Involvement in sport and Physical Education can play a significant role in the enrichment of a child's social life and the development of social interaction skills. Childhood provides a great opportunity to influence attitudes and participation levels positively towards physical activity. A child who emerges from school with confidence in his/ her physical body and skills and who has been exposed to positive experiences in physical activity will more likely to adhere to an active lifestyle as they age.

Worldwide, less than one third of young people are sufficiently active to benefit their current and future health. Females are less active than males. In addition, the proportion of children and young people who walk or cycle to school, a source of daily physical activity, is declining dramatically. Schools are an important setting for young people to take part in, and learn about, physical activity. Through Physical Education programs, free play activity and extra-curricular sport, schools can provide time, facilities and guidance for children and youth to safely access physical activity opportunities and develop competence and confidence in an environment that is supported by teachers, parents and friends. Schools are also a setting for under-represented population sub groups to gain access to quality physical activity experiences. However, decreasing Physical Education programmes in schools, pressure

from the school curriculum to reduce time spent in free play, lack of training and senior management support for teachers, particularly at the primary level, and the removal of dedicated green spaces or play areas in schools is an alarming trend worldwide.

Physical inactivity is a major underlying cause of death, disease and disability. There is increasing concern at the rapidly decreasing levels of fitness in children and youth. Preliminary data from a World Health Organization (WHO, 2020) study on risk factors identified sedentary lifestyle as one of the ten leading global causes of death and disability, with more than 20 lakhs deaths each year are attributable to physical inactivity. Children and young people need to be encouraged to reduce the amount of time spent in sedentary activities such as TV and video viewing, and playing computer games especially during daylight hours.

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 manmade disease like AIDS, with India having the largest AIDS-infected population in the world (57 lakhs 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. A development group was established on 2019 by WHO consisting of 28 experts from different disciplines with representation from all regions to contribute to the process of some guidelines. The purpose of this guidelines are to summarize the evidence on the association between sedentary behavior, health related outcomes and physical activity that was used to inform the (2020 WHO) guideline recommendations on physical activity for adults and children aged 5- 17.

An estimated 38.2 million adults were overweight and obese in 2019 (WHO,2021). Overweight and obesity are now on the rise in low- and middle-income countries, specially in urban settings. Children under 5 who were overweight or obese in 2019 lived in Asia. 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, lakhs 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 in 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. Overall, 13% of the world's adult population (11% for men and 15% for women) were obese in 2016 (WHO, 2021). The worldwide prevalence of obesity tripled between 1975 and 2016.

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, stroke, and certain forms of cancer. It's 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 and 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 and 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; in 2016, it is 50% (WHO, 2016).

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, 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. Obesity was higher among women than men, 41.88% vs. 38.67%, urban and rural, 44.17% vs. 36.08% (Murali Venkata Rao, 2021).

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, 2019.More education implied a higher obesity in colleges 44.6% and 38% in uneducated, as did lowered physical activity,

43.71% inactive to 32.56% vigorously active (Murali Venkata Rao, 2021). With regard to obesity in adolescents, during 1963-80 in US, 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 multimillion 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 gains in adulthood an enormous burden - human suffering, lost productivity, and health care expenditures (Jennifer Gargiulo, 2001).

Health-risk behaviours among Iranian university students reveals the high-risk behaviors are among the most serious threats for the physical and mental health of adolescents and young adults. Applying an online survey questionnaire, the data were collected from 3649 students and analyzed using Latent Class Analysis.For total sample, standardized prevalence rates of cigarette smoking, hookah use, alcohol consumption, substance abuse and unsafe sex were 18.5 . were the most and the least common risky behaviour among the students. In this we-based survey, a considerable number of students, particularly boys (18%), were at high-risk class, stressing the need for preventive interventions for this group of youth. (Shekari, F., Habibi, P., Nadrian, H., & Mohammad poorasl A. (2020).

The purpose of this study was to analyze the attitude of college students towards the Physical Education and sports and the secondary purpose of the study was to examine the divergences in the attitudes' from the equal probability occurrence. The attitude of respondents towards the Physical Education and sports were analyzed using the descriptive frequency

percentage technique for each of the thirty statements of the questionnaire on the two alternative choices i.e. Results of this endeavour revealed that college students exhibited a positive attitude towards Physical Education and sports. The results of this study might be in favour of the good prospective of Physical Education but its dose not depict the actual picture of the scene. Thus it's a great area of concern for a physical educationalist to encash the great opportunity to make popular and fruitful the Physical Education and sports in our society, so we all can live in a healthy society as well. (Adhikari, P, 2020).

To determine the attitudes of students from the Hasan Doğan School of Physical Education and Sports towards cheating in exams and to investigate changes in these attitudes in terms of several variables. The study was conducted during the 2014-2015 Academic year at the Karabük University Hasan Doğan High School of Physical Education and Sports. The Study Group consisted of 178 student teachers from the Physical Education and Sports Department and 159 students from the Sports Management Department. By the end of the study, it was established that the students from the Physical Education and Sports High School had above average attitudes and that attitudes on cheating in exams did not differ according to gender, department, type of high school attended, and YGS points; (Kayisoglu, et. Al., 2017).

The reactions and values that individuals possess towards objects or situations reflect their attitudes. A metaphor is to describe a situation or object by establishing an analogy to another situation or object. The undergraduate students of Gazi University in the 2017- 2018 academic year the aim of this study is to examine the attitudes and perceptions of undergraduate students studying at various faculties towards sports. The study, in which a mixed method design was used, was conducted withIn this context, the sample of the

study was comprised of a total of 481 (241 female, 240 male) undergraduate students studying at various departments, such as Physical Education Teaching, Banking and Insurance, Political Science and Public Administration, Law, Statistics, Finance, Chemical Engineering, Banking, Conservatory, and Psychological Counseling and Guidance (PCG). Data collection tools were "Demographic Information Form" developed by the researchers, "The Sports-Oriented Attitude Scale" developed by Koçak (2014), and "semi-structured form" prepared by researchers to collect qualitative data. In the analysis of the data, frequency, arithmetic mean, and standard deviation values were calculated and t-test and ANOVA were applied to the quantitative data. Besides, content analysis was applied to the qualitative data. Significant positive correlations were found between the sub-dimensions of the attitudes of university students towards sports and age. It was found that the sub-dimensions of the attitudes toward sports showed significant differences in favor of female participants, and the sub-dimensions of psychosocial development and mental development were found to be significantly different in favor of the students' of departments of teaching. There were significant positive correlations between the sub-dimensions of the attitudes of university students towards sports and age. In the context of the qualitative data of the study, it was discovered that metaphors obtained from the participants were found to be clustered under the categories as life source, benefit provider, value, food, delighting, professional association, nature, addiction, and necessity. It was concluded that the attitudes of university students towards sports were moderate. It was also determined that metaphors for sports were often composed of positive ones. (Kaya, et. Al., 2018).

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.

Need and importance of Physical Education in Engineering colleges:-

Physical Education plays an important role in the growth and development of students. Recent studies say that, physical well being of a student is directly related to his or her achievements in life. Physical educational is a single platform where the students learn the value of taken care of themselves through healthy eating and regular exercise. Physical Education in engineering college is an exact measure to the students to learn the value of regular physical activity and concern about fitness. Physical Education program improves the abilities of co-ordination and motor skills in

an extent. And also helps to improve muscular strength, both lower and upper body muscles, and excellent circulation of blood and oxygen.

Most of the students of engineering colleges are spend their time in the laboratories. If introduce a good regular exercise programto them, health help the students to function better in academic and non academic stream. The students who are active in the field of sports are more confident with themselves and it helps them to build self esteem. And also improves self discipline, determination, decision taking ability. Sports give equal opportunities to girls and boys, and give them awareness about gender equality, self respect and freedom of choice for choosing better life.

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 odor/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 organized 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 programwas 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 fiscal load of 2 Lakh Tones per day finding its way to the soil and water bodies contaminating them with pathogens.

The programwould 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 realize 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 student's 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, counselors, 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, neighborhood 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 programsimply 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 counseling. 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 Programserves practically as the mental health policy. Recently, there was an eight-fold increase in budget allocation

for the National Mental Health Programfor 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 interventionin 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 beedis (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 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. One in every Indian adults uses tobacco. 27% of youth aged 13-15 are expose to second-hand smoke at home and 29% of adult and 40% of youth exposed it in public places by 2020.

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 MeireSoldera (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 un-prepared 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 counselors.

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. (DrEnas K. Enas, Director, CADI). WHO predicts that, India will have10 crore or 60 percent of the world's heart

patients by 2010 (India Today, June11, 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 vigor, 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 contributes to the leading causes of morbidity and mortality among adolescents in Kerala.

Statement of The Problem

The purpose of the study was to assess the Health-risk behaviour and attitude towards physical activity among engineering college students in Kerala.

The sub purpose of the study was to construct and standardize a tool for assessing the Health-risk behaviour and attitude towards physical activity for engineering college students in Kerala.

Objectives of the Study

1. To access the Health-risk behavior among engineering students in Kerala that contribute to unintentional and intentional injuries, use of tobacco, use of alcohol and other drugs, sexual behavior, unhealthy dietary habits and physical inactivity..
2. To construct and standardize a questionnaire for assessing the Health-risk behavior and attitude towards physical activity among engineering students in Kerala.

3. To assess the Health-risk behaviours among engineering students in Kerala in 8 dimensions such as dietary behaviour and overweight, hygienic behaviour, violence related behaviour, mental health, tobacco use, alcohol and other drug use, HIV/AIDS related knowledge.

4. To understand the attitude towards physical activity in different dimensions such as physical activity as a social experience, physical activity for health and fitness, physical activity as the pursuit of vertigo, physical activity as an aesthetic experience, physical activity as a catharsis and physical activity as an ascetic experience.

5. Theattitude of engineering college students towards physical activity will help to know the state's status on important issues regarding Physical Education programs in engineering colleges. Besides, the results can be explored to be used for better co-ordination of policies concerning Physical Education, sport, health, recreation and Health Education.

Delimitations

The study was delimited to the following:

1. The study was delimited to 1000 male and 1000 female engineering college students of age between 17 to 25 years from Kerala.

2. The sample proportionately represented various districts of Kerala state in both Urban and Rural areas.

3. The study was further delimited to the engineering students from only threedepartments such as Mechanical (350 boys & 170 girls), Electronics (350 boys & 420 Girls), and Computer Science (300 boys & 410 girls).

4. The study was delimited by using the tool specifically developed for assessing the Health-risk behavior and attitude towards physical activity.

Limitations

The following are considered as limitations of this study:

1. All data were self-reported except height and weight, and the extent of underreporting of behaviours by the subjects cannot be determined, hence it is considered as a limitation of this study.

2. The data was collected only from engineering students of three branches and therefore might not be the correct representative of all students studying in engineering colleges of Kerala.

3. Questionnaire research has its limitations, any bias that might have entered into the subject on this account is considered as a limitation to this study.

4. Lifestyle of the subjects was beyond the control of the researcher, hence it is considered as another limitation of this study.

5. Owing to the social sanctions and cultural differences, many questions answered by the subjects coming under Health-risk behaviours might not have provided correct responses, hence it is considered as another limitation of the study.

6. Socio-economic and religious factors, which the scholar had any control, might have affected the responses of the students, hence it is considered as another limitation of this study.

7. The tool developed had item addressed only to behaviour that contribute to the leading causes of morbidity and mortality among

youth and adults, this might had its own drawbacks, hence it is considered as another limitation of this study.

Hypotheses

1. There will not be any association on Health-risk behaviour among urban and rural engineering students of Kerala..
2. There will not be any association on attitude towards physical activity among urban and rural engineering students of Kerala.
3. There will not be any association on Health-risk behaviour among male and female engineering students of Kerala.
4. There will not be any association on attitude towards physical activity among male and female engineering students of Kerala.
5. There will not be any association on Health-risk behaviour among various branches of engineering college students of Kerala.
6. There will not be any association on physical activity among various branches of engineering college students of Kerala.

Definition and Explanation of Terms

Health-risk Behaviour

Health-risk behaviours, which contribute to the leading causes of morbidity and mortality, 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 arebehaviours 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 neutral 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 as any bodily movement produces by skeletal muscles that requires energy expenditure says WHO (2020). Physical activity refers to all movement including during leisure time, for transport to get and from places, or as part of a person’s work. Both moderate and vigorous physical activity improve health.

Height

Height is the distance from the bottom of the feet to the top of the head in a human body says Wikipedia (2021). If the distance is occupied by a contiguous form of matter, the measurement is colloquially known as how "tall" the form is. Height is also important because it is closely correlated with health components, such as life expectancy.

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.

BMI (Body Mass Index)

Body Mass Index (BMI) is value derived from the mass (weight) and height of a person. The BMI is defined as the body mass divided by the square of the body height, and is expressed in units of kg/m2, resulting from mass in kilograms and height in metres, Wikipedia (edited in 2019).

Significance of the Study

The questionnaire constructed for this study will provide as an excellent tool for educationists, social and health workers, so as to gather data regarding Health-risk behaviours and attitude towards physical activity among engineering college students. This tool can also be used nationwide by health and education officials to improve and modify national, state, and local policies and programs designed to reduce risks associated with leading causes of mortality and morbidity.

1. The results of the study will help to understand the present status of both gender in dietary behaviour and overweight, hygienic behaviour, violence related behaviour, mental health, tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity among engineering college students of Kerala state. The results and patterns will help the teachers, parents and their neibhourhood to understand the way of thinking of the present and next generation.

2. The result of the study about different dimensions that, dietary behaviour and overweight, hygienic behaviour, violence related behaviour, mental health, tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity can be used to improve state, and local policies and programs to reduce risks associated with the leading causes of mortality and morbidity.

3. The results obtained regarding Health-risk behavior and attitude towards physical activity will help to know the status on important issues regarding Physical Education programs in engineering colleges. The results can also be used for better co-ordination of policies concerning Physical Education, sport, health, recreation and health education.

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

5. The standardized tool for assessing Health-risk behaviuors and attitude towards physical activity used for doing many often studies based on it.

CHAPTER II
REVIEW OF RELATED LITERATURE

Literature review is a description of the literature relevant to a particular field or topic. Is gives an overview of what has been said, what are the prevailing theories and hypotheses, what question are being asked and what methods and methodology are appropriate. As such it is not in itself primary research but rather it report on other findings.

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.

Takakura, 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.

Caroleo (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.

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.

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 gonorrhea 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 gonorrhea 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.

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 summarized the ways in which YRBSS data are distribute electronically.

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.

Only one study (reported in Archives of Pediatrics and Adolescent Medicine, 2003) attempted to distinguish risky behaviors among adolescents who are specifically associated with participation in team sports rather than those associated with physical activity alone. Teenagers who are physically active and participate in team sports were found to be less likely to engage in unhealthy behavior such as substance abuse and risky sexual activities than those not involved in team sports. Fewer boys in team sports were found to have used "other drugs" like cocaine, heroin and methamphetamines, compared to their active non team counterparts. Otherwise, active team males were no less likely to have used cigarettes, marijuana, or alcohol or to have initiated intercourse than their active non team or non-active peers (DiscoveryHealth.com, 2003). For female students, however, the combination of team sports and physical activity was particularly important. Female teens who participated in team sports and who were vigorously active were less likely to engage in risky behaviors than teens who were only part of a team or only exercised vigorously. This research might indicate that physical activity in general, and being on a team but not participating are not sufficient enough to gain a positive effect on health behavior—teens need to be active members of the team. The study's authors say team sports, particularly for girls, affords benefits beyond the known physical ones. In addition, there is evidence that parents who engage in physical activities with their children are more likely to have children with positive health behaviors. It seems clear that active parents play an important socializing role in imparting positive health behaviors in their children. There are some points to be made. First, more research must be conducted to determine if organized youth sports yield a bigger impact on

positive health behaviors than less organized physical activity that might fall under the '30 minutes of moderate physical activity' health recommendations by WHO, US Centers for Disease Control and other public health institutions. Obviously not all youth participate in organized, competitive sport activity. Indeed, the children at risk for inactivity and negative health behaviors may be those who do not have access to or are not inclined to participate in group sports. Thus, there is a need for the development of health-promoting physical activity outside of the rubric of organized, competitive sport.

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 diarrhea, 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 programmefocus 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 drank so much alcohol that they were really drank 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 4thyear 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 that 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

(10thstandard) 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 self-financing 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 every day. 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 self-financing 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.

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.

Xiaofen Deng Keating, Jianmin Guan, José Castro Piñero, Dwan Marie Bridges(2005)A meta-analysis of college students' physical activity behaviors.The authors reviewed studies on college students' physical activity (PA) behaviors and found that previous research on this topic focused on describing college students' PA patterns and their determinants. Researchers reported that about 40% to 50% of college students are physically inactive. More important, health and PA professionals in higher education have not been able to effectively increase students' PA behaviors. Interventions to promote students' PA are still at an early stage and have only produced moderate effects. The authors found primary problems with the current research on this topic to be 3-fold: (1) college students' PA has been seriously neglected as a research topic, (2) there is a lack of multiple-level approaches (ie, personal, psychosocial, and environmental levels) for examining PA behaviors in the college student population, and (3) measures of PA are subjective and inconsistent, which makes comparisons of PA patterns among different samples very difficult or impossible.

MA Abolfotouh, FA Bassiouni, GM Mounir, R Ch Fayyad (2007) organised the study related to Health-related lifestyles and risk behaviours among students living in Alexandria University Hostelsassessed health - related lifestyles and their determinants among 600 Alexandria students living in university hostels. Data were collected by questionnaires, and anthropometric University and blood pressure measurements were taken. Most students were not satisfied with their situation in terms of accommodation, health and support. About 86% ate unhealthy diets, 33.8% were physically inactive, 25.3% were overweight or at risk of becoming

overweight, 17.5% of male students were smokers and 32.2% had poor sleep behaviours. About 28% of the students adopted 3 or more current risk behaviours. About 23% reported low perceived health status and 80.3% felt they had low to moderate social support. There were significant sex differences regarding some behaviours

Anna Christakou, YannisZervas, Nektarios A Stavrou, Maria Psychountaki(2011) developed Development and validation of the causes of re-injury worry questionnaire.Re-injury worry is an important construct in competitive sport that may influence performance and increase the risk of re-injury. However, there are currently no available instruments to measure the causes of re-injury worry. The purpose of this study was to develop the Causes of Re-Injury Worry Questionnaire (CR-IWQ). The study was conducted in three independent research phases to investigate the following: (a) the content relevance, (b) the factor structure and the factorial validity, (c) the concurrent validity, (d) the discriminant validity, and (e) the test-retest reliability (intraclass correlation coefficients; ICC), and the internal consistency of the instrument. Exploratory factor analysis (EFA) was chosen to examine the factor structure of the CR-IWQ. Confirmatory factor analysis (CFA) was used to examine further the factorial validity of the instrument. A number of valid constructs were used to assess the concurrent and discriminant validity of the CR-IWQ. The reliability of the new instrument was examined using Pearson r (ICC) and Cronbach α. Three hundred and seventy athletes with an acute musculoskeletal sport injury in the last year participated in the study. EFA revealed a 12-item model, representing two factors (“Re-injury worry due to rehabilitation” and “Re-injury worry due to opponent's ability”). CFA supported the two-factor model of the CR-IWQ. The concurrent and discriminant validity of the CR-IWQ was confirmed by examining correlations between the CR-IWQ with other constructs. The ICCs and the Cronbach α indices of the CR-IWQ were acceptable. We have

demonstrated that the CR-IWQ is a good psychometric instrument that can be used for clinical and research purposes.

DejanMagoc, Joe Tomaka, Sharon Thompson (2012) conducted the study based on overweight, obesity, and strong attitudes: Predicting participation in physical activity in a predominantly Hispanic college population.Obesity is the leading cause of preventable death and conveys risk for diabetes, hypertension, heart disease, and stroke. Overweight and obesity are common among college students with surveys showing 35 per cent of college students to be overweight (National College Health Risk Behavioral Survey (NCHRBS), 1995).To examine rates of obesity, participation in exercise, and predictors of exercise among a predominantly Hispanic (72 per cent) college student sample.Three hundred and ninety two students completed questionnaires as part of a general health screening.General participation in exercise is high (61 per cent), but the majority (69 per cent) do not meet the Centers for Disease Control and Prevention (CDC) recommendations for physical activity (PA). Also, exercise importance and gender were strong predictors of participation in physical activity and exercise in this sample.Strong attitudes are an important determinant of participation in PA in this sample. Future studies might explore these relationships among other ethnic/demographic groups, as well as test the effectiveness of attitude change interventions for increasing PA.

Fátima H Cecchetto, Lucia C Pellanda (2014) construction and validation of a questionnaire on the knowledge of healthy habits and risk factors for cardiovascular disease in schoolchildren. The study included 145 children aged 7 to 11 years. The measured factors were the knowledge of healthy habits and risk factors for cardiovascular disease. Cronbach's alpha and intra-class correlation coefficient (ICC) were used to verify reliability, and exploratory factor analysis was used to assess the validity of the

questionnaire. The sample consisted of 60% females and 40% males. In factorial analysis, the Kaiser-Meyer-Olkin (KMO) test result was measures of sampling adequacy (MSA) = 0.81 and Bartlett's test of sphericity was X2 = (66) = 458.64 ($p < 0.001$). In the factorial analysis with varimax rotation, two dimensions were defined. The "healthy habits" dimension was composed of five factors (ICC = 0.87 and $\alpha = 0.93$) and the "cardiovascular risk factors" dimension was composed of seven factors (ICC = 0.83 and $\alpha = 0.91$). In the individual factor analysis, Cronbach's alphas were between 0.93 and 0.91. Total variance was 46.87%. There were no significant differences between test and retest applicationsThe questionnaire presented satisfactory validity and reliability (internal consistency and reproducibility), allowing for its use in children.

Cajetan, (2015) conducted a survey study on Personal Health Risks Behaviour Profile among University Students in the South East Nigeria: Implication for Health Education. This descriptive survey was carried out in order to determine the personal health risks behaviour profile among university students in the south east of Nigeria. A random sample of 900 students completed the questionnaire designed for the study. Out of this number 821, representing about 91.2% return rate, were used for data analysis. Means and standards deviations were used to describe the personal health risks behaviour profile of the students. T-test was used to test the entire hypotheses. Results showed that the respondents had no identifiable mental health-related, nutrition-related, physical activity-related, substance abuse-related and personal health care related risks. T-test showed that no significant differences existed in most of the personal health risks behaviour profile between male and female respondents. Where significant differences existed, they inclined towards favoring the females. The study supports the need for compulsory health education curriculum activities to help educate the students in making healthy behaviour choices and leading a healthier lifestyle in order

to improve or at worst maintain the status quo in their personal health risks behaviour profile.

The results of the study indicated that university students in the south east of Nigeria had no personal health risk problems. There is fear to rely in these results because of inconsistent findings across the globe. The results of the study may not be used in making any reliable conclusion concerning other university students in Nigeria and elsewhere. However, the students studied represent an important group of the Nigerian-student university population and information generated will be useful in the planning of future health education and other health related programmes in universities. The study supports the need for compulsory health education curriculum activities to help educate the students in making healthy behaviour choices and leading a healthier lifestyle in order to improve or at worst maintain the status quo in their personal health risks profile. Health risk problems among university students have been gradually increasing in recent years. The findings of the present study cannot be generalized for all university students, since the study sample only included limited faculty students; however, the study variables can guide other researchers in their future studies on the personal health risks behaviour profile among university students in Nigeria and elsewhere. There is an urgent need for compulsory health education curriculum activities to help educate the students in making healthy behaviour choices and leading a healthier lifestyle in order to improve or at worst maintain the status quo in their personal health risks profile.

C.I., Onwunaka, C., &Nwimo, I.O. (2015) conducted a survey on Personal Health Risks Behaviour Profile among University Students in the South East Nigeria Implication for Health Education and survey was carried out in order to determine the personal health risks behavior profile among university students in the south east of Nigeria. Means and standards

deviations were used to describe the personal health risks behaviour profile of the students. The study supports the need for compulsory health education curriculum activities to help educate the students in making healthy behaviour choices and leading a healthier lifestyle in order to improve or at worst maintain the status quo in their personal health risks behaviour profile.

Simon Roberts, Matthew Reeves, Angus Ryrie(2015) conducted a study based on the influence of physical activity, sport and exercise motives among UK-based university students. Recent evidence suggests that the majority of the adult population fails to achieve the recommended target of 30-minutes moderate intensity exercise, days a week. This includes university students who often have the time to engage in physical activity. The aim of this study was to determine exercise motives for a UK-based student population. The motives of 736 participants (± 20.45 years of age, SD=3.50) regarding participation or non-participation in free-time exercise, sport and physical activity were measured using the Exercise Motivation Inventory-2 (EMI-2). Significant main effects were reported for age (P = 0.1) and gender (P = 0.1). Students over 23 years of age reported higher levels of motivation than the other age groups (i.e. for stress, revitalisation and avoidance of ill health). The results of this study indicate that the motivation of UK university students to engage in physical activity or exercise demonstrates gender and age differences. These findings should enable health professionals and health educators in university environments to design preventative programmes aimed at reducing multiple risk behaviours among university populations. These could include gender-specific exercise programmes underpinned by appearance motives for female university populations.

Natasha Noble, Christine Paul, Heidi Turon, Christopher O (2015) organised a study modifiable Health-risk behaviours are related? A systematic review of the clustering of Smoking, Nutrition, Alcohol and

Physical activity (‘SNAP’) health risk factors.There is a growing body of literature examining the clustering of Health-risk behaviours , but little consensus about which risk factors can be expected to cluster for which sub groups of people. This systematic review aimed to examine the international literature on the clustering of smoking, poor nutrition, excess alcohol and physical inactivity (SNAP) health behaviours among adults, including associated socio-demographic variables.Fifty-six relevant studies were identified. A majority of studies (81%) reported a ‘healthy’ cluster characterised by the absence of any SNAP risk factors. More than half of the studies reported a clustering of alcohol with smoking, and half reported clustering of all four SNAP risk factors. The methodological quality of included studies was generally weak to moderate. Males and those with greater social disadvantage showed riskier patterns of behaviours; younger age was less clearly associated with riskier behaviours.Clustering patterns reported here reinforce the need for health promotion interventions to target multiple behaviours, and for such efforts to be specifically designed and accessible for males and those who are socially disadvantaged.

Melinda J Ickes, Jennifer McMullen, Courtney Pflug, Philip M Westgate (2016) the Impact of a university-based program on obese college students' physical activity behaviors, attitudes, and self-efficacy. More than one third of college students are either overweight or obese, making college campuses an ideal setting to target at risk behaviors while tailoring programs to the evolving lifestyle of college students. Purpose: The purpose of this study was to determine the impact of a 15-week, campus-based lifestyle modification program on obese college students with regard to physical activity behaviors, attitudes, and self-efficacy. Methods: Eighteen college students completed pre- and postintervention surveys that measured participants' behaviors, attitudes, stage of change, self-efficacy, social support, environmental factors, and body mass index. The PACE Adult

Measure was used to assess physical activity variables for the study. Results: The intervention was successful at increasing physical activity level and self-efficacy and decreasing body mass index (BMI) when comparing pre and post measures ($P < .05$). Discussion: The results of this study suggest that collaborative programming on college campuses targeted toward obese individuals is beneficial in increasing physical activity and self-efficacy. Future research should examine the long-term impact of these on-campus collaborative programs on college students' health and well-being. Translation in Health Education Practice: The findings support the implementation of similar programming aimed to improve physical activity outcomes on a college campus.

Amy D Linder, Arthur Harper, Jinhong Jung, Andrea Woodson-Smith(2017)study based on the behaviour Attitude and Intention and their Impact on Physical Activity among College Students Enrolled in Lifetime Fitness Courses.Despite the ethnicity of an individual college student, a majority of college students do not partake in the recommended amount of exercise according to the American College Health Association (2013). Therefore, both the obesity and overweight rates with college students were reported as 29% in 2000 and 32.5% in 2009 (ACHA, 2010). The purpose of this quantitative, cross-sectional study was to examine whether Ajzen's Theory of Planned Behavior (TPB) determinants explains physical activity among college students in North Carolina universities. 100 university students who enrolled in lifetime fitness classes from two institutions were asked to participate in completing an online Leisure-Time questionnaire for a period of two weeks. Partial correlations were used to determine relationships between the TPB determinants of attitude, subjective norm, descriptive norm, perceived behavior control, intention, and physical activity among the college students. The primary results from the partial correlation analysis revealed that the intention and attitude determinants had the largest significant impact

on whether the university students engaged in exercise. Future studies should focus on investigating whether the intention and attitude determinants have substantial influence on physical activity on college students in the regions of the United States with high obesity rates, i.e., Mississippi and Alabama.

Recently with widely available access, the web has emerged as a medium for new interventions. However, as yet, little is known about what makes some websites more effective than others. This study investigated an approach to developing websites that utilized two media characteristics – media richness and interactivity – to promote physical activity among college students. Four forms of websites were developed and tested in a 2×2 between-subject experiment (high vs. low richness; high vs. low interactivity) that was conducted among 205 participants. Overall, media richness had a significant main effect on college students' intention to visit the fitness center while interactivity influenced the likelihood they would recommend it. Although media richness did not have a significant main effect on recommendation, a significant interaction effect was observed that rich media led to higher recommendation intention when interactivity level was low. In addition, knowledge, attitude and trustworthiness of the fitness center mediated the effects of media richness and interactivity on behavioral intentions. These findings support the efficacy of utilizing these media characteristics to design web-based health interventions promoting college students' physical activity.

Yıldızer, G., Özboke, C., Taşçıoğlu, R., &Yılmaz, İ. (2017) conducted a study oninvestigate attitudes of pre-service teachers toward the teaching profession with respect to their gender, grade level, whether participants regularly participate in physical activities, and whether pre-service students have a teacher-parent in their family. Research was conducted on 469 pre-service Physical Education teachers (Mage=21.35, SDage=2.49), 188 female

(Mage=20.89, SDage=2.30) and 281 male (Mage=21.66, SDage=2.57) students from five different universities in Turkey. In this study the "Attitude Scale for the Profession of Physical Education Teaching" was used. It has two factors: "concern for profession" (CP) and "affection for profession" (AP). Independent sample t-test results indicated that there were no significant differences with respect to gender or having a teacher-parent in both factors and total attitude points ($p>0.05$). Pre-service Physical Education teachers who participate in physical activity had significantly higher points in AP and the total scale in comparison to those who do not participate in physical activity ($p<0.05$). ANOVA results indicated that based on grade level there were significant diff erences in CP and total attitude ($p<0.05$). Students' concern about employment may be associated with diff erences in attitude scores between grade levels. The positive effect of physical activity participation and their professional teaching education on stress resilience might also be an important factor for increasing positive attitudes toward the teaching profession.

Thomas, J., & Joseph, P. T. (2019) conducted a study on onstruction and standardization of physical activity attitude scale for professional college students on social factors. The purpose of this study was to construct and standardize physical activity attitude scale for professional college students. They are one of the highly stressed student communities due to high academic pressure. The main objectives of this study were to improve their attitudes towards physical activity and motivate them to use their leisure time properly by involving in various physical activities. The Scale consists of four dimensions, such as Physical, Academic, Psychological and Social. The present study is limited to only on social factors. The Population for this study consists of the students of Engineering colleges from all the fourteen districts of Kerala, sample size was 3000 with 1500 male and female each. The statements of the Scale were statistically analysed by using Factor Analysis

and Pearson's Product Moment Correlation. Norms were developed using T scale.

deJonge, M. L., Omran, J., Faulkner, G. E., &Sabiston, C. M. (2020). Post-secondary campuses provide students with a range of physical activity resources and programs. Despite the wide-ranging and accessible nature of on-campus physical activity and exercise facilities, limited research has explored physical activity as a treatment for poor mental health within the post-secondary context. The current study aimed to explore students' and mental health stakeholders' beliefs and attitudes towards physical activity for mental health.Semi-structured individual interviews were conducted with students experiencing depressive symptoms (N = 15) and with mental health stakeholders (i.e., mental health counsellors, psychiatrists and the lead director of mental health services; N = 5) from a large Canadian university. The interviews were analyzed separately using a data-driven inductive thematic analysis, and then cross-referenced to generate common themes.Mental health stakeholders voiced their attitudes and beliefs on clinical discussions of physical activity for mental health, while students discussed their uptake to physical activity for mental health. Comparable themes broadly situated attitudes and beliefs within positive perceptions of physical activity as a unique mental health support; barriers that influence clinical discussions and student uptake; and strategies to facilitate clinical discussions and student uptake. Taken together, the discussions portrayed a need for accessible resources and programs specifically tailored towards physical activity for mental health.The findings highlight the acceptability of physical activity as a mental health intervention tool within a post-secondary context. Importantly the results provide implications for developing strategies to incorporate physical activity as an acceptable support method within mental health service

Júlio César Nasário, Victor Zaia, Camila Martins Trevisan, Simone Garzon, Antonio Simone Laganà, Erik Montagna(2020) conducted a study based on the attitudes and Values of Physical Education Professionals and Undergraduate Students about Their Role in Health Promotion.Physical Education (PE) is identified with health, with PE teachers and school PE regarded as legitimate instruments for health promotion. The PE teacher's conceptions, attitudes, and values regarding the role of PE are inseparable from their performance. Thus, the objective of the present work is to verify concepts and attitudes of PE professionals and undergraduate students, in order to verify how they value their role in health promotion. This was a cross-sectional study that used surveys to assess attitudes and values of PE professionals and undergraduate students about their concepts of the role of PE in health promotion. A total of 942 PE professionals and undergraduate students regards themselves as players in health promotion (86.9%) despite no clear definition about the concept of health or the curriculum to attain such a goal, mainly based on academic training only. Also, they attribute the responsibility for childhood obesity and lack of motivation for the practice of physical activity to external factors, such as media (72.6%), family (84.7%), and technologies (83.1%). Despite participants regarding themselves as players in health promotion, there is a loose definition on how to promote health, and how to provide curriculum and strategies to meet the needs of public health.

Mark A. Thompson1; John Toner; John L. Perry 2, Rachel Burke, and Adam R. Nicholls1 (2020) conducted with trained and gender-matched athletes were randomly engendered with one of five stress appraisals (challenge, threat, benefit, harm/loss, or control) and completed three 16.1 km Mark A. time trials on a SRM cycle ergometer. Salivary cortisol concentration was measured via an ELISA to assess neuroendocrine response, whilst psychometrics measuring appraisals, emotions, and coping behaviours were also completed. Penalized Multinomial Logistic Regression analyses of performance change revealed that temporal orientation of appraisal was a

causal influence upon performance, with benefit (β= 5.13, 95% CI= 1.90, 10.93, p< 0.001, OR= 169.00) and harm/loss (β= 3.15, 95% CI=. 46, 8.18, p= 0.019, OR= 23.40) groupings significantly facilitating and inhibiting performance respectively. Threat appraisals lead to a performance dichotomy, with both significant improvement (β= 3.41, 95% CI=. 52, 8.54, p= 0.018) and significant deterioration (β= 3.08, 95% CI= 0.06, 8.23, p= 0.046) more likely to occur than a non-significant change (OR= 30.33 and 21.67 respectively). Variation across temporal orientation also translated into neuroendocrine response, with cortisol spikes found in threat (g=-0.9), compared to a decrease in harm/loss (g= 0.74).Stress appraisals significantly influence psychophysiological response and performance, with past-oriented appraisals as autonomous and influential as future-oriented appraisals. Spikes in cortisol levels in the future-oriented stress appraisal threat, compared to a decline in the past-oriented harm/loss, suggest that the fear of defeat may be physiologically more stressful than losing itself. Practitioners are advised to engender benefit stress appraisals in order to facilitate both psychophysiological well-being and subsequent performance proficiency among their athletes.

Shekari, F., Habibi, P., Nadrian, H., & Mohammad pooraslA.(2020). Health-risk behaviors among Iranian university students reveals the high-risk behaviors are among the most serious threats for the physical and mental health of adolescents and young adults. Applying an online survey questionnaire, the data were collected from 3649 students and analyzed using Latent Class Analysis.For total sample, standardized prevalence rates of cigarette smoking, hookah use, alcohol consumption, substance abuse and unsafe sex were 18.5 .were the most and the least common risky behaviour among the students. In this we-based survey, a considerable number of students, particularly boys (18%), were at high-risk class, stressing the need for preventive interventions for this group of youth.

CHAPTER III
METHODOLOGY

Methodology is the systematic, theoretical analysis of the methods applied to a field of study. In this chapter, the selection of subjects, subject orientation, data collection protocol, effective questionnaire preparation and statistical techniques adopted for data analysis have been explicitly explained.

Selection of Subjects

The purpose of the study was to assess the health risk behaviour and attitude towards physical activity among engineering students in Kerala. To fulfil the purpose of the study, 1000 boys and 1000 girls were randomly selected from different engineering colleges in Kerala, such as, government, aided and self-financing, and in the age range of 17 to 23 years.

Subject orientation

The nature and importance of the study were explained to the subjects and those who have consented to serve as subjects in this study. The subjects were free to withdraw their willingness in case of having any discomfort during the period of their participation but there was no dropout during the study.

Sample

The study was intended to provide reliable data describing the characteristics of different engineering college students and the sample represents proportionately all the districts of Kerala state with 1000 boys and 1000 girls.

The sample design divides the state based on districts and that for area categorized based on the location such as rural and urban, and thereafter based

on the total strength of students belonging to that area accordingly proportionate selection of sample was taken.

Fourteen (14 district) Primary Sampling Units (PSU) were created, so that the total population in each group were approximately equal. The PSUs 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, a minimum one or three colleges from each PSU's were selected randomly.

All the students were invited to participate in the testing programme. Following colleges were selected for collecting data as per the location such as (rural and urban), types of colleges (government, aided and self-financing) and gender (male and female): -

Table 3.1

List of college's fromwere the data was collected

Sl. No.	Name of College	Number of Girls	Number of Boys
1.	College of Engineering, Thiruvananthapuram	50	50
2.	Ace College of Engineering, Thiruvananthapuram	30	30
3.	TKM, Kollam	50	50
4.	College of Engineering, Perumon, Kollam	30	30
5.	UKF Engineering, Kollam	35	40
6.	Musaliar College of Engineering, Pathanamthitta	35	40
7.	Sree Narayana Engineering, Adoor	30	30
8.	Carmel Engineering College, Alappuzha	35	35
9.	Saint Gifts Engineering College, Kottayam	30	30

10.	RIT, Kottayam	40	40
11.	Government Engineering College, Idukki	40	40
12.	College of Engineering, Munnar	25	30
13.	SCMS School of Engineering &Tchnology, Eranakulam	35	35
14.	Viswajyothi College of Engineering, Eranakulam	35	35
15.	Government Engineering College, Thrissur	50	50
16.	Vidya Academy of Science & Technology, Thrissur	25	30
17.	Sahrudaya Engineering College, Kodakara	25	30
18.	NSS Engineering College, Palakkadu	25	30
19.	Government Engineering College Sreekrishnapuram	35	30
20.	EKC, Manjery	35	30
21.	MES Engineering College, Kuttippuram	35	35
22.	Government Engineering College, Calicut	50	50
23.	Malabar College of Engineering, Calicut	40	40
24.	Government Engineering College, Wayanad	35	30
25.	Government Engineering College, Kannur	35	30
26.	Vimaljyothi Engineering College, Kannur	40	40
27.	College of Engineering, Thrikkarippur	35	30
28.	LBS College of Engineering, Kasaragode	35	30

The category wise list of selected subjects are given in table 3.4.

Table 3.2

Category wise list of related subjects.

Area	Sex	Category	Electronics	Mechanical	Computer Science	Total
Rural	Boys	Aided	50	50	50	150
		Self-financing	50	50	50	150
		Government	75	75	50	200
	Girls	Aided	70	25	70	165
		Self-financing	70	20	70	160
		Government	75	40	70	185
Urban	Boys	Aided	50	50	50	150
		Self-financing	50	50	50	150
		Government	75	75	50	200
	Girls	Aided	65	20	65	150
		Self-financing	65	20	65	150
		Government	75	45	70	190

Data Collection Protocols

Data collection procedures are similar for all PSUs. Local procedures are followed before administering the questionnaire in college. Survey procedures are designed to protect student privacy by allowing for anonymous and voluntary participation. In the survey, students completed the self-administered questionnaire and recorded the responses directly in an answer sheet, taking adequate time. To the extent possible, seating of the students was spread throughout the classroom to minimize the chance that students will see each other's responses. The students were asked to seal the answer sheets in an envelope and data the scholar collected it.

Preparation of authentic and standardized questionnaire on Health-risk behaviour and Attitude towards Physical Activity.

As the primary step, a temporary questionnaire was developed to identify the health risk behaviour and attitude towards physical activity among engineering students. Broadly all health-risk behaviours has been classified in to eight dimensions. namely, Dietary behaviour and overweight, hygienic behaviour, violence related behaviour, mental health, tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity. The temporary questionnaire was modified on the basis of comments and suggestions obtained from experts, following this a pilot study was conducted with a sample size of hundred and thereafter the responses of students were examined.

Questionnaire on Health risk behaviour and Attitude towards Physical Activity

In order to measure health risk behaviour and attitude towards Physical Activity of engineering students, the scholar has developed and standardized a questionnaire with the help of supervising teacher and Physical Education experts. The details of the procedure involved in the constructing and standardization of the questionnaire is given below.

Construction and Standardization of the Questionnaire

Phases in the construction and Standardization of the Questionnaire: -

The scholar of the various vital variables involved in Health risk behaviour and attitude towards physical activity of engineering college students. Thereafter a questionnaire was constructed through the six phases as in order given below.

1. Selection and development of the test plan
2. Differentiating test items based on their significance.
3. Response test from the students.
4. Construction of final draft of questionnaire.
5. Checking the validity of the questionnaire
6. Authenticity of the questionnaire

The details of each phase of the tool preparation are as follows:

1. **Selection and development of the test plan**: Selection of components that are to be included in the tool and selection of content area is finalized in this stage. In order to develop the questionnaire, the scholar has gone through books, journals available existing questions, literature, research and documents regarding the components of Health risk behaviour and attitude towards physical activity among engineering students. Later, the components were categorized in the following manner: -

Content selection: - In order to select the content of the questionnaire, the investigator discussed with the supervisor and six often Physical Education experts and finalized the selection of contents related to Health risk behaviour and attitude towards physical activity.

Blue print preparation: - Blue print was made on the basis of components of questionnaire and the sub components prepared by the scholar. It has given a broad frame work for the tool within which the scholar has to work. The scholar has given reasonable weight-age for the components and the blue print of the questionnaire on Health risk behaviour and attitude towards physical activity and is given in Table 3.1.

Table 3.3

Blue print of Questionnaire on Health risk behaviour Attitude towards Physical Activity

Sl No	Components	Question Numbers	No of Items
1	Demographic factors	1,2,3,4	4
2	Dietary behaviour and overweight	5,6,7,8,9,10,11	7
3	Hygienic behaviour	12,13,14,15,16,17,18	7
4	Violence-related behaviour	19,20,21	3
5	Mental health	22,23,24,25,26,27	6
6	Tobacco use	28,29,30,31,32,33,34,35,36	9
7	Alcohol and other drug use	37,38,39,40,41,42,43,44,45,46, 47,48,49,50,51,52	16
8	HIV/AIDS related knowledge	53,54,55,56,57,58,59,60,61,62	10
9	Attitude towards physical activity	63,64,65,66,67,68,69,70,71,72, 73,74,75	13
		Total	**75**

2. Questionnaire is the tool to achieve the objectives of research and provides complete and accurate information for analysis and interpretation. The first draft of questionnaire on Health risk behaviour and attitude towards physical activity comprised of 75 items. After preliminary corrections and modifications on expert advices the questionnaire was critically scrutinized by six Physical Education experts and thereafter suitable corrections. Later on the basis of expert opinion the 2nd draft of the questionnaire were divided in to three categories based on their priorities.

a. Essential

b. Useful but not essential

c. Not necessary

Thereafter, the content validity ratio (CVR) of each item was calculated by using the Lawshe (1975) formula.

$$CVR = \left(\frac{ne - \frac{N}{2}}{\frac{N}{2}} \right)$$

Where

CVR = Content Validity Ratio

ne = number of panelists indicating an item "Essential"

N = Total number of panelists

The items which were significant at .05 level of significance (minimum value is .99 for N=6) using the content validity table by Lawshe (1975) were selected. Thus, the third draft of the questionnaire contained 46 items.

3. Response Test from the students: - As a primary step of response test, questionnaire on Health risk behaviour and attitude towards physical activity was distributed among 40 engineering students. Necessary instructions were given to the students regarding mode of approach to the questionnaire. After the test was over, the response sheets were collected from the students.

4. **Constitution of the final draft of questionnaire: -**On the basis of response test, 10 questions were modified for clarity and objectivity of the questionnaire by retaining the same number of 46 questions.

Table 3.4

The distribution of items in the final form of Questionnaire on health risk behaviour and Attitude towards Physical Activity

Sl.No.	Dimension	Item No.	Total Item
1	Demographic factors	1-4	4
2	Dietary behaviour and overweight	5-8	4
3	Hygienic behaviour	9-12	4
4	Violence-related behaviours	13	1
5	Mental health	14-16	3
6	Tobacco use	17-22	6
7	Alcohol and other drug use	23-35	13
8	HIV/AIDS related knowledge	36-38	3
9	Attitude towards physical activity	39-46	8
	Total		**46**

5. **Validity of the questionnaire:-** Validity determines the fruitfulness of the research that which it was intended to measure and scientific basis of the results provided (Joppe, 2000), validity can be measured in various forms for the present study for validity, content validity and concurrent validity of the questionnaire on health risk behaviour and Attitude towards physical activity are taken into account.

a) Face validity: - Face validity refers to the superficial measuring of the performance of the content. Basically, it deals about the deep and harmonious public relationships. The scholar examined the relevant and

appropriateness of questionnaire by analysing the content to ensure face validity.

b) Content validity: - Validity is that quality of data gathering instrument or procedure that enables to measure what is supposed to measure (Best and Khan 2008). Degree comparison between the accepted criteria and a test measure can be shown by an index of validity. Content validity is established by the investigator through careful reference to current literature and through distribution of tool to subject experts. Expert panel comprising of six practicing Physical Education teachers examined the content and each and every item included in the test, validity of the test item, observations, directions, scoring procedure and offered valuable suggestions. At the developmental stage of the questionnaire expert suggestions were integrated. Through this procedure, irrelevant statements were deleted and new statements were incorporated in the questions as per the suggestions of experts. Content validity of the tool was established through this procedure.

c) Concurrent validity: - The concurrent validity was established by the scholar by administering the questionnaire on Health-risk behaviour and attitude towards physical activity to hundred engineering students. Concurrent validity was calculated through the correlative scores of the questionnaire and another reliable test conducted on the of the questionnaire.

6. Reliability of the questionnaire:- -

Authentically refers to the measuring tool's consistency is assessing items whatever it is measuring. An authentic measuring tool will be most reliable and free from measurement errors. In this study, split- half method was administered to assess the reliability of the tool.

The split half method: Correlation of items of a test is essential to measure a single construct. In this study split half method was used. It was administered to hundred engineering students. In this, items were divided into two equal halves as numbered as odd number for one half and even number for second half. Using the Spearman Brown Prophecy formula the reliability coefficient of the total score of the tool was tested and found to be .82. The reliability coefficient is best at the account and from this we can assure that the present questionnaire is of high reliability for measuring the Health-risk behaviour and attitude towards physical activity of engineering students.

Item Rationale: -

Demographic Question(s)

Question 1: How old are you?

Question 2: What is your sex?

Question 3: In which department are you studying?

Question 4: In which category do your college belongs to?

Rationale

The above branch of questions measures the age, gender, department and the category of the students related to the health risk behaviour attitude towards physical activity. Demographic factors influence various factors describing the health risk behaviour attitude towards physical activity and its variations helps program planning and implementation.Height, weight, dietary behaviour and overweight questions.

Question 5: What is your height and weight?

Question 6:During the past 30 days, how often did, you feel hungry because of not having enough food at home?

Question 7: How frequently did you usually eat fruits such as ripe bananas, papaya, pineapple, grapes, orange or any other?

Question 8: - How often per day did you usually eat vegetables such as ladies' finger, pumpkin, drumstick, brinjal, tomato, plantain raw or any other?

Rationale: - Above questions measures the self-reported height and weight, lack of food and inadequacy of consumption fruits and vegetables. Body mass index can be calculated by using the data available on self-reported height and weight. It also helps to categorize engineering students as healthy, underweight and life style diseases and obesity are the primary cause for 61% death reported in developing nation like India. Overweight and obesity in the urban population of India was lowed to be 11.38% used that of obesity is 2.24% as per the national family health survey conducted in 2006. As per the National Health and Nutrition Examination Survey done by US in 2004 produces over weight was lowed to be 66.3%. But as per general household survey done by UK in 2003 obesity was at 61%. Higher percentage of overweight and obesity could be because of the imbalance in the diet and faulty food habits prevalent in the region.

Gender is one of the biological factors affecting the weight status. It was observed that the prevalence of over weight is generally higher in females than males. In females, extra energy gets converted in to fat. This pattern of energy usage or nutrient practicing in females contributes to further positive energy balance and fat deposition. Age is another biological non modifiable factor which influences individual's susceptibility to weight gain and the development of obesity. Overweight or obesity required during childhood or

adolescence may continue throughout life and leads to coronary heart diseases, osteoporosis and gall bladder diseases. Its lowed that overweight prevalence increased with the use in age.

Dietary energy increase is the major end of the energy balance equation. The prevalence of overweight was higher among those who concerned more than recommended calories than those who were taking recommended or less calories per day. Ex: - Intake of large amount of oil intake, consumption of refined oil and saturated fats leads to overweight and obesity.

Obesity and overweight combination deal to cardio ailments and respiratory diseases such as Chronic Obstructive Pulmonary Diseases (COPP) and asthma. As per the study of Detorenzon (2007) is obese individuals, pulmonary and chest wall complaints was reduced due to fat deposition in chest and the abdomen which ultimately results in low elasticity and reduced dispensability of extra pulmonary functions.

As per the recent study of Harward School of Public Health diet and life style people who increased their intake of whole grains, whole fruits (fruit juice) and vegetables grained less weight because they can back on calories from other foods. Fibre involved in these foods may be responsible for weight control since fibre slows digestion and thereby helping to curb hungry. Fruits and vegetables are also high in water which can make people healthier on fewer calories. Minimally processed vegetables and fruits also help to prevent weight gain. As per the kidneys of CDCP in 2002, only 23.3% of male college students and 19.7% of female college students are in taking at least five servings of vegetables and fruits per day. Dietary patterns with higher intake of fruits and vegetables are associated helps to reduce the risk of certain types of cancers (Van Duyn MA 2000, NIS, ARI 1997 & Terry 2001). In order to reduce obesity and over weight to a commendable state, the World

Health Organization and report on food and agriculture. United states recommends people to exclude starchy vegetables and consume at least five servings of fruits and vegetables per day. From this it can conclude that healthy food habits and proper diet including fruits and vegetables can prevent over weight and obesity in adolescence which is very common now a days.

Hygiene Question(s):

Question 9 : How did you wash your hands before eating for the past 7 days?

Question 10: Are the toilets or latrines safe at college?

Question 11: Are the toilets or latrines hygienic at college?

Question 12: How often do you use soap when washing your hands after using toilet or latrine?

Rationale

Above quoted questions in this module measures the frequency of adequate hand washing after using toilet. Study conducted by world health organization in 2014 shows that in low- and middle- income countries (LMIC's) 8,42.000 deaths was caused by inadequate wash which composes of 58% of total deaths due to diarrhoea. Study also reveals that 5,02,000 deaths was caused by unsafe and insufficient drinking water 2,50,000 deaths due to inadequate sanitation and 2,97,000 was due to inadequate hand washing.

According to a study published in medical journal Lancet, diarrhoea is the third leading cause of childhood mortality rate of children under 5 years of age comes under diarrhoea. As per a study conducted in 2015, India continues to record one of the world's highest rates children mortalities under five years due to diarrheal with more than 1,00,000.

Globally diarrheal is the fourth bigger killer of children under the age of five due to measures taken by the government and other nongovernment organizations mortality rate from diarrheal diseases was dropped by 43.2% in India and the number under five deaths in India declined from 3.33 million in 1990 to 1.34 million in 2013. The study based on the data from the global burden of diseases study 2015" shows that globally almost 5,00,000 a year were dying under 5 years due to diarrheal diseases.

College Violence Questions: -

Question 13: How many times were you in a physical fight for during the past one year?

Rationale: -

This question helps the researcher to measure the magnitude of violence in college, how often students have been physically attacked, how often they have participated in a physical fight, and the circumstances surrounding serious injuries. The World Health Organization defines violence as ''the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, which either results in or has a high likelihood of resulting in injury, death, psychological harm, mal development or deprivation''. From this definition, institutional violence can be described as any physical attacks between students or by students on college staff, which could occur during college sponsored events, in the college premises. Adolescent violence is a public health problem and may occur in the form of bullying, shooting, brawls and a host of other physical abuses. The consequences of college violence are grave and in extreme cases have led to the loss of lives. Other effects of institutional violence include vandalism and loss of property – especially college facilities,

poor human capital development, moral decadence, increase in crime rate, erosion of cultural values and a bad reputation for college.

In college campuses, students experience increasing targeted violence like attacks by known or knowable attackers, aggravated assault, forcible rape, and robberies which can lead to serious injury and even death. Risk factors that predict violence by youth include substance abuse, conflicts at home, harsh or inattentive parenting, antisocial and delinquent peers, and neighborhoods where crime and drug use are prevalent. Bullying, cigarette smoking, and alcohol use are the other high-risk activities in which students are often engaged. It may result in poor academics. Adolescents who are victims of violence are also more likely to be reasons of violence during adulthood. A high grade-point average, religiosity, and healthy relation with family and peers have all been cited as protective factors against youth violence, these findings accordance with National Centre for Injury Prevention and Control, Centres for Disease Control and Prevention. (2014). Victims of bullying have increased stress and reduced ability to concentrate that results the high-risk rate of aggressive behaviour, substance abuse, and suicide attempts (Anti-Bullying Centre, 2002).

Mental Health Question(s): -

Question 14: How often have you felt lonely for the past 30 days?

Question 15: Have you ever seriously considered attempting suicide for the past 12 months?

Question 16: How many close friends do you have?

Rationale

The questions in this module measure the feeling of loneliness, sadness, loss of sleep due to stress, suicide thought and attempts, and

attachment. The commonly observed mental health problems faced by the adolescents are psychotic disorders (trouble in distinguishing between fantasy and reality), behaviour disorders, depression, anxiety disorders, attention deficit, hyperactivity disorder, cognitive disorders, and other mood disorders.

Students in professional colleges dominate the list when it comes to stress, depression and anxiety. Peer pressure, tough syllabus, parental expectations are some of the main reasons. “Mental health issues in young adults tend to be lifelong with issues ranging from depression, anxiety, suicidal behaviour obsessions to substance dependence etc.

Suicide has become leading cause of death among college students in the developed countries. It is estimated that a campus of 10,000 students surely witnessed a student suicide every 2-3 years. Data from five years of suicide deaths on 645 campuses as reported by the National Survey of Counselling Centre Directors indicates a rate of seven suicides per 100,000 students in the population. Data also indicates the suicide rate for female students (2.0/100,000) is slightly less than that of males (7.1/100,000) (Schwartz, 2011), yet it is important to recognize women attempt suicide more than men.

National Survey of College Counselling Centres 2013, College and University counseling centre directors in the United states reported 69 student deaths by suicide in the past year. These results may appear low, as directors reported only on the primary factors rather than a combination of factors. Students identified at greatest risk of suicide and attempts are those with an existing mental health problem.

The deep-rooted causes must be addressed. The government must undertake a comprehensive study on the reasons behind these problems.

Second, the curriculum should give importance to mental exercises and meditation. The Delhi government's initiative on the 'Happiness Curriculum' may be a step in the right direction. With regards to higher education, 12 measures were suggested by the Justice Roopanwal Commission (2017). One of them has stressed on making Equal Opportunity Cells with an anti-discrimination officer functional in Universities and Colleges.

It is high time to redesign the educational ecosystem in ways that inculcate new meanings, new ideas of living, and renewed possibilities that could transform into a life worth living. Family involvement serves as a protective gear, whereas, regular contact may help to remind the student about the love and care, from the supporting network. It is necessary to know the risk factors and be aware of the mental health services available at college and, if necessary should take help and obtain the services. Find out how the college handles this issue. It is necessary, to contact the college authorities to identify ways to ensure the safety of the student and how to get linked to resources. An institution should implement regular screening program and counseling for depression, other serious mental illness and suicide related behaviours. The entire campus plays an active role since suicide is a complex issue. Both individual and environmental factors are to be addressed as campus wide. Parental awareness and educational programs are effective measures to reduce the rate of such issues.

Tobacco Use Question(s): -

Question 17: What was your age when you first tried a cigarette?

Question 18: How many days have you smoked cigarettes for the past 30 days?

Question 19: During the past 30 days how many days have you used any other form of tobacco such as gudka, hans, and panparag?

Question 20: Have you ever tried to stop smoking cigarettes during the past 12 months?

Question 21: How many cigarettes have you smoked daily for the last 30 days?

Question 22: Do your parents or guardian use any type of tobacco?

Rationale:

The questions above, measures current cigarette use, age of initiation of cigarette smoking, attempts for cessation of smoking, current use of other tobacco products, exposure to second-hand smoke, and tobacco use by parents/guardians (i.e., role models).

Tobacco use including both the smoking and the non-smoking forms of tobacco is customary in India .The World Bank has reported that every day around 82000-99000children and adolescence all over the world begin the habit of smoking. Half of them tempt to continue the use of tobacco and the half of the adult smokers die prematurely due to tobacco related diseases. Most college students who smoke cigarettes do not start on a daily basis. Intermittent smoking is very common among college students, accounting for more than two thirds of college smokers. The broad category is often referred to as *light and intermittent smoking (LITS),* with several subcategories. Examples include *occasional smoking* which typically refers to smoking on some days, but not all days or smoking every few days, every few weeks, or every few months. It has been chosen to focus on nondaily smoking, because this definition has been shown to be valid and stable over time.

The major threat faced for intervention is the fact that the nondaily smokers never consider themselves as tobacco users. Nondaily smokers often minimize the health effects of the tobacco use. Some studies reported tobacco

use in different population groups and its prevalence from about 15% to over 50% among men. Differences in its prevalence are rather wide for the non-smoking forms. Tobacco smoking in most parts of India except Punjab, Maharashtra and Sikkim is reported in about one fourth to half of adult men of over 15 years of age. Amongst women, smoking were more common in the Jammu & Kashmir, North Eastern states and Bihar, while most other parts of India had prevalence rates of about 4 percent or less.

All these results of the studies clearly indicate a higher prevalence of tobacco smoking in adolescence. Detailed information on the type of smoking forms, quit rates, amount smoked and relationship with different demographic variables is relatively negligible. Smoking substantially increases the risk of death due to cancers, heart disease, stroke, chronic respiratory disease and other conditions.

College health programmes can reduce tobacco use by implementing policies to prevent tobacco use among students, faculty, staff, and others connected to them. Providing awareness and education for preventing tobacco and by offering tobacco cessation programmes for faculty, staff, and students will be more effective in creating a tobacco free campus.

3.1. Alcohol and Other Drug Use Question(s): -

Question 23: What was your age when you had your first drink of alcohol other than a few sips?

Question 24: During the past 30 days on how many days did you have at least one drink containing alcohol?

Question 25: During your life, how many times did you drink so much alcohol that you were really drunk & had a hang-over, felt sick,

headache got into trouble with your family or friends, missed college, or got into fights, as a result of drinking alcohol?

Question 26: How old were you for the first time when you were completely drunk?

Question 27: What is the quantity of the drinks you have had on one occasion?

Question 28: What type of alcohol do you usually drink?

Question 29: Whom do you usually drink alcohol with?

Question 30: Do your parents or guardians know that you drink alcohol?

Question 31: Which of your parents or guardians drink alcohol?

Question 32: How many times have you used drugs such as marijuana, ganja, hashish in your life?

Question 33: How many times did you use ganja in the past 30 days?

Question 34: What was your age when you first tried marijuana or ganja?

Question 35: How many times have you shared needles or syringes used to inject any drug into your body during your life?

Rationale

These questions measure current alcohol use, episodes of heavy drinking, problems associated with alcohol use, and lifetime drug use. Alcohol contributes to many diseases and injuries, although moderate use can decrease the risk of coronary heart disease, stroke and diabetes. Use and abuse of drugs and alcohol by college students can have serious consequences. In the age range of 15 to 24 years, 50%of deaths (accident, homicides and suicide) involve alcohol or drug abuse. The negative effects of excessive

drinking are as serious as they are widespread. According to the National Institute on Alcohol Abuse and Alcoholism (2014), the following annual statistics apply to college students between the ages of 17 to 24.

- About 1,825 dies from alcohol-related unintentional injuries
- More than 690,000 are assaulted by another student who has been drinking
- More than 97,000 are victims of alcohol-related sexual assault
- About 599,000 receive unintentional injuries while under the influence of alcohol
- About 25 % of students report academic consequences of their drinking, including missing class, falling behind and poor academic performance
- More than 150,000 develop an alcohol-related health problem
- Between 1.2 and 1.5 percent indicate that they tried to commit suicide within the past year due to drinking or drug use.

Many college students who are on their own for the first time, struggle with loneliness as they adjust to a new life away from family and childhood friends. When these feelings deepen, depression can set in. Some college students who drink are just looking for a way to meet people and fit in, while others try drinking as a way to stay off from underlying problems. Excessive drinking will only worsen these feelings, and can lead to cyclical drinking behaviour.

Other reasons college students turn to alcohol include:

- Anxiety
- Stress
- Insecurity
- Desire to fit in
- Relationship problems

Teenage start consuming alcohol and drugs for recreational, experimentation, abuse and dependence. Repeated and regular recreational use may be a mask to cover up the problems like depression, anxiety, lack of positive social skills etc. Family-based prevention programs can be encouraged, as it will strengthen the family bonding and relationships. Awareness and Practice should be given in developing, creating, discussing, and enforcing family policies on substance abuse. Training in drug education and peer group motivation can also treated as effective prevention method in adolescence.

HIV/ AIDS Related Knowledge Question(s): -

Question 36: Can people get HIV infection or AIDS from mosquito bites and by touches?

Question 37: Will people get infection of HIV by having sexual intercourse through blood transfusion?

Question 38: Will people get infection of HIV by using common syringes of medical injection?

Rationale

These questions assess the knowledge and concept of HIV and its transmission and whether college students have been educated regarding the disease.

More than 60 million people have been infected with HIV (UNAIDS, 2002) from the beginning of the epidemic. India has the third largest HIV epidemic in the world. 88,000 people in India were newly infected with HIV in 2017 out of which the majority were men, who accounted for 50,000 new infections, 34,000 new infections among women and around 3,700 among children (aged 0-14 years). 79% of people living with HIV were aware of their status in2017, of whom 56% were on antiretroviral treatment (ART). The proportion of people on ART who are virally suppressed is not reported. In 2017, HIV prevalence among adults (aged 15-49) was an estimation of 0.2%. This figure is small compared to the most other middle-income countries but because of India's huge population (1.3 billion people) this equates to 2.1 million people living with HIV.

The world's sixth biggest cause of death is HIV/AIDS, and was responsible for 2.0 million deaths in 2004. Increasing access to HIV treatment and changing patterns of sexual behaviour made a sudden decrease in deaths affected by HIV. The virus continues to spread with alarming and increasing speed, although global commitment to control the HIV/AIDS pandemic has increased significantly in recent years. In 2005, close to 5 million new HIV infections and 3 million AIDS deaths occurred, more of both than in any previous year. In India 86% of new HIV infections in the year 2017/2018 is driven by sexual transmission. The three states with the highest HIV prevalence are Manipur, Mizoram and Nagaland. Sub-Saharan Africa remains most affected regions by HIV/AIDS; however, the virus is now spreading rapidly in Asia and parts of Eastern Europe.

An institution should provide proper health education and opportunities for extracurricular activities to develop the awareness and knowledge through which they can avoid or reduce sexual risk behaviours. Moreover, that the colleges should have a safe and respectful environment for the HIV infected staff and students.

Attitude towards Physical Activity Question(s): -

Question 39: During a usual week, on how many days are you physically active for a total of at least 60 minute per day?

Question 40: 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?

Question 41: How many days did you walk or ride a bicycle to and from college in the past one week?

Question 42: How often did your parents or guardian understand your problems and worries for the past 30 days?

Question 43: How often did your parents or guardian really know what you were doing with your free time for the past 30 days?

Question 44: How many sports teams did you play during the past 12 months?

Question 45: This college year have you been taught in any of your classes the benefit of physical activity?

Question 46: How many days did you do exercise such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the past one week?

Rationale

The questions in this part measures the student's participation in physical activity, Physical Education classes, sports, games, watching television and sedentary leisure behaviour and travel to college.

Physical Education has traditionally been considered as an essential part of educational curriculum to promote general health, cognitive development, motor skills and social behaviour (Bailey, 2009). The philosophy "Healthy Body and Healthy Mind" was the motive behind the inclusion of Physical Education in the curriculum. Physical Education is the systematic education of physical activity to develop a man's physical, mental, emotional and social competency through an active medium. Physical activity is defined as any bodily movement produced by voluntary body muscles that require energy expenditure. The term "Physical activity" should not be confused with "exercise". Exercise is a physical activity that is planned, structured and repetitive for a certain purpose (WHO, 2013).

One of the primary goals of Physical Education is to promote positive attitudes that encourage life time physical activity. It is evident that students who show more positive attitudes towards physical activity are more active in other activities. A positive attitude towards exercise may be the primary determinant of a physically active lifestyle. 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". Thus, if a person has a positive attitude toward physical fitness, behaviour should reflect this attitude (Gill, 1986).

The college student's especially professional students can improve the academic performance in spite of tight timings, overloaded curriculum and variations in the gender, nationalities and study materials through physical

activity. So it is recommended that physical activity for this age group should be encouraged by the university/college administration by promoting physical activity sessions, sports competitions and providing more sports facilities and free timings to motivate students for more participation (Mohammed Abou Elmagd, 2015).

3.2. Statistical Analysis

Percent analysis was done from the data collected from the developed questionnaire.

CHAPTER IV

ANALYSIS OF DATA AND RESULTS OF THE STUDY

The statistical analysis of the data collected on Health- risk behaviour and attitude towards physical activity among engineering students in Kerala state is presented in eight sub dimensions: Dietary behaviour and overweight, Hygienic behaviour, Violence related behaviour, Mental health, Tobacco use, Alcohol and other drug use, HIV/AIDS related knowledge and Attitude towards physical activity. Microsoft ACCESS© was used to code the data. The category wise response to each question was drawn using structured query (SQL). The collected data were analysed using SPSS Version.20 software (Intel Corp 2011).

Various descriptive profiles like mean, median, mode, standard deviation, variance, skewness, standard error of skewness, kurtosis, standard error of Kurtosis, range minimum, maximum 25^{th} percentile, 50^{th} percentile 75^{th} percentile of two genders (male and female), descriptive profiles for three college types (Government, aided and self financing), descriptive profiles for two environments (urban and rural) and descriptive profiles for three department types (Electronics, Mechanical and Computer Science) were statistically analyzed on all questions including demographic factors like age, gender, year which they are studying, category of colleges, and height and weight

The chi-square test for independence, also called as Pearson's chi-square test or the chi-square test of association, was done to discover if there is relationship between two categorical variables for which the level of significance was at 0.05.

Descriptive Profile of Demographic Factors

The descriptive profiles of four demographic factors such as age, gender, height and weight of male and female students are presented in table 4.1, government, aided and self-financing engineering college students in table 4.2, of rural and urban Engineering students in table 4.3 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.4.

Table 4.1

The descriptive profiles on demographic factors of male and female engineering students

Descriptive		**Male**				**Female**			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	-	-	-	-	-	-	-	-
Mean		2.56	1.00	2.18	2.04	2.56	2.00	2.18	2.04
Std. Error of Mean		.036	0.000	.037	.026	.036	0.000	.037	.026
Median		3.00	1.00	2.00	2.00	3.00	2.00	2.00	2.00
Mode		4.00	1.00	1.00	3.00	4	2	1	3
Std. Deviation		1.13	0.00	1.16	0.82	1.13	.00	1.16	.82
Variance		1.29	0.00	1.35	0.68	1.29	-	1.35	.68
Skewness		-0.07	0.00	0.41	-0.07	-.07	-	.41	-.07
Std. Error of Skewness		0.08	0.08	0.08	0.08	.08	.08	.08	.08
Kurtosis		-1.39	0.00	-1.32	-1.52	-1.39	-	-1.32	-1.52
Std. Error of Kurtosis		0.15	0.15	0.15	0.15	.15	.15	.15	.15
Range		3	0	3	2	3	0	3	2
Minimum		1	1	1	1	1	2	1	1
Maximum		4	1	4	3	4	2	4	3
Percentiles	**25**	2.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00
	50	3.00	1.00	2.00	2.00	3.00	2.00	2.00	2.00
	75	4.00	1.00	3.00	3.00	4.00	2.00	3.00	3.00

Question number 1,2,3 & 4 given in Appendix II

Table 4.2

The descriptive profiles on demographic factors on government, aided and self-financing engineering students

Descriptive		Government				Aided				Un-Aided			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
N	**Valid**	680	680	680	680	640	640	640	640	680	680	680	680
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.59	1.50	2.12	2.12	2.50	1.50	2.13	1.94	2.59	1.50	2.29	2.06
Std. Error of Mean		.044	.019	.043	.035	.044	.020	.046	.033	.044	.019	.045	.028
Median		3.00	1.50	2.00	2.00	2.50	1.50	2.00	2.00	3.00	1.50	2.00	2.00
Mode		4	1a	1	3	1a	1a	1	1	4	1a	1	2
Std. Deviation		1.14	.50	1.13	.90	1.12	.50	1.17	.83	1.14	.50	1.18	.73
Variance		1.30	.25	1.28	.81	1.25	.25	1.36	.68	1.30	.25	1.39	.53
Skewness		-.10	.00	.50	-.23	.00	.00	.47	.12	-.10	.00	.28	-.09
Std. Error of Skewness		.09	.09	.09	.09	.10	.10	.10	.10	.09	.09	.09	.09
Kurtosis		-1.41	-2.01	-1.19	-1.73	-1.36	-2.01	-1.31	-1.53	-1.41	-2.01	-1.42	-1.10
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		3	1	3	2	3	1	3	2	3	1	3	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	2	4	3	4	2	4	3	4	2	4	3
Percentiles	**25**	2.00	1.00	1.00	1.00	1.25	1.00	1.00	1.00	2.00	1.00	1.00	2.00
	50	3.00	1.50	2.00	2.00	2.50	1.50	2.00	2.00	3.00	1.50	2.00	2.00
	75	4.00	2.00	3.00	3.00	3.75	2.00	3.00	3.00	4.00	2.00	3.00	3.00

Question number 1,2,3 & 4 given in Appendix II

Table 4.3

The descriptive profiles on demographic factors of Rural and Urban engineering students

Descriptive		Urban				Rural			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0
Mean		3.56	1.50	3.16	2.08	1.56	1.50	1.20	2.00
Std. Error of Mean		0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.03
Median		4.00	1.50	3.00	2.00	2.00	1.50	1.00	2.00
Mode		4	1a	4	2a	1a	1a	1	1a
Std. Deviation		.50	.50	.78	.80	.57	.50	.40	.85
Variance		.25	.25	.62	.63	.33	.25	.16	.72
Skewness		-.24	.00	-.29	-.14	.41	.00	1.50	.00
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		-1.95	-2.00	-1.32	-1.41	-.77	-2.00	.26	-1.61
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15
Range		1	1	2	2	2	1	1	2
Minimum		3	1	2	1	1	1	1	1
Maximum		4	2	4	3	3	2	2	3
Percentiles	**25**	3.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00
	50	4.00	1.50	3.00	2.00	2.00	1.50	1.00	2.00
	75	4.00	2.00	4.00	3.00	2.00	2.00	1.00	3.00

Question number 1,2,3 & 4 given in Appendix II

Table 4.4

The descriptive profiles on demographic factors of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics &Communication				Mechanical				Computer Science			
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
N	**Valid**	640	640	640	640	760	760	760	760	760	760	760	760
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.44	1.50	2.13	1.81	2.58	1.50	2.16	2.05	2.67	1.50	2.27	2.27
Std. Error of Mean		.042	.020	.042	.029	.043	.018	.043	.030	.046	.020	.051	.035
Median		2.50	1.50	2.00	2.00	3.00	1.50	2.00	2.00	3.00	1.50	2.00	3.00
Mode		3	1a	1	2	4	1a	1	3	4	1a	1	3
Std. Deviation		1.06	0.50	1.05	0.73	1.18	0.50	1.18	0.83	1.14	0.50	1.24	0.85
Variance		1.12	0.25	1.11	0.53	1.40	0.25	1.40	0.68	1.29	0.25	1.53	0.73
Skewness		0.01	0.00	0.39	0.30	-0.09	0.00	0.46	-0.10	-0.14	0.00	0.33	-0.54
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	.100	.100	.100	.100
Kurtosis		-1.23	-2.01	-1.14	-1.07	-1.50	-2.01	-1.33	-1.53	-1.41	-2.01	-1.52	-1.42
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	.199	.199	.199	.199
Range		3	1	3	2	3	1	3	2	3	1	3	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	2	4	3	4	2	4	3	4	2	4	3
Percentiles	**25**	1.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
	50	2.50	1.50	2.00	2.00	3.00	1.50	2.00	2.00	3.00	1.50	2.00	3.00
	75	3.00	2.00	3.00	2.00	4.00	2.00	3.00	3.00	4.00	2.00	4.00	3.00

Question number 1,2,3 & 4 given in Appendix II

Descriptive Profile of Dietary Behaviour and Over Weight

The descriptive profiles of four Dietary Behaviour and Over Weight such as age, gender, height and weight of male and female students are presented in table 4.5, government, aided and self-financing engineering college students in table 4.6, of rural and urban Engineering students in table 4.7 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.8.

Table 4.5

The descriptive profiles on Dietary behaviour and over weight of male and female engineering students

Descriptive		**Male**				**Female**			
		Q5	**Q6**	**Q7**	**Q8**	**Q5**	**Q6**	**Q7**	**Q8**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0
Mean		21.98	1.84	2.14	2.94	20.81	1.60	2.50	2.90
Std. Error of Mean		00.06	.038	.028	.034	0.11	.025	.035	.036
Median		21.45	1.00	2.00	3.00	20.32	1.00	2.00	3.00
Mode		20.96	1.00	2.00	2.00	20.83	1	2	2[a]
Std. Deviation		1.80	1.21	0.90	1.09	3.47	.80	1.12	1.14
Variance		3.24	1.46	0.80	1.18	12.07	.64	1.25	1.29
Skewness		3.09	1.34	0.73	0.12	2.82	.85	1.07	.20
Std. Error of Skewness		0.08	0.08	0.08	0.08	.08	.08	.08	.08
Kurtosis		10.31	0.69	-0.07	-0.75	7.85	-.92	.18	-.75
Std. Error of Kurtosis		0.15	0.15	0.15	0.15	.15	.15	.15	.15
Range		11.25	4	3	4	17.79	2	4	4
Minimum		20.28	1	1	1	17.91	1	1	1
Maximum		31.53	5	4	5	35.70	3	5	5
Percentiles	**25**	21.01	1.00	2.00	2.00	18.73	1.00	2.00	2.00
	50	21.45	1.00	2.00	3.00	20.32	1.00	2.00	3.00
	75	22.15	2.00	2.00	4.00	21.48	2.00	3.00	4.00

Question number 4,6,7& 8 given in Appendix II

Table 4.6

The descriptive profiles on Dietary behavior and over weight of government, aided and self-financing engineering students

Descriptive		Government				Aided				Un-Aided			
N		680	680	680	680	640	640	640	640	680	680	680	680
		0	0	0	0	0	0	0	0	0	0	0	0
		680	680	680	680	640	640	640	640	21.16	1.74	2.32	3.06
Mean		21.41	1.74	2.15	.044	21.64	1.69	2.50	2.84	0.10	.040	.037	.043
Std. Error of Mean		0.11	.040	.037	3.00	0.12	.040	.044	.042	20.96	1.00	2.00	3.00
Median		21.11	1.00	2.00	2a	21.11	1.00	2.00	3.00	20.96	1	2	2a
Mode		22.49	1	2	1.14	20.83a	1	2	2a	2.51	1.04	.96	1.11
Std. Deviation		2.89	1.04	.97	1.30	3.05	1.01	1.12	1.06	6.31	1.08	.93	1.23
Variance		8.34	1.08	.95	.17	9.32	1.03	1.25	1.13	2.98	1.34	1.30	.14
Skewness		2.50	1.34	1.62	.09	2.55	1.56	.40	.16	.09	.09	.09	.09
Std. Error of Skewness		.09	.09	.09	-.77	.10	.10	.10	.10	12.37	1.10	1.56	-.83
Kurtosis		7.69	1.10	2.48	.19	7.41	1.91	-.88	-.67	.19	.19	.19	.19
Std. Error of Kurtosis		.19	.19	.19	4	.19	.19	.19	.19	17.79	4	4	4
Range		17.79	4	4	1	17.69	4	4	4	17.91	1	1	1
Minimum		17.91	1	1	5	17.91	1	1	1	35.70	5	5	5
Maximum		35.70	5	5	2.85	35.60	5	5	5	21.16	1.74	2.32	3.06
Percentiles	25	20.28	1.00	2.00	2.00	20.32	1.00	2.00	2.00	20.03	1.00	2.00	2.00
	50	21.11	1.00	2.00	3.00	21.11	1.00	2.00	3.00	20.96	1.00	2.00	3.00
	75	21.80	2.00	2.00	4.00	21.80	2.00	3.75	4.00	21.50	2.00	3.00	4.00

Question number 4,6,7& 8 given in Appendix II

Table 4.7

The descriptive profiles on Dietary behavior and over weight of Urban and Rural engineering students

Descriptive		Urban				Rural			
		Q5	**Q6**	**Q7**	**Q8**	**Q5**	**Q6**	**Q7**	**Q8**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0
Mean		21.36	1.80	2.38	3.02	21.44	1.64	2.26	2.82
Std. Error of Mean		0.09	0.03	0.03	0.03	0.09	0.03	0.03	0.04
Median		21.01	1.00	2.00	3.00	21.01	1.00	2.00	3.00
Mode		20.03[a]	1	2	3	20.96[a]	1	2	2
Std. Deviation		2.96	1.10	1.08	1.10	2.69	.95	.98	1.11
Variance		8.74	1.20	1.16	1.22	7.26	.91	.95	1.23
Skewness		2.71	1.32	.94	.05	2.61	1.46	1.14	.27
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		8.85	.96	.20	-.73	8.65	1.63	.99	-.71
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15
Range		17.79	4	4	4	17.69	4	4	4
Minimum		17.91	1	1	1	17.91	1	1	1
Maximum		35.70	5	5	5	35.60	5	5	5
	25	20.03	1.00	2.00	2.00	20.32	1.00	2.00	2.00
Percentiles	**50**	21.01	1.00	2.00	3.00	21.01	1.00	2.00	3.00
	75	21.53	2.00	3.00	4.00	21.80	2.00	2.00	4.00

Question number 4,6,7& 8 given in Appendix II

Table 4.8

The descriptive profiles on Dietary behavior and over weight of Electronics and Communication, Mechanical and Computer Science branch

Descriptive		Electronics &Communication				Mechanical				Computer Science			
		Q5	**Q6**	**Q7**	**Q8**	**Q5**	**Q6**	**Q7**	**Q8**	**Q5**	**Q6**	**Q7**	**Q8**
N	**Valid**	640	640	640	640	760	760	760	760	600	600	600	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		21.6	1.59	2.22	2.72	21.4	1.76	2.45	3.00	21.11	1.80	2.27	3.03
Std. Error of Mean		0.1	.037	.035	.043	0.1	.036	.041	.042	0.11	.048	.041	.043
Median		21.0	1.00	2.00	3.00	21.1	1.00	2.00	3.00	21.01	1.00	2.00	3.00
Mode		20.96	1	2	2a	20.03	1	2	3	21.80	1	2	2
Std. Deviation		2.96	0.93	0.89	1.10	2.71	0.99	1.14	1.15	2.81	1.17	1.00	1.05
Variance		8.77	0.87	0.80	1.20	7.35	0.97	1.30	1.32	7.87	1.36	1.00	1.10
Skewness		2.62	1.82	1.14	0.00	2.72	1.15	0.88	0.21	2.71	1.28	1.06	0.28
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	.100	.100	.100	.100
Kurtosis		7.80	3.41	1.61	-0.95	9.53	0.87	-0.13	-0.78	9.54	0.41	0.56	-0.80
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	.199	.199	.199	.199
Range		17.69	4	4	4	17.79	4	4	4	17.69	4	4	4
Minimum		17.91	1	1	1	17.91	1	1	1	17.91	1	1	1
Maximum		35.60	5	5	5	35.70	5	5	5	35.60	5	5	5
Percentiles	**25**	20.4	1.00	2.00	2.00	20.32	1.00	2.00	2.00	18.99	1.00	2.00	2.00
	50	21.0	1.00	2.00	3.00	21.11	1.00	2.00	3.00	21.01	1.00	2.00	3.00
	75	22.1	2.00	2.75	4.00	21.50	3.00	3.00	4.00	21.80	2.00	2.00	4.00

Question number 4,6,7& 8 given in Appendix II

CHI- SQUARE ANALYSIS OF DIETARY BEHAVIOR AND OVERWEIGHT

Table 4.9

Analysis on the question "During the past 30 days, how often had you felt hungry because of not having enough food at home?" among urban and rural area students.

		Never	Rarely	Some-times	Most of the time	Always	Total	Chi-square & p value
Urban	**Count**	621	182	159	18	20	1000	Chi-square=12.38 p=0.014
	Expected Count	593.0	190.0	159.0	29.5	29.0	1000.0	
	% of Total	31.05%	9.1%	7.95%	0.9%	1.0%	50.0%	
Rural	**Count**	564	198	159	41	38	1000	
	Expected Count	593.0	190.0	159.0	29.5	29.0	1000.0	
	% of Total	28.2%	9.9%	7.95%	2.05%	1.9%	50.0%	
Total	**Count**	1185	380	315	59	58	2000	
	Expected Count	1185.0	380.0	315.0	59.0	58.0	2000.0	
	% of Total	59.25%	19.0%	15.75%	2.95%	2.9%	100.0%	

Table 4.9 shows the variation among the students of urban and rural areas in the hungry index because of lack of availability of food at home. From the results it is clear that, there is significant variation among the students of urban and rural areas. 31.05% of the students from urban areas and 28.2 % of students from rural areas reported that they never felt hungry because of the lack of availability of food at home. Whereas 1.9 % of the subjects of rural areas felt more hunger than the students of urban areas (1%), as they reported that they always felt hungry. Only 0.9% (N=18) of urban students felt hungry most of the time when compared with the students of rural areas (2.05%) while, some subjects rarely felt hungry and there exist a slight variation in the same among the students of urban and rural areas and the students of rural areas shows a slight increase in the hunger rating (9.9%) than the students of urban areas (9.1%). Although 84.1 % of the population showed variations in the hunger rating, 15.75% (N=159) doesn't show any significant difference in the hunger rating because of the lack of availability of food at home, they reported that they felt hungry sometimes.

The value of Chi-Square obtained is 12.38, which is significant at 0.05 level as the p -value obtained is 0.014. This means that, there is significant association between geographies and response; that is, students of both urban and rural areas have not equally felt hungry because of not having enough food at home. Yet, lack of adequate food is more prevalent among the students of rural areas than that of urban areas.The graphical representation to the responses during the past 30 days, how often had you felt hungry because of not having enough food at home among urban and rural area students are presented in Figure 4.1.

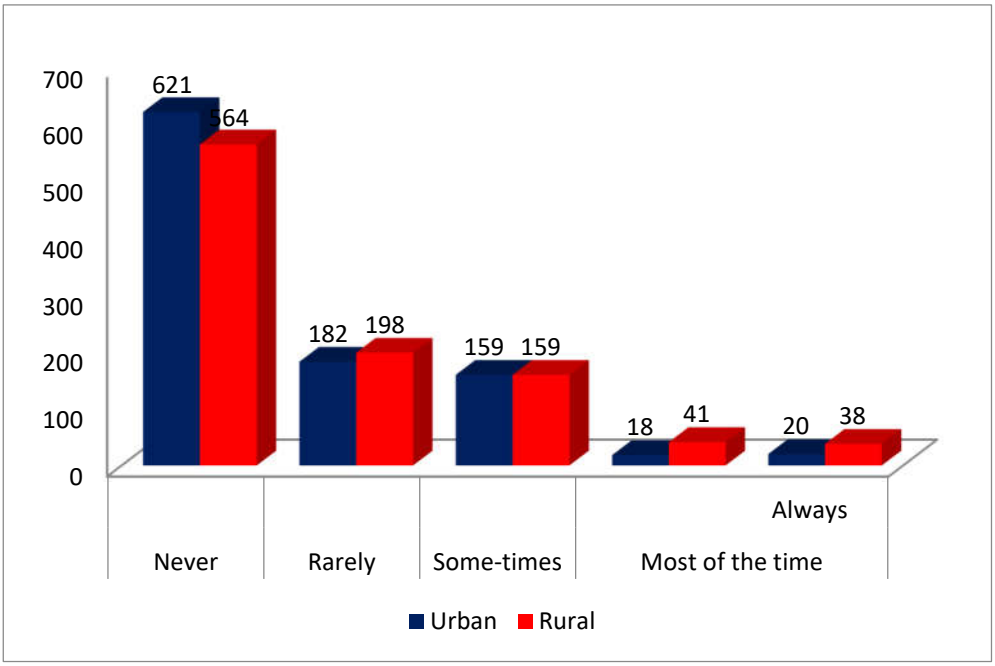

Figure 4.1: *During the past 30 days, how often had you felt hungry because of not having enough food at home among urban and rural area students.*

Table 4.10

Analysis on the question "During the past 30 days, how often had you felt hungry because of not having enough food at home?" among male and female students

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & p value
Male	**Count**	582	165	134	58	61	1000	Chi-square=65.34 p= 0.000
	Expected Count	597.0	181.5	161.5	30.0	30.5	1000.0	
	% Total	29.1%	8.25%	6.7%	2.9%	3.05%	50.0%	
Female	**Count**	611	198	189	2	0	1000	
	Expected Count	597.0	181.5	161.5	30.0	30.0	1000.0	
	% Total	30.55%	9.9%	9.45%	.0.1%	.0%	50.0%	
Total	**Count**	1193	363	323	60	61	2000	
	Expected Count	1194.0	363.0	323.0	60.0	61.0	2000.0	
	% Total	59.65%	18.15%	16.15%	3.0%	2.05%	100.0%	

As shown in Table 4.10, 29.1% male and 30.55% female never felt hungry because of not having enough food at home, 8.25% male and 9.9% female rarely felt, 6.7% male and 9.45% female sometimes felt, 2.9% male most of the time and 3.05% female always felt hungry.

The obtained Chi-square for this group was 65.34, which was significant at 0.05 level, as obtained p-value was 0.000 which was much lesser than 0.05 level. This do shows that, there was a significant association between gender and their response on the question of "During the past 30 days, how often had you felt hungry because of not having enough food at home? "It was noted that the response pattern of the male and female on this question "During the past 30 days, how often had you felt hungry because of not having enough food at home?" were different. Male was disproportionately associated with the response of most of the time and always, female was disproportionately associated with the response of never, rarely and sometimes.

The graphical representation to the responses during the past 30 days, how often had you felt hungry because of not having enough food at home among male and female students are presented in Figure 4.2.

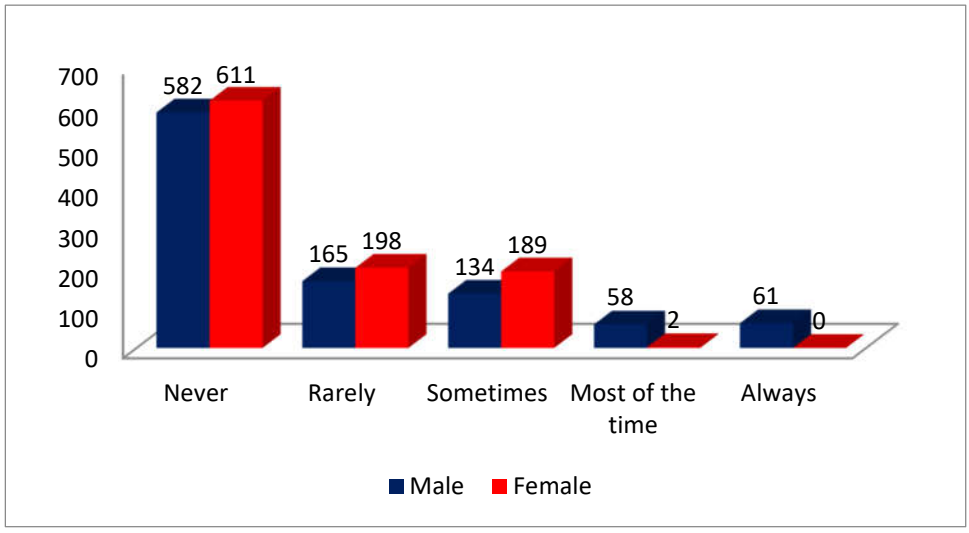

Figure 4.2: *During the past 30 days, how often had you felt hungry because of not having enough food at home among male and female area students.*

Table 4.11

Analysis on the question "During the past 30 days, how often had you felt hungry because of not having enough food at home?" among Government, aided and self-financing students

Category		Never	Rarely	Sometimes	Most of the times	Always	Total	Chi-square & p-value
Government	**Count**	421	137	106	7	9	680	
	Expected Count	405.96	135.32	108.8	12.58	17.34	680.0	
	% of Total	21.05%	6.85%	5.3%	0.35%	0.45%	34.0%	
Aided	**Count**	376	142	87	13	22	640	
	Expected Count	382.08	127.36	102.4	11.84	16.32	640.0	
	% of Total	18.8%	7.1%	4.35%	0.65%	1.1%	32.0%	
Self-financing	**Count**	397	119	127	17	20	680	Chi-square = 14.10, p = 0.0791
	Expected Count	405.96	135.32	108.8	12.58	17.34	680.0	
	% of Total	19.85%	5.95%	6.35%	0.85%	1.0%	34.0%	
Total	**Count**	1194	398	320	37	51	2000	
	Expected Count	1194.0	398.0	320.0	37.0	51.0	2000.0	
	% of Total	59.7%	19.9%	16.0%	1.85%	2.55%	100%	

Table 4.11 shows the distribution of hungry rating among the government, aided and self-financing engineering students because of lack of availability of food at home. As shown in table, the value of Chi-square is 14.10, which is not significant at 0.05 level as the p-value obtained is 0.0791. Hence there is no significant variations in the hungry rating based on the type of institute the subjects were studying.

The graphical representation to the responses during the past 30 days, how often had you felt hungry because of not having enough food at home among government, aided and self-financing students are presented in Figure 4.3.

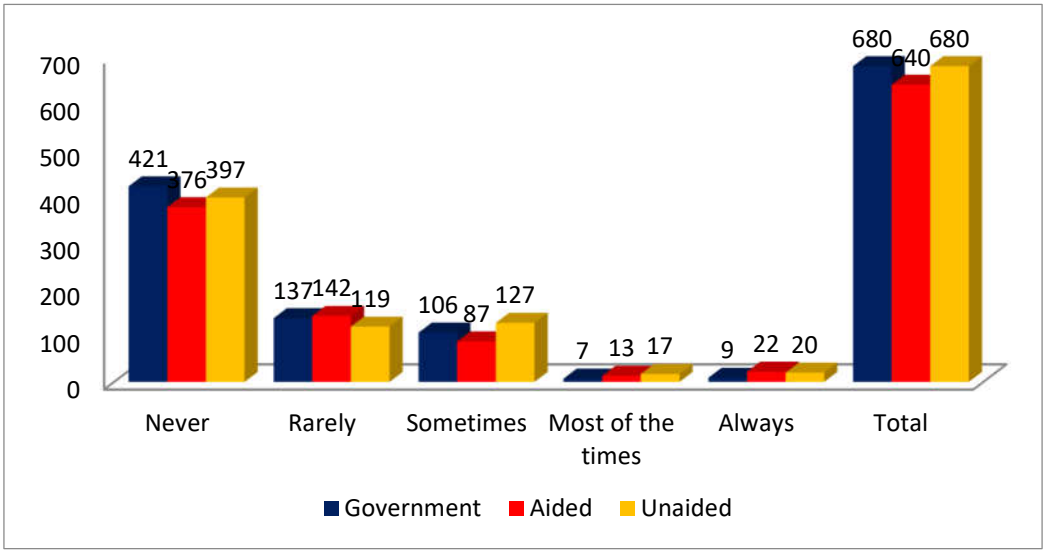

Figure 4.3: *During the past 30 days, how often had you felt hungry because of not having enough food at home among government, aided and self-financing students.*

Table 4.12

Analysis on the question "How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among urban and rural area students

		Rarely	1 time per day	2 times per day	4 times per day	5 or more times per day	Total	Chi-square & p value
Urban	**Count**	197	567	101	97	38	1000	Chi-square= 63.03 p=0.000
	Expected Count	205.0	582.5	106.0	145.5	61.0	1000.0	
	% of Total	9.85%	28.35%	5.05%	4.85%	1.9%	50.0%	
Rural	**Count**	213	398	111	194	84	1000	
	Expected Count	205.0	582.5	106.0	145.5	61.0	1000.0	
	% of Total	10.65%	19.9%	5.55%	9.7%	4.2%	50.0%	
Total	**Count**	410	965	212	291	122	2000	
	Expected Count	410.0	965.0	212.0	291.0	122.0	2000.0	
	% of Total	20.5%	48.25%	10.6%	14.55%	6.1%	100%	

Table 4.12 shows, statewide, 59.9% (N= 599) of students of urban area having fruits, banana, grapes, pineapple, papaya, orange or any other, 1 time per day, 15.8% (N=158) of students having eaten rarely per day, 10.3% (N=103) of students 2 times per day, 10.2% (N=102) of students 4 times per day, and 3.8% (N= 38) of students having fruits 5 times per day. In rural area only 6.2% (N=62) of students having fruits 5 times per day, 12.0% (N=120) of students 4 times per day, 11.8% (N=118) of students 2 times per day, 54.6% (n=546) students 1 time per day and 15.4% (N=154) students having rarely per day eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other. The value of Chi-Square obtained is 10.794, which is

significant at 0.05 levels of significance as the p-value obtained is 0.029. The result shows that, rural area students comparatively have taken more fruits than that of urban area students.

The graphical representation to the responses to how frequently did you eat fruits, such as ripe bananas, papaya, pineapple, grapes, orange any other among rural and urban area students are presented in figure .4.4.

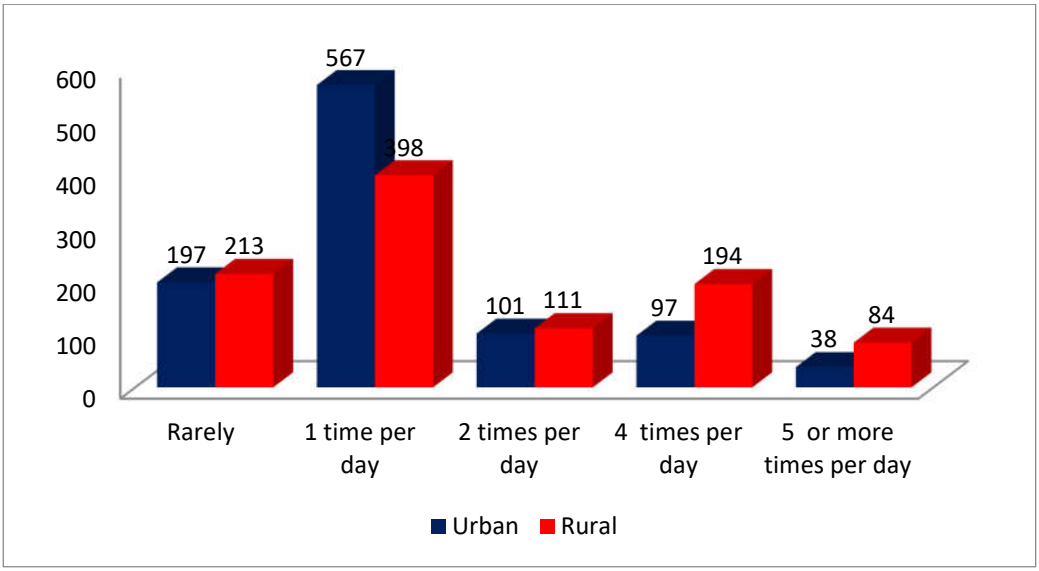

Figure 4.4: *"How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among urban and rural area students*

Table 4.13

Analysis on the question "How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among male and female students

		Rarely	1 time/day	2 times /day	3 times /day	4 or more times /day	Total	Chi-square &p value
Male	**Count**	226	549	117	108	0	1000	Chi-square=51.79 p= 0.000
	Expected Count	164.0	579.0	108.0	106.5	42.5	1000.0	
	% Total	11.3%	27.45%	5.85%	5.4%	.0%	50.0%	
Female	**Count**	102	609	99	105	85	1000	
	Expected Count	164.0	579.0	108.0	106.5	42.5	1000.0	
	% Total	5.1%	30.45%	4.95%	5.25%	4.25%	50.0%	
Total	**Count**	328	1158	216	213	85	2000	
	Expected Count	328.0	1158.0	216.0	213.0	85.0	2000.0	
	% Total	16.4%	57.9%	10.8%	10.65%	4.25%	100.0%	

As given in Table 4.13, 11.3% male and 5.1% female rarely ate fruits, 27.45% male and 30.45% female ate one time, 5.85% male and 4.95% female ate 2 times, 5.4% male and 5.25% female ate 3 times, 4.25% female ate fruits four or more times in a day. The value of Chi-square obtained for the group is 51.79 which were significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?". It was noted that the response pattern of the male and female on the issue "How many times per day did you usually eat

fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?"were different. Male was disproportionately associated with the responses of rarely, two, three times eating fruits in a day. Female was disproportionately associated with the responses of one time and four or more times eating fruits in a day.

The graphical representation to the responses to how frequently did you eat fruits, such as ripe bananas, papaya, pineapple, grapes, orange any other among male and female students are presented in figure .4.5.

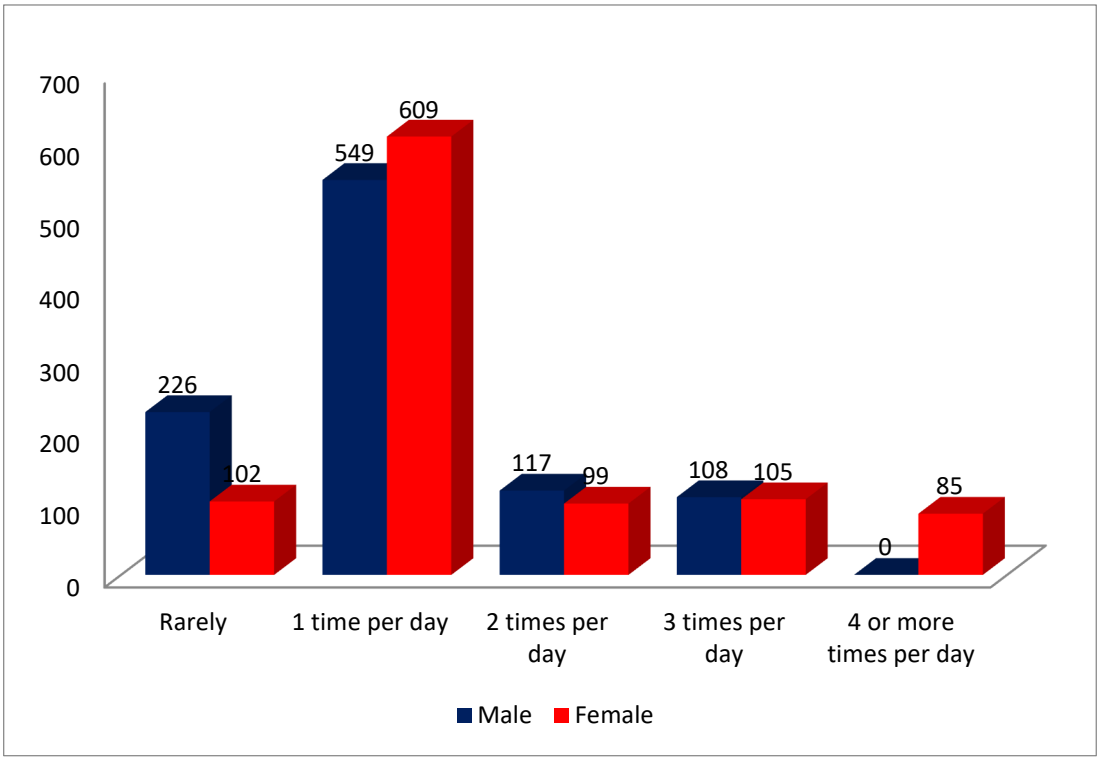

Figure 4.5: *"How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among male and female student*

Table 4.14

Analysis on the question "How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among government, aided and self-financing students

Category		Rarely	One time per day	Two Times per day	Three Times per day	4 or more times per day	Total	Chi-square & p value
Government	Count	121	467	18	48	26	680	Chi-square = 219.24, p = 0.000
	Expected Count	110.5	392.7	77.18	78.2	21.42	680.0	
	% of Total	6.05%	23.35%	0.9%	2.4%	1.3%	34.0%	
Aided	Count	116	265	113	142	4	640	
	Expected Count	104.0	369.6	72.64	73.6	20.16	640.0	
	% of Total	5.8%	13.25%	5.65%	7.1%	0.4%	32.0%	
Self-financing	Count	88	423	96	40	33	680	
	Expected Count	110.5	392.7	77.18	78.2	21.42	680.0	
	% of Total	4.4%	21.15%	4.8%	2.0%	1.65%	34.0%	
Total	Count	325	1155	227	230	63	2000	
	Expected Count	325.0	1155.0	227.0	230.0	63.0	2000.0	
	% of Total	16.25%	57.75%	11.35%	11.5%	3.15%	100.0%	

As shown in Table 4.14, 6.05% government, 5.8% aided, 4.4% self-financing students rarely ate fruits. 23.35% government, 13.25% aided, 21.15% self-financing students ate fruits one time per day. 0.9% government, 5.65% aided, 4.8% self-financing students ate fruits two times per day. 2.4% government, 7.1% aided, 2% self-financing students ate fruits three times per day. 1.3% government, 0.4% aided, 1.65% self financingstudents ate fruits

such as ripe bananas, papaya, pineapple, grapes, orange and other four times or more in a day. Chi-square value obtained for the group was 219.24 which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How frequently did you eat fruits, such as ripe bananas, papaya, Pineapple, grapes, orange or any other?". It was noted that the response pattern of the government, aided and self-financing college students on the issue "How frequently did you eat fruits, such as ripe bananas, Pappaya, Pineapple, grapes, orange or any other?" were different. Government college students were disproportionately associated with the response of rarely and one time per day. Aided college students were disproportionately associated with the response of rarely, two and three times per day. Self-financing college students were disproportionately associated with the response of rarely, one time and two times per day.

The graphical representation to the responses to how frequently did you eat fruits, such as ripe bananas, papaya, pineapple, grapes, orange any other among government, aided and self-financing students are presented in figure 4.6.

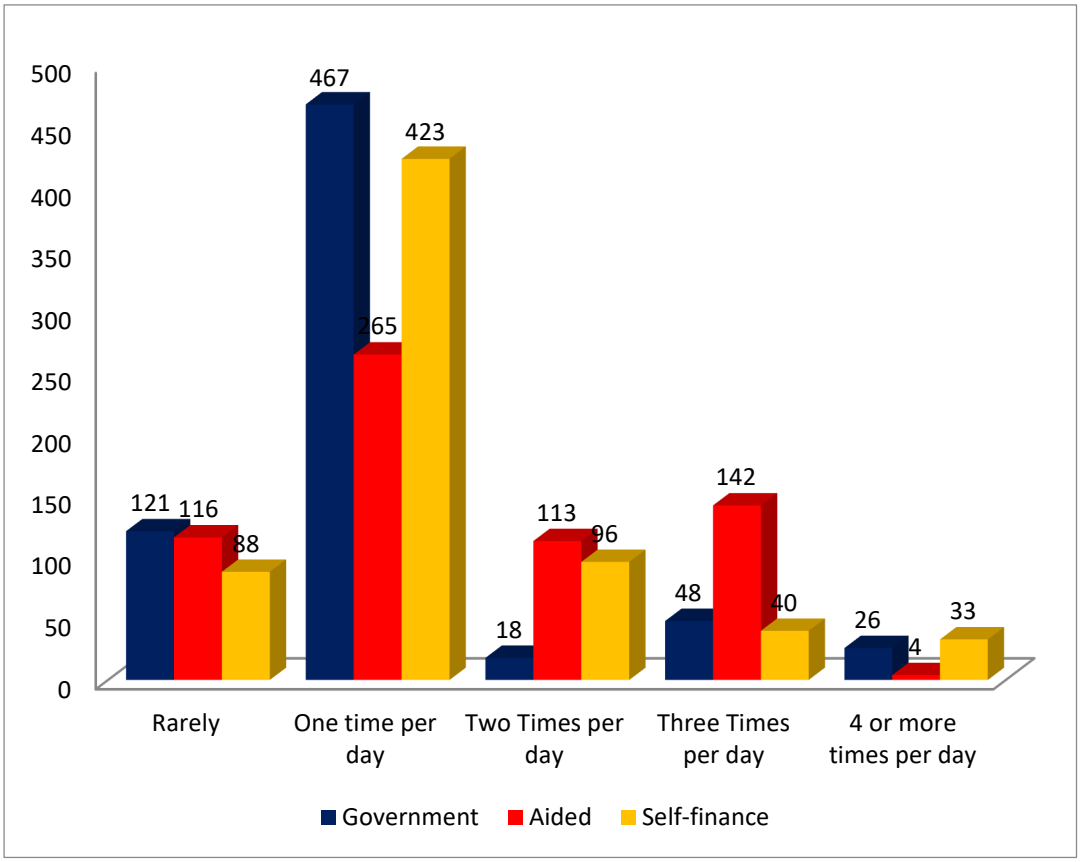

Figure 4.6:"*How many times per day did you usually eat fruits, such as ripe bananas, Papaya, Pineapple, grapes, orange or any other?" among government, aided and self-financing students*

Table 4.15

Analysis on the question " How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among urban and rural area students

		I did not eat vegetables	1 time per day	2 times per day	4 times per day	5 or more times per day	Total	Chi-square & p value
Urban	Count	102	338	281	198	81	1000	Chi-square= 17.61 p=0.001
	Expected Count	91.0	301.0	300.5	217.0	90.5	1000.0	
	% of Total	5.1%	16.9%	14.05 %	9.9%	4.05%	50.0%	
Rural	Count	80	264	320	236	100	1000	
	Expected Count	91.0	301.0	300.5	217.0	90.5	1000.0	
	% of Total	4.0%	13.2%	16.0%	11.8%	5.0%	50.0%	
Total	Count	182	602	601	434	181	2000	
	Expected Count	180.0	600.0	600.0	440.0	180.0	2000.0	
	% of Total	9.0%	30.0%	30.0%	22.0%	9.0%	100.0 %	

While making area wise comparison, it is found that 10.2% of urban students and 8.0% of rural students come under the category of the students who do not eaten vegetables per day. Area wise comparison of the frequency of vegetable consumption per day shows that 33.8% of urban students and 26.4% of rural students ate vegetables once in day.While making area wise comparison, it is found that 28.1% of urban students and 32.0% rural students ate vegetables 2 times per day. The table shows that 19.8% of urban students and 23.6% of rural students ate vegetables 4 times per day. Comparisons of the frequency of vegetable consumption per day of urban students are 8.1% and rural students are 10.0%,ate vegetables 5 or more times per day.The value of Chi-Square (X^2) obtained is 21.414, which is significant at 0.05 levels of

significance as the p-value obtained is 0.00. That means both urban and rural area students are not equally eaten vegetables per day.

The graphical representation to the responses to how many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, cabbage, ivy gourd, Drumstick, Brinjal, Tomato, Raw plantain or any others among rural and urban area students are presented in Figure 4.7.

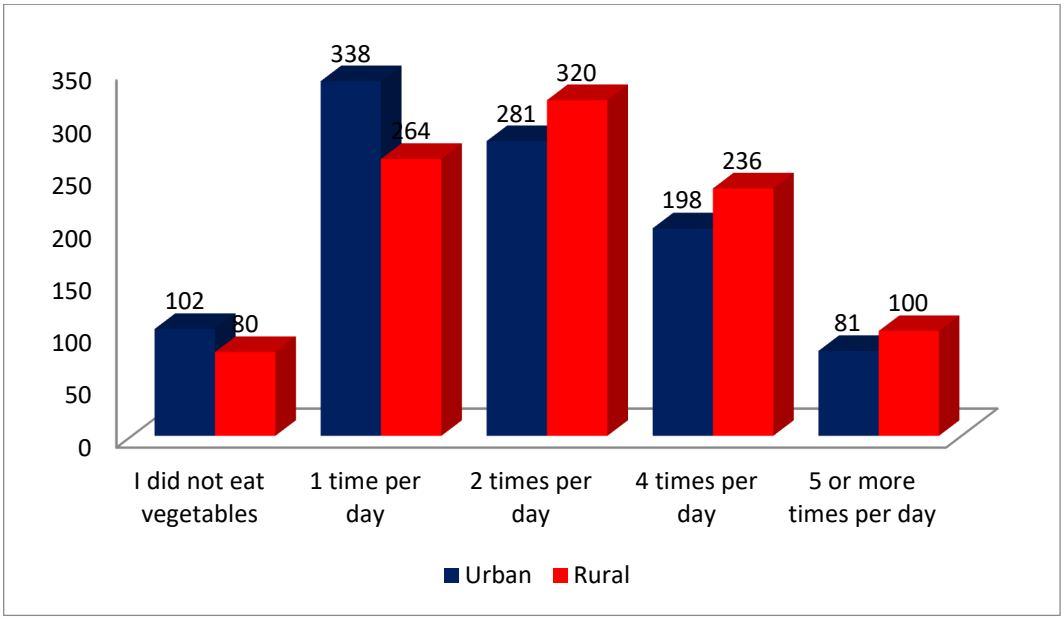

Figure 4.7 *How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among urban and rural area students*

Table 4.16
Analysis on the question " How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among male and female students

		did not eat	1 time per day	2 times per day	3 times per day	4 or more times per day	Total	Chi-square & P value
Male	**Count**	84	301	298	252	65	1000	
	Expected Count	92.5	306.0	298.5	234.5	68.5	1000.0	
	% Total	4.2%	15.05%	14.9%	12.6%	3.25%	50.0%	
Female	**Count**	101	311	299	217	72	1000	Chi-square=4.34
	Expected Count	92.5	306.0	298.5	234.5	68.5	1000.0	
	% Total	5.05%	15.55%	14.95%	10.85	3.25%	50.0%	P= 0.36
Total	**Count**	185	612	597	469	137	2000	
	Expected Count	185.0	612.0	597.0	469.0	137.0	2000.0	
	% Total	9.25%	30.6%	29.85%	23.45%	6.85%	100.0%	

As noted in Table 4.16, 4.2% male and 5.05% female didn't eat vegetables, 15.05% male and 15.55% female ate one time, 14.9% male and female ate two times, 12.6% male and 10.85% female ate three times, 3.25% male and female ate vegetables four or more times in a day. The obtained Chi square for this group was 4.34 which is not significant at 0.05 level of significance, as the p-value obtained is 0.36 that was greater than 0.05 level. Thus, it may be failed to reject the null hypothesis that there was no association between the gender and response. It may be concluded that there was not significant association between gender and their response on the question of "How many times per day did you usually eat vegetables, such as

ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?"

It was noted that the response pattern of the male and female on the issue "How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?"were not different.

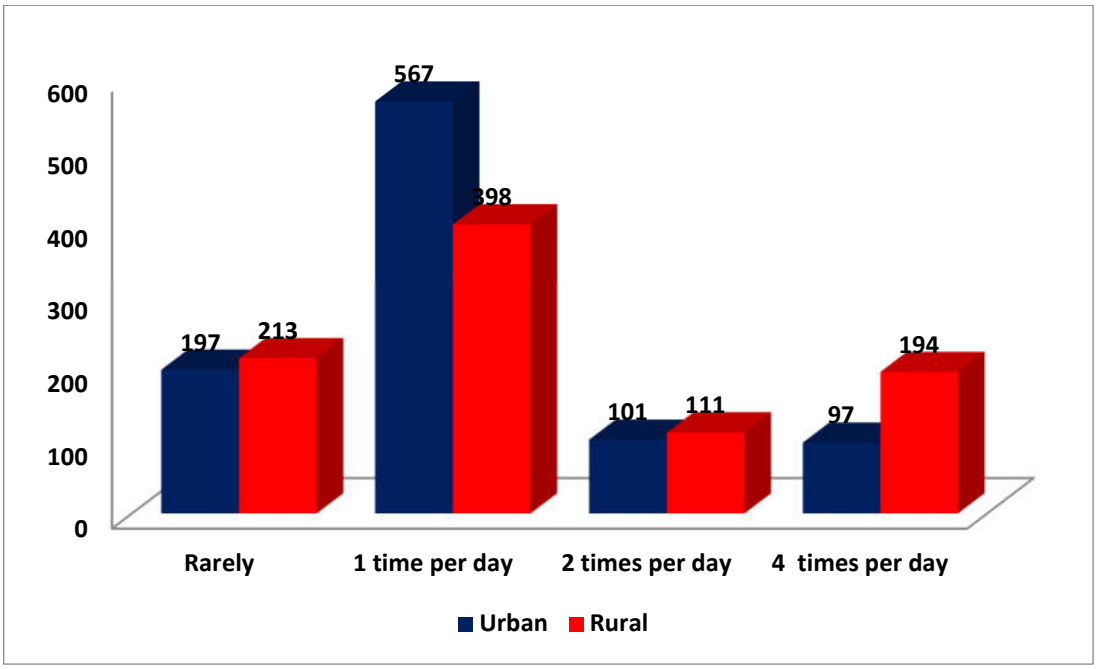

Figure 4.8 *How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among male and female students*

Table 4.17

Analysis on the question " How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among government, aided and self-financing students

Category		I didn't eat vegetable	One time per day	Two times per day	Three Times per day	4or more times per day	Total	Chi-square & p value
Government	Count	84	197	206	135	58	680	Chi-square = 18.77, p = 0.001
	Expected Count	66.3	207.06	207.06	148.92	50.66	680.0	
	% of Total	4.2%	0.95%	10.3%	6.75%	2.9%	34.0%	
Aided	Count	63	208	216	137	16	640	
	Expected Count	62.4	194.88	194.88	140.16	47.68	640.0	
	% of Total	3.15%	10.4%	10.8%	6.85%	0.8%	32.0%	
Self-financing	Count	48	204	187	166	75	680	
	Expected Count	66.3	207.06	207.06	148.92	50.66	680.0	
	% of Total	2.4%	10.2%	9.35%	8.3%	3.75%	34.0%	
Total	Count	195	609	609	438	149	2000	
	Expected Count	195.0	609.0	609.0	438.0	149.0	2000.0	
	% of Total	9.75%	30.45%	30.45%	21.9%	7.45%	100.0%	

As shown in Table 4.17, 4.2% government, 3.15%aided, and 2.4% self-finance students didn't eat vegetable. 0.95%government, 10.4%aided, 10.2% self-financing students ate vegetables once a day. 10.3%government, 10.8%aided, 9.35% self-financing students ate vegetables two times a day. 6.75%government, 6.85%aided, 8.3% self-financing students ate vegetables

three times a day. 2.9%government, 0.8%aided, 3.75%self-financing students ate vegetables four or more times a day.

The obtained Chi-square for this group was 18.77 which were significant at 0.05 level of significance, as the p-value 0.001 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How often per day do you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?"

The graphical representation to the responses to how many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, cabbage, ivy gourd, Drumstick, Brinjal, Tomato, Raw plantain or any others among male and female students are presented in Figure 4.8.

It was noted that the response pattern of the government, aided and self-financing college students on the issue "How often per day do you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" were different. Government college students were disproportionately associated with the response of didn't eat vegetable. Aided college students were disproportionately associated with the response of didn't eat, once a day and two times a day. Self-financing college students were disproportionately associated with the response of three times and four or more times a day.

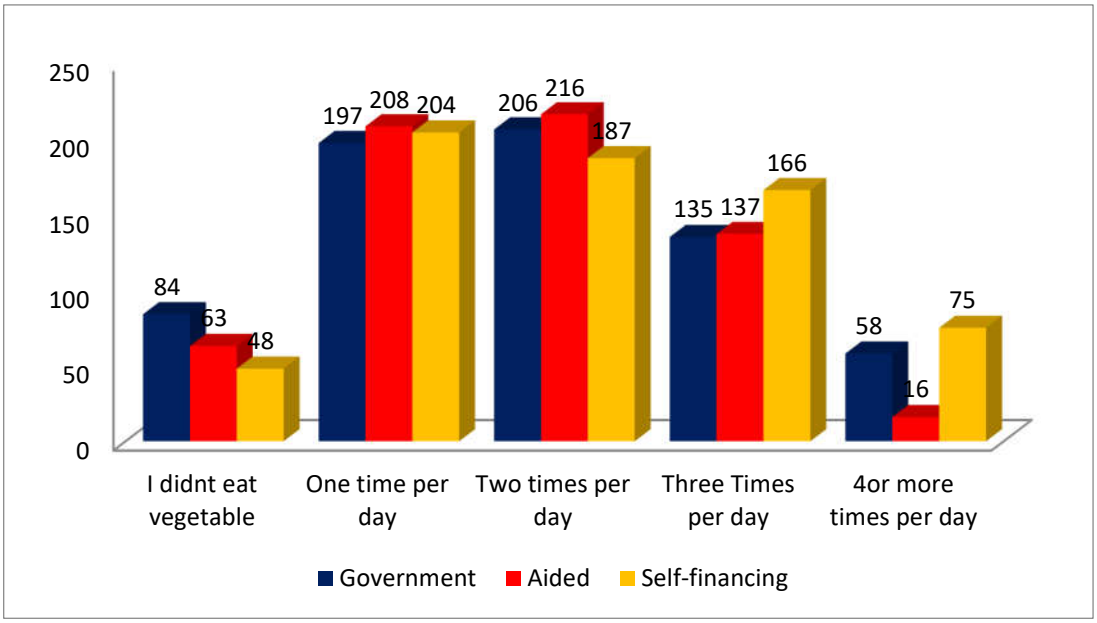

Figure 4.9: *How many times per day did you usually eat vegetables, such as ladies finger, Pumpkin, Drumstick, Brinjal, Tomato, raw Plantain or any others?" among government, aided and self-financing students*

DESCRIPTIVE PROFILES OF HYGIENIC BEHAVIOUR

The descriptive profiles of four Hygienic Behaviour such as age, gender, height and weight of male and female students are presented in table 4.18, government, aided and self-financing engineering college students in table 4.19, of rural and urban Engineering students in table 4.20 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.21.

Table 4.18

The descriptive profiles on Hygienic Behavior of male and female engineering students

Descriptive		Male				Female			
		Q9	**Q10**	**Q11**	**12**	**Q9**	**Q10**	**Q11**	**Q12**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0
Mean		3.58	1.51	1.50	3.00	3.70	1.40	1.40	3.10
Std. Error of Mean		.029	.016	.016	.035	.028	.015	.015	.036
Median		4.00	2.00	1.00	3.00	4.00	1.00	1.00	3.00
Mode		4.00	2.00	1	3	4	1	1	3a
Std. Deviation		0.92	0.50	.50	1.10	.90	.49	.49	1.14
Variance		0.84	0.25	.25	1.20	.81	.24	.24	1.29
Skewness		-1.40	-0.04	.01	.00	-2.67	.41	.41	-.20
Std. Error of Skewness		0.08	0.08	.08	.08	.08	.08	.08	.08
Kurtosis		1.67	-2.00	-2.00	-.50	5.14	-1.84	-1.84	-.75
Std. Error of Kurtosis		0.15	0.15	.15	.15	.15	.15	.15	.15
Range		4	1	1	4	3	1	1	4
Minimum		1	1	1	1	1	1	1	1
Maximum		5	2	2	5	4	2	2	5
Percentiles	**25**	3.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00
	50	4.00	2.00	1.00	3.00	4.00	1.00	1.00	3.00
	75	4.00	2.00	2.00	4.00	4.00	2.00	2.00	4.00

Question number 9,10,11 & 12 given in Appendix II

Table 4.19

The descriptive profiles on Hygienic Behavior of government, aided and self-financing engineering students

Descriptive		Government				Aided				Un-Aided			
		Q9	Q10	Q11	Q12	Q9	Q10	Q11	Q12	Q9	Q10	Q11	Q12
N	**Valid**	680	680	680	680	640	640	640	640	680	680	680	680
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		3.62	1.46	1.43	3.00	3.69	1.41	1.42	3.06	3.62	1.49	1.49	3.09
Std. Error of Mean		.036	.019	.019	.045	.033	.019	.020	.045	.036	.019	.019	.040
Median		4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00
Mode		4	1	1	3	4	1	1	3	4	1	1	3
Std. Deviation		.94	.50	.50	1.16	.85	.49	.49	1.14	.94	.50	.50	1.04
Variance		.88	.25	.25	1.35	.72	.24	.24	1.31	.88	.25	.25	1.08
Skewness		-1.94	.17	.28	.00	-2.15	.35	.31	-.25	-1.94	.05	.04	-.02
Std. Error of Skewness		.09	.09	.09	.09	.10	.10	.10	.10	.09	.09	.09	.09
Kurtosis		2.77	-1.98	-1.93	-.71	4.16	-1.88	-1.91	-.66	2.77	-2.00	-2.00	-.59
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		4	1	1	4	4	1	1	4	4	1	1	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	2	2	5	5	2	2	5	5	2	2	5
	25	4.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00
Percentiles	**50**	4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00
	75	4.00	2.00	2.00	4.00	4.00	2.00	2.00	4.00	4.00	2.00	2.00	4.00

Question number 9,10,11 & 12 given in Appendix II

Table 4.20

The descriptive profiles on Hygienic Behavior of and Urban and Rural engineering students

Descriptive		Urban				Rural			
		Q9	Q10	Q11	Q12	Q9	Q10	Q11	Q12
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0
Mean		3.66	1.46	1.48	3.06	3.62	1.45	1.42	3.04
Std. Error of Mean		0.03	0.02	0.02	0.04	0.03	0.02	0.02	0.04
Median		4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00
Mode		4	1	1	3	4	1	1	3
Std. Deviation		.93	.50	.50	1.12	.89	.50	.49	1.11
Variance		.87	.25	.25	1.26	.80	.25	.24	1.24
Skewness		-1.97	.15	.10	-.12	-2.06	.21	.31	-.08
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		2.99	-1.98	-1.99	-.67	3.36	-1.96	-1.91	-.62
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15
Range		4	1	1	4	4	1	1	4
Minimum		1	1	1	1	1	1	1	1
Maximum		5	2	2	5	5	2	2	5
Percentiles	**25**	4.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00
	50	4.00	1.00	1.00	3.00	4.00	1.00	1.00	3.00
	75	4.00	2.00	2.00	4.00	4.00	2.00	2.00	4.00

Question number 9,10,11 & 12 given in Appendix II

Table 4.21

The descriptive profiles on Hygienic Behavior of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics &Communication				Mechanical				Computer Science			
		Q9	Q10	Q11	Q12	Q9	Q10	Q11	Q12	Q9	Q10	Q11	Q12
N	**Valid**	640	640	640	640	760	760	760	760	600	600	600	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		3.66	1.66	1.66	3.06	3.47	1.68	1.68	3.11	3.83	1.77	1.77	2.97
Std. Error of Mean		.035	.029	.029	.044	.036	.028	.028	.042	.032	.034	.034	.043
Median		4.00	1.50	1.50	3.00	4.00	1.50	1.50	3.00	4.00	1.50	1.50	3.00
Mode		4	1	1	3	4	1	1	2a	4	1	1	3
Std. Deviation		0.89	0.73	0.73	1.12	0.99	0.77	0.77	1.17	0.78	0.84	0.84	1.05
Variance		0.79	0.54	0.54	1.25	0.99	0.59	0.59	1.36	0.61	0.71	0.71	1.10
Skewness		-2.49	0.64	0.64	-0.26	-1.70	0.60	0.60	-0.01	-1.83	0.46	0.46	-0.11
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	.100	.100	.100	.100
Kurtosis		4.60	-0.90	-0.90	-0.46	1.39	-1.05	-1.05	-0.93	4.57	-1.44	-1.44	-0.45
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	.199	.199	.199	.199
Range		3	2	2	4	3	2	2	4	4	2	2	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	3	3	5	4	3	3	5	5	3	3	5
Percentiles	**25**	4.00	1.00	1.00	2.25	3.00	1.00	1.00	2.00	4.00	1.00	1.00	2.00
	50	4.00	1.50	1.50	3.00	4.00	1.50	1.50	3.00	4.00	1.50	1.50	3.00
	75	4.00	2.00	2.00	4.00	4.00	2.00	2.00	4.00	4.00	3.00	3.00	4.00

Question number 9,10,11 & 12 given in Appendix II

CHI- SQUARE ANALYSIS OF HYGIENIC BEHAVIOUR

Table 4.22

Analysis on the question "During the past 7 days, how did you usually wash your hands before eating?" among urban and rural area students

		I did not wash my hands before eating	In a dish of water used by others	In a dish of water used only by me	Under running water or tap	Some other way	Total	Chi-square & p value
Urban	**Count**	80	22	120	758	20	1000	Chi-square = 33.593 p=0.000
	Expected Count	80.0	32.5	90.0	767.5	30.0	1000.0	
	% of Total	4.0%	1.1%	6.0%	37.9%	1.0%	50.0%	
Rural	**Count**	80	43	60	777	40	1000	
	Expected Count	80.0	32.5	90.0	767.5	30.0	1000.0	
	% of Total	4.0%	2.15%	3.0%	38.85%	2.0%	50.0%	
Total	**Count**	160	65	180	1535	60	2000	
	Expected Count	160.0	65.0	180.0	1535.0	60.0	2000.0	
	% of Total	8.0%	3.25%	9.0%	76.75%	3.0%	100.0%	

The category wise analysis of the data shows that 8.0% (N=80) of urban engineering college students and 8.0% (N=80) of rural engineering college students do not wash their hands before eating. Area wise comparison of the frequency of hand washing before eating shows that 2.2% (N=22) of urban area students and 4.3% (N=43) rural area students wash in a dish of water used by others. While making area wise comparison it is found that, 12.0% (120) urban area students and 6.0% (N=60) of rural area students wash in a dish of water used by only by one. 75.8% (N=758) of urban area students and 77.7% (N=777) of rural area students usually wash their hands by using running water or tap. And 2.0% (N=20) of urban area students and 4.0% (N=40) of rural area students wash their hands for last 7 days by some other way. The value of Chi-Square obtained is 33.593, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Terrain and response; that is, both urban and rural.

The graphical representation to the responses to how did they usually wash their hands before eating among urban and rural area students are presented in Figure 4.10.

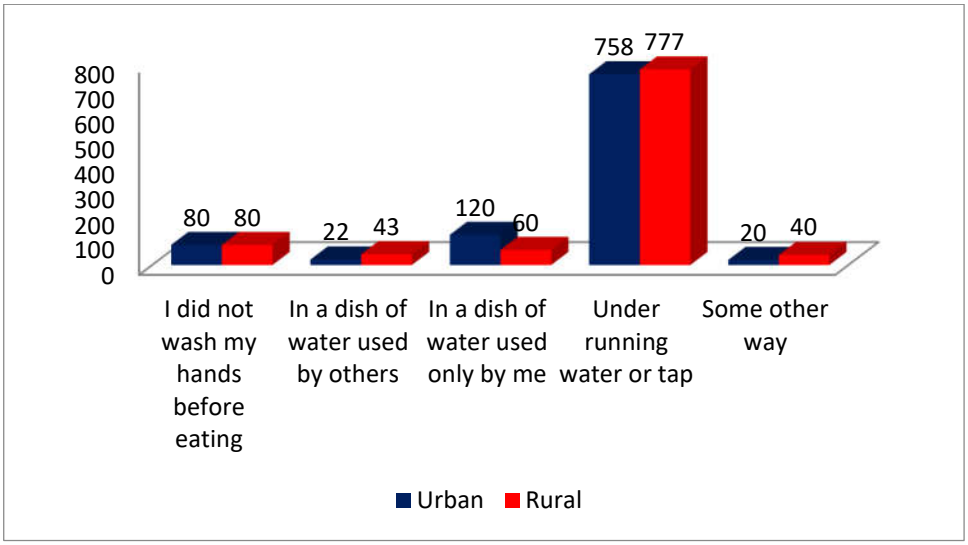

Figure 4.10 *"During the past 7 days, how did you usually wash your hands before eating?" among urban and rural area students*

Table 4.23

Analysis on the question "During the past 7 days, how did you usually wash your hands before eating?" among male and female students

		Did not wash	dish water used by others	dish water used by me	tap water	some other way	Total	Chi-square & P value
Male	**Count**	64	59	186	638	53	1000	Chi- square=297.71 P= 0.000
	Expected Count	83.0	29.5	93.0	768.0	26.5	1000.0	
	% Total	3.2%	2.95%	9.3%	31.9%	2.65%	50.0%	
Female	**Count**	102	0	0	898	0	1000	
	Expected Count	83.0	29.5	93.0	768.0	26.5	1000.0	
	% Total	5.1%	.0%	.0%	44.9%	.0%	50.0%	
Total	**Count**	166	59	186	1536	53	2000	
	Expected Count	166.0	59.0	186.0	1536.0	53.0	2000.0	
	% Total	8.3%	2.95%	9.3%	76.8%	2.65%	100.0%	

As shown in Table 4.26, 3.2% male and 5.1% female didn't wash hands before eating, 2.95% male used water used by others, 9.3% male used separate water, 31.9% male and 44.9% female washed with tap water, 2.65% male washed the hands before eating with some other way. The obtained Chi square value for the group was 297.71 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "During the past 7 days, how did you usually wash your hands before eating ?"It was noted that the response pattern of the male and female on the issue " During the past 7 days, how did you usually wash your hands before eating ?" were different. Male was disproportionately associated with the response of dishwater, separate water and some other way, female was disproportionately associated with the response of not washing hands and washing used by tap water.

The graphical representation to the responses to how did they usually wash their hands before eating among male and female students are presented in Figure 4.11.

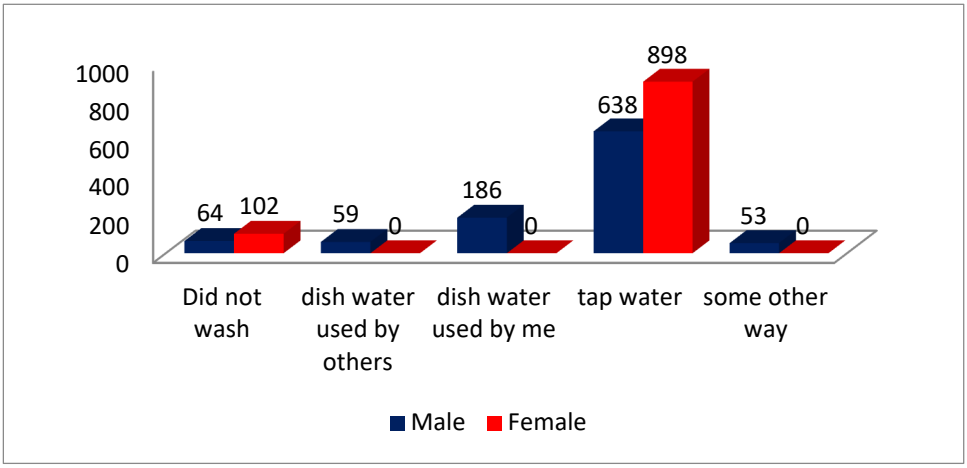

Figure 4.11: "During the past 7 days, how did you usually wash your hands before eating?" among male and female students

Table 4.24

Analysis on the question "During the past 7 days, how did you usually wash your hands before eating?" among government, aided and self-financing students

Category		I did not wash	In a dish of water used by others	In a dish or water used only by me	Under running water or tap	Some other way	Total	Chi-square & P value
	Count	57	23	61	523	16	680	
Government	**Expected Count**	55.08	20.74	65.62	525.64	12.92	680.0	
	% of Total	2.85%	1.15%	3.05%	26.15%	0.8%	34.0%	
	Count	41	18	65	499	17	640	
Aided	**Expected Count**	51.84	19.52	61.76	494.72	12.16	640.0	
	% of Total	2.05%	0.9%	3.25%	24.95%	0.85%	32.0%	Chi-square = 4.75, P = 0.783
	Count	64	20	67	524	5	680	
Self financing	**Expected Count**	55.08	20.74	65.62	525.64	12.92	680.0	
	% of Total	3.2%	1.0%	3.35%	26.2%	0.25%	34.0%	
	Count	162	61	193	1546	38	2000	
Total	**Expected Count**	162.0	61.0	193.0	1546.0	60.0	2000.0	
	% of Total	8.1%	3.05%	9.65%	77.3%	3.0%	100.0%	

As shown in Table 4.27, 2.85% of government, 2.05% of aided, and 3.2%of self-financing students didn't wash the hands before eating for the past seven days. 1.15%government, 0.9%aided, 1.0%self-financing students washed hands in a dish of water used by others. 3.05%government, 3.25%aided, 3.35%self-financing students washed hands in a dish water used by them only. 26.15%government, 24.95%aided, 26.2%self-financing students washed under running water or tap. 0.8% government, 0.85% aided, 0.25%self-financing students washed the hands In some other way. The obtained Chi square value for this group was 4.75 which were not significant at 0.05 level of significance, as the obtained p-value 0.783 that was greater than 0.05 level. Thus, it may not be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "How did you wash your hands before eating for the past seven days? "It was noted that the response pattern of the government, aided and self-financing college students on the issue "How did you wash your hands before eating for the past seven days?" were not different.

The graphical representation to the responses to how did they usually wash their hands before eating among government, aided and self-financing students are presented in Figure 4.12.

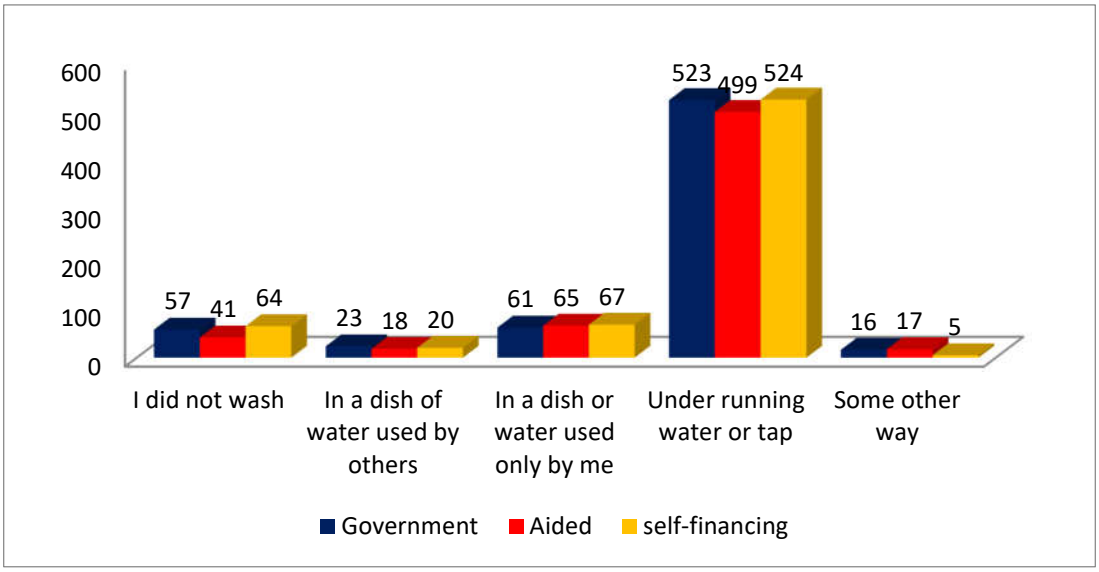

Figure 4.12**:** *"During the past 7 days, how did you usually wash your hands before eating?" among government, aided and self-financing students*

Table 4.25

Analysis on the question" Are the toilets or latrines safe at college?" among urban and rural area students

		Yes	No	There are No toilets or latrines in college	Total	Chi-square & p-value
Urban	**Count**	553	447	0	1000	Chi-square= 6.667, p= 0.036
	Expected Count	545.5	454.5	0.0	1000.0	
	% Total	27.65%	22.35%	0.0%	50.0%	
Rural	**Count**	538	462	0	1000	
	Expected Count	545.5	454.5	0.0	1000.0	
	% Total	26.9%	23.1%	0.0%	50.0%	
Total	**Count**	1091	909	0	2000	
	Expected Count	1091.0	909.0	0.0	2000.0	
	% Total	54.55%	45.45%	0.0%	100%	

The category wise analysis of the data shows that out of 2000 students from each category that is urban 553 students (55.3%) and rural 538 students (53.8%) says the toilets or latrines are safe at college. The study indicates that 447(44.7%) students from urban and 462(46.2%) students from rural (32.0% and 28.0%) say that the toilets or latrines are not safe at college. All the colleges have toilet or latrine facility in their institution. The analysis of study shows that the toilet or latrine facility of urban areas little bit better than rural areas.The obtained value of Chi-Square obtained was 6.667, which was significant at 0.05 levels of significance as the p-value obtained is 0.036. That means there was statistically significant association between Terrain and response; that is, both urban and rural.

The graphical representation to the responses to are the toilets or latrines safe at college among urban and rural area students are presented in Figure 4.13.

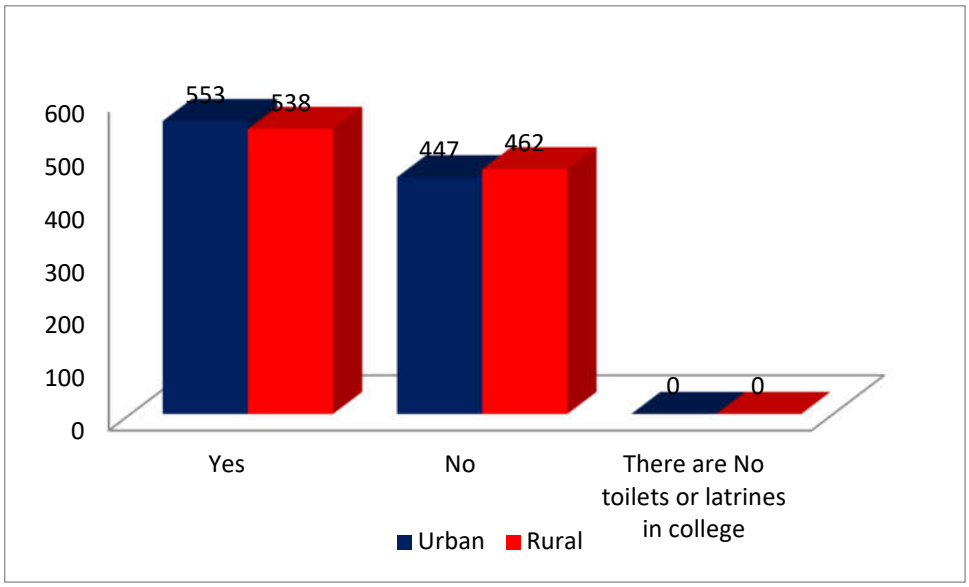

Figure 4.13 *"Are the toilets or latrines safe at college?" among urban and rural area students*

Table 4.26

Analysis on the question "Are the toilets or latrines safe at college?" among male and female students

		No toilet	Yes	No	Total	Chi-square & P value
Male	**Count**	1	621	378	1000	
	Expected Count	500.0	310.5	189.5	1000.0	
	% Total	0.05%	31.05%	18.9%	50.0%	
Female	**Count**	999	0	1	1000	Chi-square=1992.01
	Expected Count	500.0	310.5	189.5	1000.0	
	% Total	49.95%	.0%	0.05%	50.0%	
Total	**Count**	1000	621	379	2000	p= 0.000
	Expected Count	1000.0	600.0	400.0	2000.0	
	% Total	50.0%	31.05%	18.95%	100.0%	

As shown in Table 4.28,31.05% male expressed toilets at the college are safe and 18.9% said no. 49.95% female expressed that there was no toilet or latrines at the college. Chi-square obtained for this group was 1992.01 which were significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Are the toilets or latrines safe at college?".It was noted that the response pattern of the male and female on the issue "Are the toilets or latrines safe at college?" were different. Male was disproportionately associated with the response yes and no, female was disproportionately associated with the response of there was no toilet or latrines at the college.

The graphical representation to the responses to are the toilets or latrines safe at college among male and female is presented in Figure 4.14.

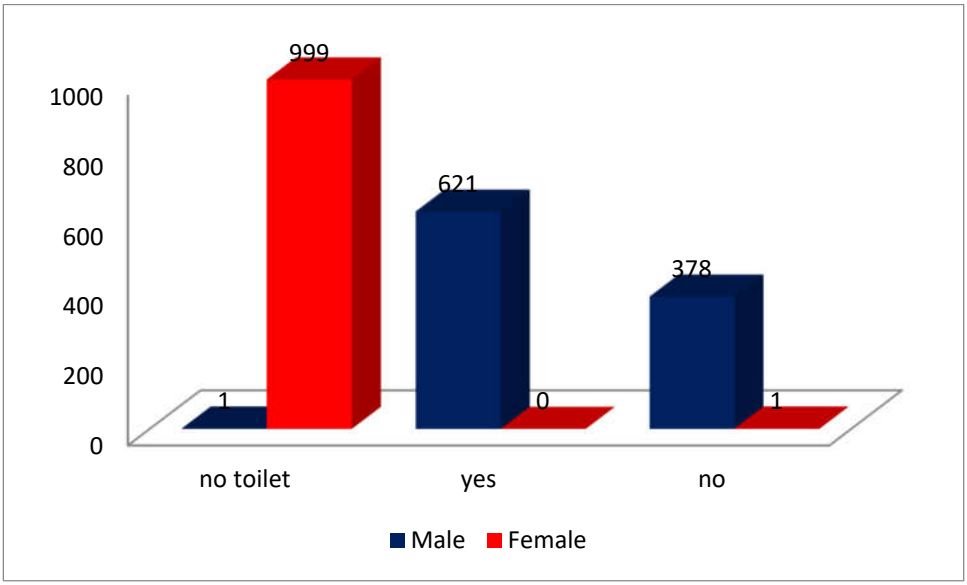

Figure 4.14*"Are the toilets or latrines safe at college?" among male and female students*

Table 4.27

Analysis on the question "Are the toilets or latrines safe at college?" among government, aided and self-financing student

Category		No toilet	Yes	No	Total	Chi-square & p-value
Government	Count	340	200	140	680	Chi-square = 17.463 P = 0.002
	Expected Count	340.0	204.0	136.0	680.0	
	% of Total	17.0%	10.0%	7.0%	34.0%	
Aided	Count	320	220	100	640	
	Expected Count	320.0	192.0	128.0	640.0	
	% of Total	16.0%	11.0%	5.0%	32.0%	
Self-financing	Count	340	180	160	680	
	Expected Count	340.0	204.0	136.0	680.0	
	% of Total	17.0%	9.0%	8.0%	34.0%	
Total	Count	1000	600	400	2000	
	Expected Count	1000.0	600.0	400.0	2000.0	
	% of Total	50.0%	30.0%	20.0%	100.0%	

As shown in Table 4.29, 50% government, 50% aided, 50% self-financing students informed that there were no toilets or latrines at college. 29.4% government, 34.4% aided, 26.5% self-financing students told toilets at college were safe. 20.6% government, 15.6% aided, 23.5% self-financing students were told toilets and latrines at college were not safe. Chi square for the group obtained was 17.463 which is significant at 0.05 level of significance, as the p-value obtained was 0.002 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "Are the toilets or latrines safe at college?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Are the toilets or latrines safe at college?" were different. Government college students were disproportionately associated with the response of no. Aided college students were disproportionately associated with the response of yes. Self-financing college students were disproportionately associated with the response of no.

The graphical representation to the responses to are the toilets or latrines safe at college among government, aided and self-financing is presented in Figure 4.15.

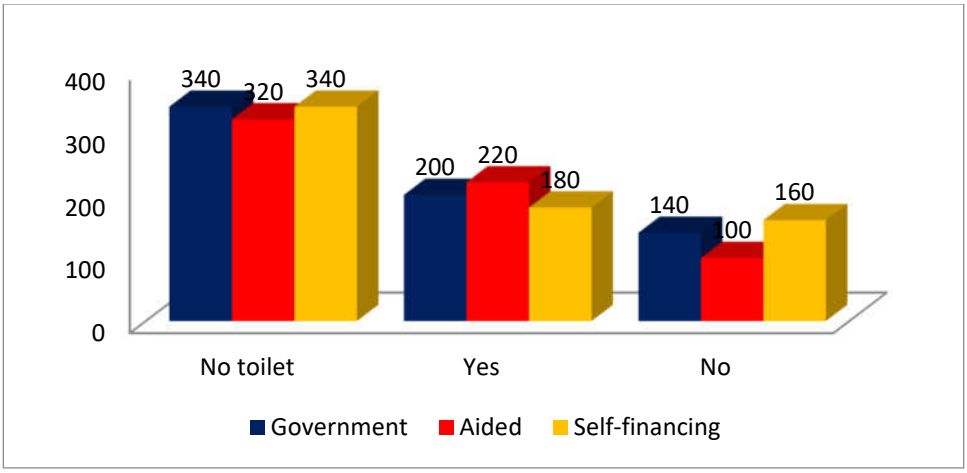

Figure 4.15 *"Are the toilets or latrines safe at college?" among government, aided and self-financing students*

Table 4.28

Analysis on the question "Are the toilets or latrines hygienic at college?" among urban and rural area students

		Yes	No	There are no Toilets or Latrines in College	Total	Chi-square & p-value
Rural	**Count**	577	423	0	1000	
	Expected Count	535.0	423.0	0.0	1000.0	
	% of Total	28.85%	21.15%	0.0%	50.0%	
Urban	**Count**	525	475	0	1000	Chi-square= 21.414,
	Expected Count	551.0	449.0	0.0	1000.0	
	% of Total	27.55%	23.75%	0.0%	50.0%	p= 0.000
Total	**Count**	1082	898	0	2000	
	Expected Count	1082.0	898.0	0.0	2000.0	
	% of Total	54.1%	44.9%	0.0%	100.0%	

Area wise comparison of study on cleanliness of toilets shows that 57.7% of rural area and 52.5% of urban area toilets are hygienic. Area wise comparison of the study on cleanliness of toilet shows that 42.3% rural area and 47.5% of urban area toilets are not hygienic. The value of Chi-Square obtained is 21.414, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Terrain and response; that is, both urban and rural. All the colleges have toilet or latrine facility in their institution. The analysis of study shows that the toilet or latrine facility of urban areas little bit better than that of rural areas.

The graphical representation to the responses to are the toilets or latrines hygienic at college among urban and rural area is presented in Figure 4.16.

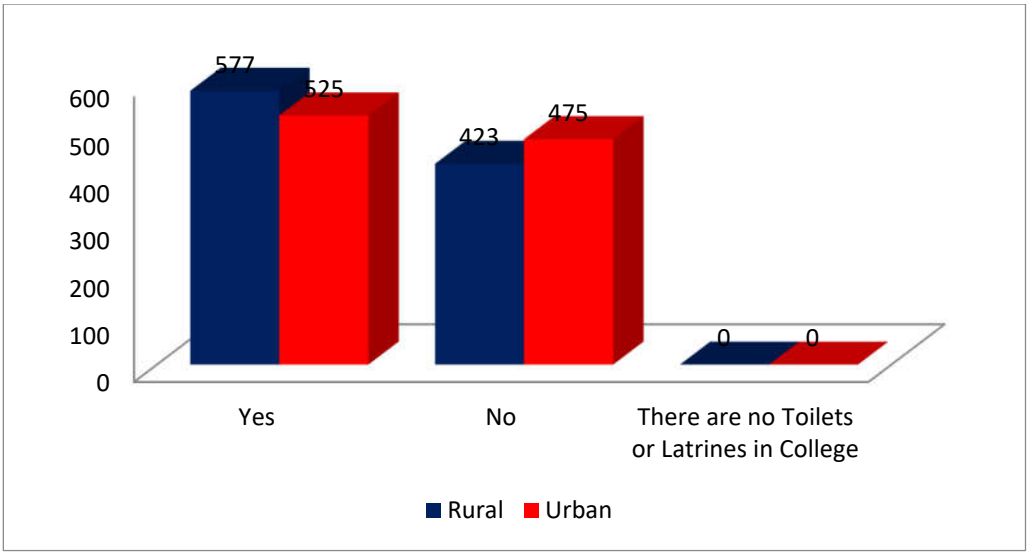

Figure 4.16*"Are the toilets or latrines hygienic at college?" among urban and rural area students*

Table 4.29

Analysis on the question "Are the toilets or latrines hygienic at college?" among male and female students

		No toilets	Yes	No	Total	Chi-square & p-value
Male	**Count**	0	621	379	1000	Chi-square=1988.09 p= 0.000
	Expected Count	498.5	310.5	191.0	1000.0	
	% Total	.0%	31.05%	18.95%	50.0%	
Female	**Count**	997	0	3	1000	
	Expected Count	500.0	300.0	200.0	1000.0	
	% Total	49.85%	.0%	.0%	50.0%	
Total	**Count**	997	621	382	2000	
	Expected Count	498.5	310.5	191.0	2000.0	
	% Total	49.85%	31.05%	19.1%	100.0%	

As shown in Table 4.29, 31.05% male felt toilets at the college were hygienic. 49.85% female told that there were no toilets for female. The obtained Chi square for this group was 1988.09 which were significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Are the toilets or latrines hygienic at college?"It was noted that the response pattern of the male and female on the issue " Are the toilets or latrines hygienic at college?" were different. Male was disproportionately associated with the response of yes and no, female was disproportionately associated with the response of there was no toilet for female.

The graphical representation to the responses to are the toilets or latrines hygienic at college among male and female students is presented in Figure 4.17.

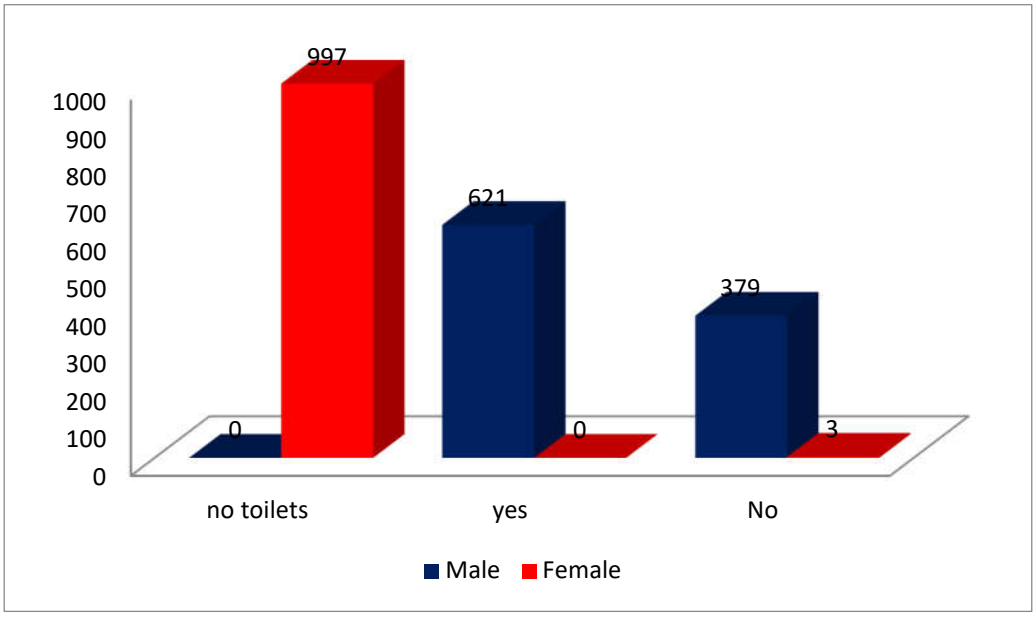

Figure 4.17 *"Are the toilets or latrines hygienic at college?" among male and female students*

Table 4.30

Analysis on the question "Are the toilets or latrines hygienic at college?" among government, aided and self-financing students

Category		No toilet	Yes	No	Total	Chi-square & p-value
Government	**Count**	340	186	154	680	Chi-square = 17.463 p-value = 0.002
	Expected Count	340.0	198.22	141.78	680.0	
	% of Total	17.0%	9.3%	7.7%	34.0%	
Aided	**Count**	320	214	106	640	
	Expected Count	320.0	186.56	128.44	640.0	
	% of Total	16.0%	10.7%	5.3%	32.0%	
Un-Aided	**Count**	340	183	157	680	
	Expected Count	340.0	198.22	141.78	680.0	
	% of Total	17.0%	9.0%	8.0%	34.0%	
Total	**Count**	1000	583	417	2000	
	Expected Count	1000.0	583.0	417.0	2000.0	
	% of Total	50.0%	29.15%	20.85%	100.0%	

As shown in Table 4.30, 50% government, 50% aided, 50% self-financing students informed that there were no toilets or latrines at college. 29.4% government, 34.4% aided, 26.5% self-financing students told toilets at college were hygienic. 20.6% government, 15.6% aided, 23.5% self-financing students told toilets and latrines at college were not hygienic. The obtained Chi square for the group was 17.463 which was significant at 0.05 level of significance, as the obtained p-value 0.002 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the

question of "Are the toilets or latrines hygienic at college?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Are the toilets or latrines hygienic at college?" were different. Government college students were disproportionately associated with the response of no. Aided college students were disproportionately associated with the response of yes. Self-financing college students were disproportionately associated with the response of no.

The graphical representation to the responses to are the toilets or latrines hygienic at college among government, aided and self-financing students is presented in Figure 4.18.

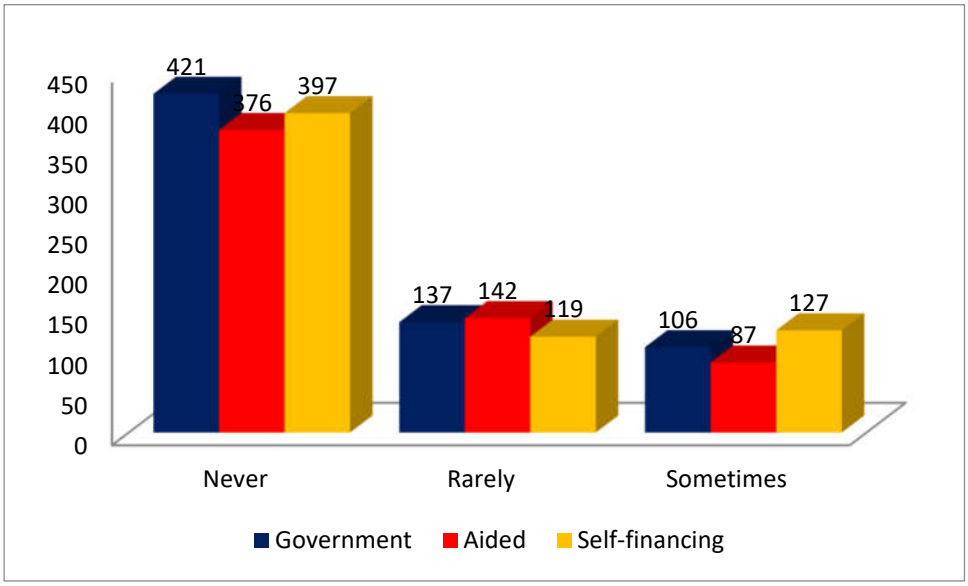

Figure 4.18 *"Are the toilets or latrines hygienic at college?" among government, aided and self-financing students*

Table 4.31

Analysis on the question "How often do you use soap to wash your hands after using toilet or latrine?" among urban and rural area students

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & P value
Urban	**Count**	104	197	357	240	102	1000	Chi-square= 1.371, P= 0.849
	Expected Count	104.0	197.5	347.5	250.0	101.0	1000.0	
	% Total	5.2%	9.85%	17.85%	12.0%	5.1%	50.0%	
Rural	**Count**	104	198	338	260	100	1000	
	Expected Count	104.0	197.5	347.5	250.0	101.0	1000.0	
	% Total	5.2%	9.9%	16.9%	13.0%	5.05%	50.0%	
Total	**Count**	208	395	695	500	202	2000	
	Expected Count	200.0	400.0	700.0	500.0	200.0	2000.0	
	% Total	10.4%	19.75%	34.75%	25.0%	10.1%	100.0%	

Area wise comparison of the frequency of hand washing with soap after using toilet or latrine shows that 10.04% of students from urban area and 10.4% of students from rural area never use soap to clean their hands. While making area wise comparison, it is found that, 19.7% of urban students and 19.8% of rural students rarely use soap to clean their hands.35.7% of urban students and 33.8% of rural students sometimes use soap to clean their hands after using toilet or latrine. The study shows that, 24.0% of urban students and 26.0% of rural students most of the time use soap to clean their hands after using toilet or latrine.10.2% of urban students and 10.0% of rural students always use soap to clean their hands after using toilet or latrine. The value of Chi-Square obtained is 1.371, which is significant at 0.05 levels of significance as the p-value obtained is 0.849. That means there is no statistically significant association between Area and response; that is, both urban and rural have almost equally washed their hands after using toilet or latrine.

The graphical representation to the responses to how often do you use soap to clean hands after using toilet or latrine among rural and urban area students are presented in Figure 4.19.

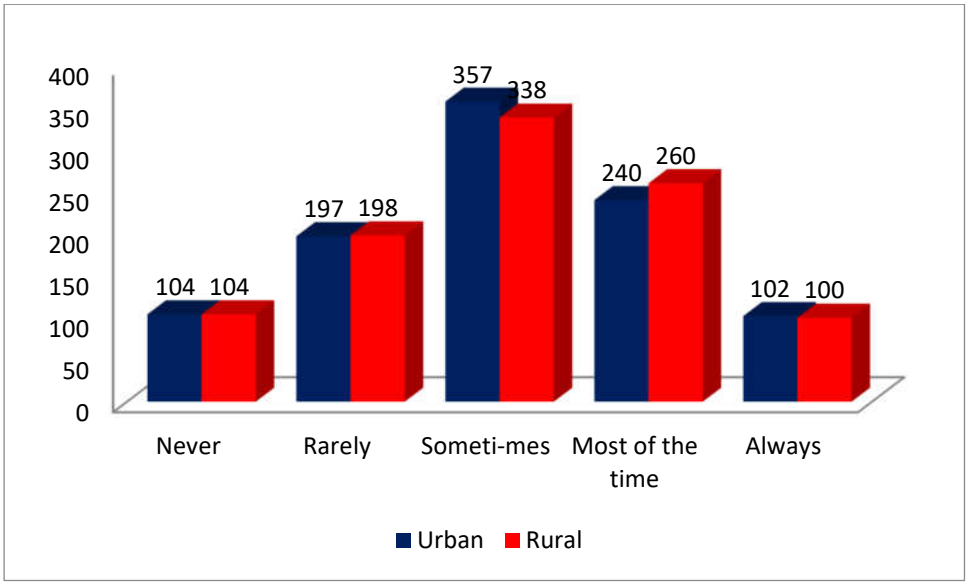

Figure 4.19 *"How often do you use soap to wash your hands after using toilet or latrine?" among urban and rural area students*

Table 4.32

Analysis on the question "How often do you use soap to wash your hands after using toilet or latrine?" among male and female students

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & p-value
Male	**Count**	106	211	387	199	97	1000	
	Expected Count	105.0	214.0	366.5	218.5	96.5	1000.0	
	% Total	5.3%	10.55%	19.35%	9.95%	4.85%	50.0%	
Female	**Count**	103	217	346	238	96	1000	Chi-square=5.90
	Expected Count	105.0	214.0	366.5	218.5	96.5	1000.0	
	% Total	5.15%	10.85%	17.3%	11.9%	4.8%	50.0%	
Total	**Count**	209	428	733	437	193	2000	p= 0.000
	Expected Count	209.0	428.0	733.0	437.0	193.0	2000.0	
	% Total	10.45%	21.4%	36.65%	21.85%	9.65%	100.0%	

As shown in Table 4.32, 5.3% male and 5.15% female told that never washed the hands after the use of toilet, 10.55% male and 10.85% female told rarely, 19.35% male and 17.3% female told sometimes, 9.95% male and 11.9% female told most of the time, 4.85% male and 4.8% female told that always wash the hands after the use of toilet. The obtained Chi square for this group was 5.90 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How often do you use soap to wash your hands after using toilet or latrine?"It was noted that the response pattern of the male and female on the issue "How often do you use soap to wash your hands after using toilet or latrine?" were different. Male was disproportionately associated with the response of sometime, female was disproportionately associated with the response of most of the time.

The graphical representation to the responses to how often do you use soap to clean hands after using toilet or latrine among male and female students are presented in Figure 4.20.

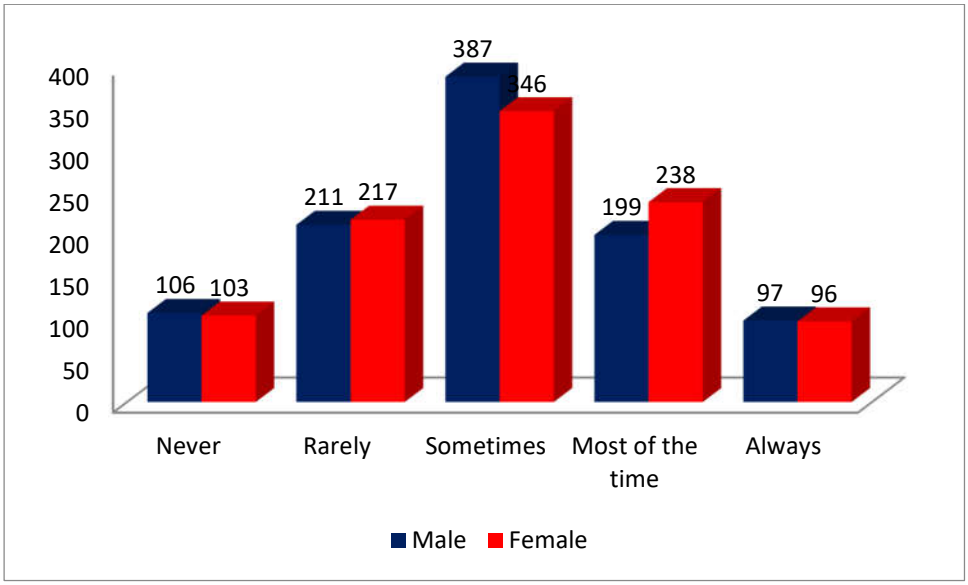

Figure 4.20 *"How often do you use soap to wash your hands after using toilet or latrine?" among male and female students*

Table 4.33

Analysis on the question "How often do you use soap to wash your hands after using toilet or latrine?" among government, aided and self-financing students

Category		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & p-value
Government	**Count**	86	145	241	127	81	680	Chi- square = 13.95, p = 0.000
	Expected Count	78.2	139.06	239.02	160.48	63.24	680.0	
	% of Total	4.3%	7.25%	12.05%	6.35%	4.05%	34.0%	
Aided	**Count**	76	128	224	175	37	640	
	Expected Count	73.6	130.88	224.96	151.04	59.52	640.0	
	% of Total	3.8%	6.4%	11.2%	8.75%	1.85%	32.0%	
Self-financing	**Count**	68	136	238	170	68	680	
	Expected Count	78.2	139.06	239.02	160.48	63.24	680.0	
	% of Total	3.4%	6.8%	11.9%	8.5%	3.4%	34.0%	
Total	**Count**	230	409	703	472	186	2000	
	Expected Count	230.0	409.0	703.0	472.0	186.0	2000.0	
	% of Total	11.5%	20.45%	35.15%	23.6%	9.3%	100.0%	

As shown in Table 4.33, 4.3%government, 3.8% aided, 3.4% Self-financing students never used soap to wash the hands after using toilet or latrine. 7.25% government, 6.4% aided, 6.8% Self-financing students rarely used soap to wash hands. 12.05%government, 11.2% aided, 11.9% Self-financing students sometimes used soap to wash hands. 6.35%government, 8.75% aided, 8.5% Self-financing students most of the time used soap to wash hands. 4.05% government, 1.85% aided, 3.4% Self-financing students always used soap to wash hands.

The graphical representation to the responses to how often do you use soap to clean hands after using toilet or latrine among male and female students are presented in Figure 4.20.

Chi square for the group obtained was 13.95 which was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of “How often do you use soap to wash your hands after using toilet or latrine?”It was noted that the response pattern of the government, aided and Self-financing college students on the issue “How often do you use soap to wash your hands after using toilet or latrine?”were different. Government college students were disproportionately associated with the response of never, rarely and always. Aided college students were disproportionately associated with the response of never and most of the time. Self-financing college students were disproportionately associated with the response of rarely, sometimes and most of the time.

The graphical representation to the responses to how often do you use soap to clean hands after using toilet or latrine among government, aided and self-financing students are presented in Figure 4.21.

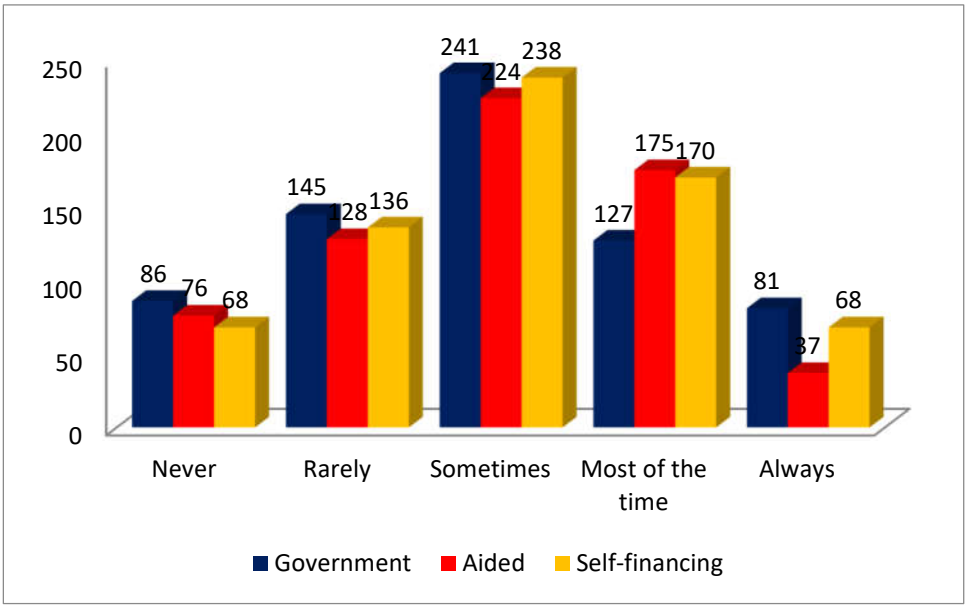

Figure 4.21: *"How often do you use soap to wash your hands after using toilet or latrine?" among government, aided and self-financing students*

DESCRIPTIVE PROFILE OF VIOLENCE RELATED BEHAVIOUR

The descriptive profiles of four Violence Related Behaviour such as age, gender, height and weight of male and female students are presented in table 4.34, government, aided and self-financing engineering college students in table 4.35, of rural and urban Engineering students in table 4.36 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.37.

Table 4.34

The descriptive profiles on violence related behavior of Urban and Rural Engineering students

Descriptive		Urban	Rural
		Q13	Q13
N	**Valid**	1000	1000
	Missing	0	0
Mean		2.40	2.20
Std. Error of Mean		0.04	0.04
Median		2.00	2.00
Mode		1	1
Std. Deviation		1.40	1.28
Variance		1.96	1.64
Skewness		.58	.77
Std. Error of Skewness		.08	.08
Kurtosis		-.98	-.50
Std. Error of Kurtosis		.15	.15
Range		4	4
Minimum		1	1
Maximum		5	5
Percentiles	**25**	1.00	1.00
	50	2.00	2.00
	75	3.00	3.00

Question number 13 shown in Appendix II

Table 4.35

The descriptive profiles on Violence Related behaviour of male and female engineering students

Descriptive		Male	Female
		Q13	Q13
N	**Valid**	1000	1000
	Missing	0	0
Mean		2.60	2.00
Std. Error of Mean		.038	.045
Median		2.50	1.00
Mode		2a	1
Std. Deviation		1.20	1.41
Variance		1.44	2.00
Skewness		.46	1.06
Std. Error of Skewness		.08	.08
Kurtosis		-.56	-.40
Std. Error of Kurtosis		.15	.15
Range		4	4
Minimum		1	1
Maximum		5	5
	25	2.00	1.00
Percentiles	**50**	2.50	1.00
	75	3.00	3.00

Question number 13 shown in Appendix II

Table 4.36

The descriptive profiles on Violence Related behaviour of government, aided and self-financing engineering students

Descriptive		Government	Aided	Un-Aided
		Q13	Q13	Q13
N	**Valid**	680	640	680
	Missing	0	0	0
Mean		2.29	2.19	2.41
Std. Error of Mean		.053	.049	.054
Median		2.00	2.00	2.00
Mode		1	1	1
Std. Deviation		1.38	1.24	1.40
Variance		1.92	1.53	1.95
Skewness		.73	.74	.54
Std. Error of Skewness		.09	.10	.09
Kurtosis		-.74	-.50	-1.00
Std. Error of Kurtosis		.19	.19	.19
Range		4	4	4
Minimum		1	1	1
Maximum		5	5	5
Percentiles	**25**	1.00	1.00	1.00
	50	2.00	2.00	2.00
	75	3.00	3.00	3.00

Question number 13 shown in Appendix II

Table 4.37

The descriptive profiles on Violence Related behaviour of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics and Communication	Mechanical	Computer Science
		Q13	Q13	Q13
N	**Valid**	640	760	600
	Missing	0	0	0
Mean		2.19	2.47	2.20
Std. Error of Mean		.049	.053	.052
Median		2.00	2.00	2.00
Mode		1	1	1
Std. Deviation		1.24	1.47	1.28
Variance		1.53	2.15	1.63
Skewness		0.74	0.56	0.68
Std. Error of Skewness		0.10	0.09	.100
Kurtosis		-0.50	-1.09	-0.67
Std. Error of Kurtosis		0.19	0.18	.199
Range		4	4	4
Minimum		1	1	1
Maximum		5	5	5
Percentiles	**25**	1.00	1.00	1.00
	50	2.00	2.00	2.00
	75	3.00	4.00	3.00

Question number 13 shown in Appendix II

CHI- SQUARE ANALYSIS OF VIOLENCE RELATED BEHAVIOUR

Table 4.38

Analysis on the question "How many times were you in a physical fight during the past 1 year?" among urban and rural area students

		Never	1 time	2 to 5 times	6 to 9 times	10 or more times	Total	Chi-square & p-value
Urban	**Count**	420	194	226	80	80	1000	
	Expected Count	401.0	197.0	201.5	100.5	100.0	1000.0	
	% Total	21.0%	9.7%	11.3%	4.0%	4.0%	50.0%	
Rural	**Count**	382	200	177	121	120	1000	Chi-square= 16.21,
	Expected Count	401.0	197.0	201.5	100.5	100.0	1000.0	
	% Total	19.1%	10.0%	8.85%	6.05%	6.0%	50.0%	p= 0.000
Total	**Count**	802	394	403	201	200	2000	
	Expected Count	802.0	394.0	403.0	201.0	200.0	2000.0	
	% Total	40.1%	19.7%	20.15%	10.05%	10.0%	100.0%	

While making area wise comparison it is found that, 42.0% of urban area students and 38.2% rural area students come under student have never indulged in a physical fight. The frequency of physical fight during last one year shows that 19.4% of urban area students and 20.0% of rural area students have indulged in a physical fight only once. Area wise comparison of the frequency of physical fight during last one year shows that 22.6% of urban area students and 17.8% of rural area students have indulged in a physical fight two to five times during the past one year.8.0% of urban area students

and 2.0% rural area students come under the category of the students have indulged in a physical fight ten or more times.

The value of Chi-Square obtained is 22.000, which is significant at 0.05 levels of significance as the p-value obtained is 000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally physical fight for last one year and rural area students are more likely to have the tendency to fight than that of urban students.

The graphical representation to the responses to how many times were you in a physical fight during past one year among urban and rural area students are presented in Figure 4.22.

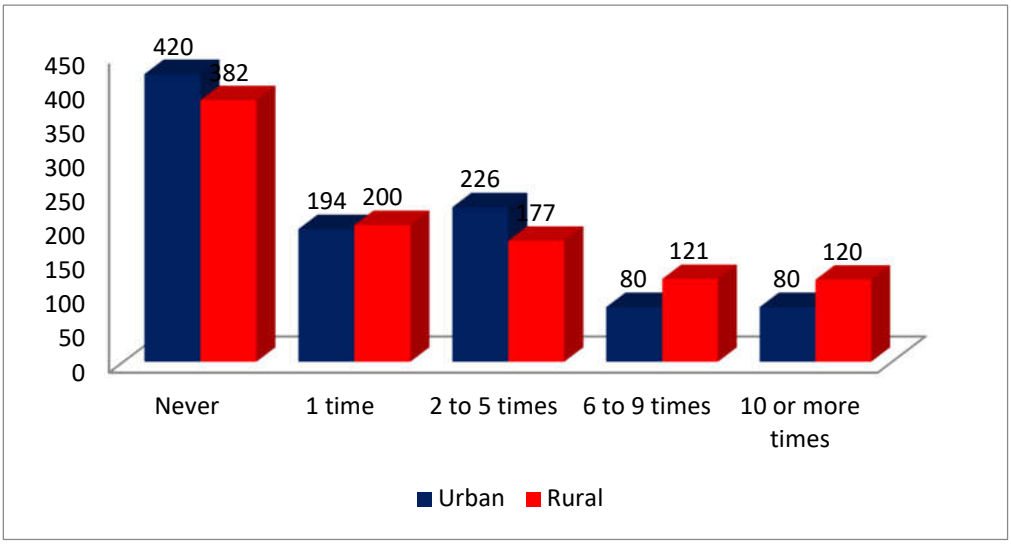

Figure 4.22 *"How many times were you in a physical fight during the past 1 year?" among urban and rural area students*

Table 4.39

Analysis on the question "How many times were you in a physical fight during the past 1 year?" among male and female students

		o time	1 time	2 to 5 times	6-9 times	10 or more times	Total	Chi-square & P value
Male	**Count**	205	299	303	99	94	1000	Chi-square=387.14 P= 0.000
	Expected Count	398.0	201.5	200.5	105.5	94.5	1000.0	
	% Total	10.25%	14.95%	15.15%	4.95%	4.7%	50.0%	
Female	**Count**	591	104	98	112	95	1000	
	Expected Count	398.0	201.5	200.5	105.5	94.5	1000.0	
	% Total	29.55%	5.2%	4.9%	5.6%	4.7%	50.0%	
Total	**Count**	796	403	401	211	189	2000	
	Expected Count	796.0	403.0	401.0	211.0	189.0	2000.0	
	% Total	39.8%	20.15%	20.05%	10.55%	9.45%	100.0%	

As shown in Table 4.39, 10.25% male students and 29.55% female students never fought in the past one year, 14.95% male students and 5.2% female students fought one time, 15.15% male students and 4.9% female students fought two to five times, 4.95% male students and 5.6% female students fought six to nine times, 4.7% male and female students fought ten or more times in the past one year. Chi square value obtained for this group was 387.14, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many times were you in a

physical fight during the past one year?"It was noted that the response pattern of the male and female on the issue "How many times were you in a physical fight during the past one year?" were different. Male was disproportionately associated with the response of fought one time and two to five times in the past one year. Female was disproportionately associated with the response of never fought.

The graphical representation to the responses to how many times were you in a physical fight during past one year among male and female students are presented in Figure 4.23.

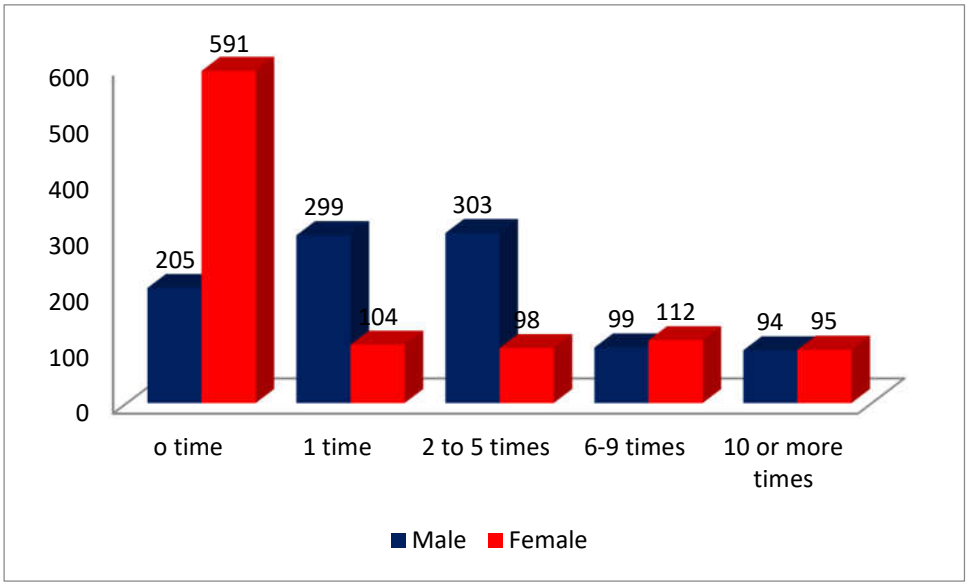

Figure 4.23"How many times were you in a physical fight during the past 1 year?" among male and female students

Table 4.40

Analysis on the question "How many times were you in a physical fight during the past 1 year?" among government, aided and self-financing students

Category		0 Time	1 Time	2 to 5 Times	6 go 9 Times	10 or more times	Total	Chi-square &p-value
Government	**Count**	281	143	117	63	76	680	Chi-square = 23.621, p= 0.003
	Expected Count	272.68	135.66	136.0	70.38	65.28	680.0	
	% of Total	14.05%	7.15%	5.85%	3.15%	3.8%	34.0%	
Aided	**Count**	267	132	141	60	40	640	
	Expected Count	256.64	127.68	128.0	66.24	61.44	640.0	
	% of Total	13.35%	6.6%	7.05%	3.0%	2.0%	32.0%	
Self-financing	**Count**	254	124	142	84	76	680	
	Expected Count	272.68	135.66	136.0	70.38	65.28	680.0	
	% of Total	12.7%	6.2%	7.1%	4.2%	3.8%	34.0%	
Total	**Count**	802	399	400	207	192	2000	
	Expected Count	802.0	399.0	400.0	207.0	192.0	2000.0	
	% of Total	40.1%	19.95%	20.0%	10.35%	9.6%	100.0%	

As shown in Table 4.40, 41.2% government, 40.6% aided, and 38.2% self-financing students never fought during past one year. 20.6% government, 21.9% aided, and 17.6% self-financing students fought one time during past one year. 17.6% government, 21.9% aided, and 17.6% self-financing students fought two to five times. 8.8% government, 9.4% aided, 11.8% self-financing students fought six to nine times. 11.8% government, 6.3% aided, 11.8% self-financing students fought ten or more times during the past one year. Chi square value obtained for this group was 23.621, which was significant at 0.05 level of significance, as the p-value obtained is 0.003 that was lesser than

0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How many times were you in a physical fight for during the past one year?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many times were you in a physical fight for during the past one year?" were different. Government college students were disproportionately associated with the response of zero time, one time and ten or more time. Aided college students were disproportionately associated with the response of zero time, one time and two to five times. Self-financing college students were disproportionately associated with the response of two to five times, six to nine times and ten or more times.

The graphical representation to the responses to how many times were you in a physical fight during past one year among government, aided and self-financing students are presented in Figure 4.24.

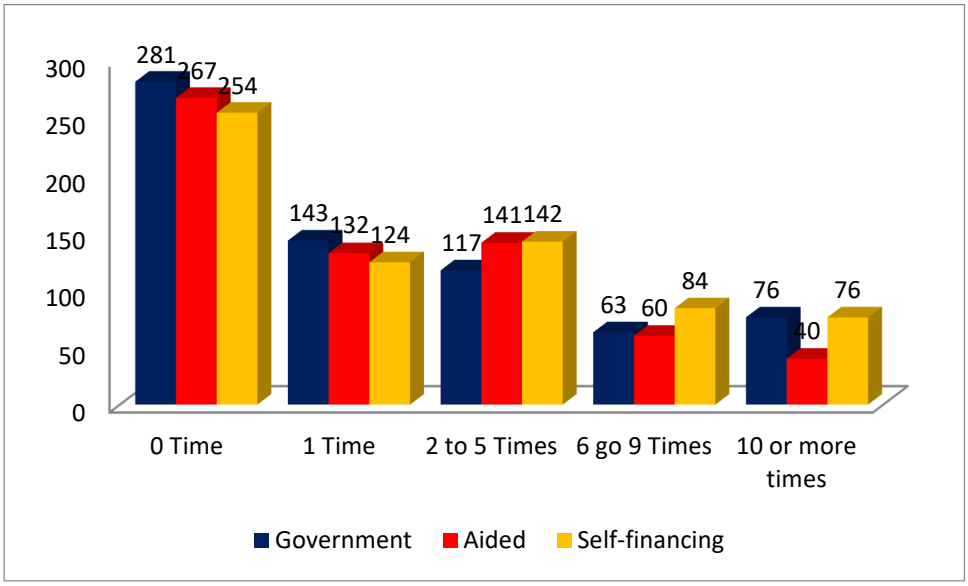

Figure 4.24 *"How many times were you in a physical fight during the past 1 year?" among government, aided and self-financing students*

DESCRIPTIVE PROFILES OF MENTAL HEALTH

The descriptive profiles of four Hygienic Behaviour such as age, gender, height and weight of male and female students are presented in table 4.41, government, aided and self-financing engineering college students in table 4.42, of rural and urban engineering students in table 4.43 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.44.

Table 4.41

The descriptive profiles on mental health of male and female engineering students

Descriptive		Male			Female		
		Q14	**Q15**	**Q16**	**Q14**	**Q15**	**Q16**
N	**Valid**	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0
Mean		2.40	1.90	3.30	2.50	1.90	3.40
Std. Error of Mean		.041	.009	.032	.038	.009	.032
Median		2.00	2.00	4.00	2.00	2.00	4.00
Mode		1a	2	4	2	2	4
Std. Deviation		1.28	.30	1.01	1.20	.30	1.02
Variance		1.64	.09	1.01	1.45	.09	1.04
Skewness		.65	-2.67	-1.22	.69	-2.67	-1.43
Std. Error of Skewness		.08	.08	.08	.08	.08	.08
Kurtosis		-.61	5.14	.17	-.40	5.14	.52
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15
Range		4	1	3	4	1	3
Minimum		1	1	1	1	1	1
Maximum		5	2	4	5	2	4
	25	1.00	2.00	3.00	2.00	2.00	3.00
Percentiles	**50**	2.00	2.00	4.00	2.00	2.00	4.00
	75	3.00	2.00	4.00	3.00	2.00	4.00

Question number 14,15 & 16 shown in Appendix II

Table 4.42

The descriptive profiles on Mental health of government, aided and self-financing engineering students

Descriptive		Government			Aided			Un-Aided		
		Q14	Q15	Q16	Q14	Q15	Q16	Q14	Q15	Q16
N	**Valid**	680	680	680	640	640	640	680	680	680
	Missing	0	0	0	0	0	0	0	0	0
Mean		2.53	1.88	3.32	2.28	1.88	3.38	2.53	1.94	3.35
Std. Error of Mean		.049	.012	.040	.044	.013	.039	.049	.009	.038
Median		2.00	2.00	4.00	2.00	2.00	4.00	2.00	2.00	4.00
Mode		2	2	4	2	2	4	2	2	4
Std. Deviation		1.29	.32	1.05	1.13	.33	.99	1.29	.24	1.00
Variance		1.66	.10	1.10	1.27	.11	.99	1.66	.06	.99
Skewness		.60	-2.38	-1.29	.75	-2.27	-1.38	.60	-3.76	-1.29
Std. Error of Skewness		.09	.09	.09	.10	.10	.10	.09	.09	.09
Kurtosis		-.73	3.67	.17	.00	3.18	.54	-.73	12.16	.27
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		4	1	3	4	1	3	4	1	3
Minimum		1	1	1	1	1	1	1	1	1
Maximum		5	2	4	5	2	4	5	2	4
Percentiles	**25**	2.00	2.00	3.00	1.00	2.00	3.00	2.00	2.00	3.00
	50	2.00	2.00	4.00	2.00	2.00	4.00	2.00	2.00	4.00
	75	3.00	2.00	4.00	3.00	2.00	4.00	3.00	2.00	4.00

Question number 14,15 & 16 shown in Appendix II

Table 4.43

The descriptive profiles on Mental health of Urban and Rural Engineering students

Descriptive		Urban			Rural		
		Q14	Q15	Q16	Q14	Q15	Q16
N	**Valid**	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0
Mean		2.64	1.92	3.34	2.26	1.88	3.36
Std. Error of Mean		0.04	0.01	0.03	0.04	0.01	0.03
Median		2.00	2.00	4.00	2.00	2.00	4.00
Mode		2	2	4	2	2	4
Std. Deviation		1.26	.27	1.01	1.20	.33	1.02
Variance		1.59	.07	1.03	1.43	.11	1.03
Skewness		.46	-3.10	-1.30	.89	-2.34	-1.34
Std. Error of Skewness		.08	.08	.08	.08	.08	.08
Kurtosis		-.77	7.63	.29	-.05	3.49	.36
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15
Range		4	1	3	4	1	3
Minimum		1	1	1	1	1	1
Maximum		5	2	4	5	2	4
	25	2.00	2.00	3.00	1.00	2.00	3.00
Percentiles	**50**	2.00	2.00	4.00	2.00	2.00	4.00
	75	3.00	2.00	4.00	3.00	2.00	4.00

Question number 14,15 & 16 shown in Appendix II

Table 4.44

The descriptive profiles on Mental health of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics and Communication			Mechanical			Computer Science		
		Q14	Q15	Q16	Q14	Q15	Q16	Q14	Q15	Q16
N	**Valid**	640	640	640	760	760	760	600	600	600
	Missing	0	0	0	0	0	0	0	0	0
Mean		2.22	1.81	3.38	2.71	1.95	3.26	2.37	1.93	3.43
Std. Error of Mean		.044	.015	.042	.051	.008	.039	.045	.010	.036
Median		2.00	2.00	4.00	2.00	2.00	4.00	2.00	2.00	4.00
Mode		2	2	4	2	2	4	2	2	4
Std. Deviation		1.11	0.39	1.05	1.39	0.22	1.07	1.11	0.25	0.88
Variance		1.24	0.15	1.11	1.95	0.05	1.14	1.23	0.06	0.78
Skewness		0.93	-1.61	-1.44	0.35	-4.01	-1.06	0.71	-3.48	-1.55
Std. Error of Skewness		0.10	0.10	0.10	0.09	0.09	0.09	.100	.100	.100
Kurtosis		0.34	0.58	0.51	-1.18	14.16	-0.42	0.00	10.17	1.46
Std. Error of Kurtosis		0.19	0.19	0.19	0.18	0.18	0.18	.199	.199	.199
Range		4	1	3	4	1	3	4	1	3
Minimum		1	1	1	1	1	1	1	1	1
Maximum		5	2	4	5	2	4	5	2	4
	25	1.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	3.00
Percentiles	**50**	2.00	2.00	4.00	2.00	2.00	4.00	2.00	2.00	4.00
	75	3.00	2.00	4.00	4.00	2.00	4.00	3.00	2.00	4.00

Question number 14,15 & 16 shown in Appendix II

Table 4.45

Analysis on the question "How often have you felt lonely during past 30 days?" among urban and rural area students

		Never	Rarely	sometimes	Most of the time	Always	Total	Chi-square & P value
Urban	**Count**	302	385	154	76	83	1000	Chi- square= 53.60 P= 0.000
	Expected Count	257.0	346.0	198.5	96.5	102.5	1000.0	
	% Total	15.1%	19.25%	7.7%	3.8%	4.15%	50.0%	
Rural	**Count**	211	307	243	117	122	1000	
	Expected Count	257.0	346.0	198.5	96.5	102.5	1000.0	
	% Total	12.85%	17.3%	12.15%	5.85%	6.1%	50.0%	
Total	**Count**	513	692	397	193	205	2000	
	Expected Count	513.0	692.0	397.0	193.0	205.0	2000.0	
	% Total	25.65%	34.6%	19.85%	9.65%	10.25%	100.0%	

Table 4.45 shows that, 30.0% of urban area students and 20.0% of rural area students never felt lonely during past 30 days. While making area wise comparison 38.0% of urban area students and 32.0% of rural area students rarely felt lonely during past 30 days. The area wise study of analysis on loneliness shows that 16.0% of urban area students and 24.0% of rural area students sometimes felt lonely during past 30 days.8.0% of urban area students and 12.0% of rural area students most of the time felt lonely during past 30 days. 8.0% of urban area students and 12.0% of rural area students always felt lonely during past 30 days. The value of Chi-Square obtained is 57.143, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally felt lonely during past 30 days and rural area students are more likely to feel lonely that than of urban students..

The graphical representation to the responses to "how often have you felt lonely during past 30 days "among urban and rural area students are presented in Figure 4.25.

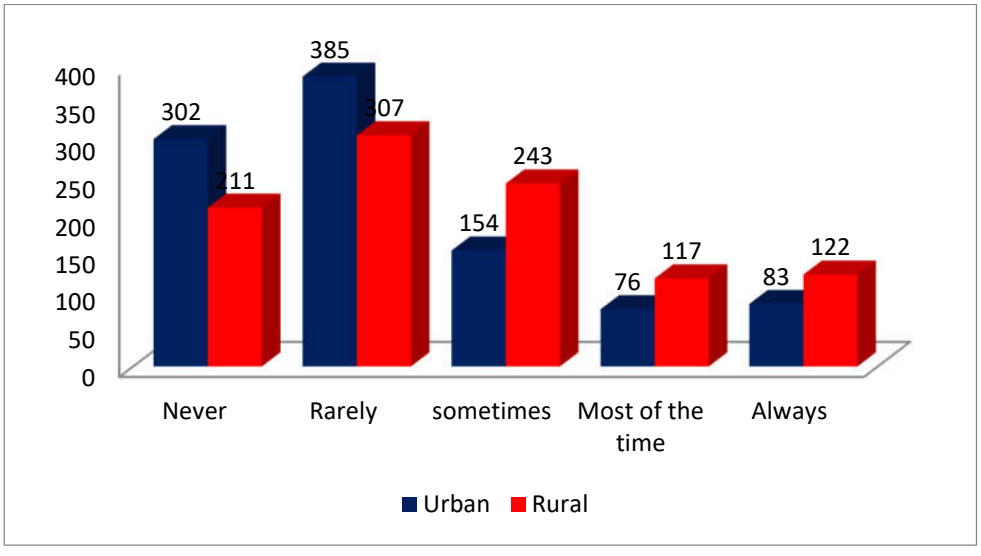

Figure 4.25"How often have you felt lonely during past 30 days?" among urban and rural area students

Table 4.46

Analysis on the question "How often have you felt lonely during past 30 days?" among male and female students

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & P value
Male	**Count**	303	298	207	111	81	1000	Chi- square=40.57 P= 0.000
	Expected Count	250.0	351.5	209.0	101.5	88.0	1000.0	
	% Total	15.15%	14.9%	10.35%	5.55%	4.05%	50.0%	
Female	**Count**	197	405	211	92	95	1000	
	Expected Count	250.0	351.5	209.0	101.5	88.0	1000.0	
	% Total	9.85%	20.25%	10.55%	4.6%	4.75%	50.0%	
Total	**Count**	500	703	418	203	176	2000	
	Expected Count	500.0	703.0	418.0	203.0	176.0	2000.0	
	% Total	25.0%	35.15%	20.9%	10.15%	8.8%	100.0%	

As shown in Table 4.46, 15.15% male and 9.85% female never felt the loneliness, 14.9% male and 20.25% female felt rarely, 10.35% male and 10.55% female sometimes felt loneliness, 5.55% male and 4.6% female felt most of the time, 4.05% male and 4.75% female always felt loneliness during past 30 days. It was noted that the response pattern of the male and female on the issue "How often have you felt lonely during past 30 days?" were different. Male was disproportionately associated with the response of never, female was disproportionately associated with the response of rarely felt loneliness during past 30 days.

The obtained Chi square for the group was 40.57, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How often have you felt lonely during past 30 days?"

The graphical representation to the responses to "how often have you felt lonely during past 30 days" among male and female students are presented in Figure 4.26.

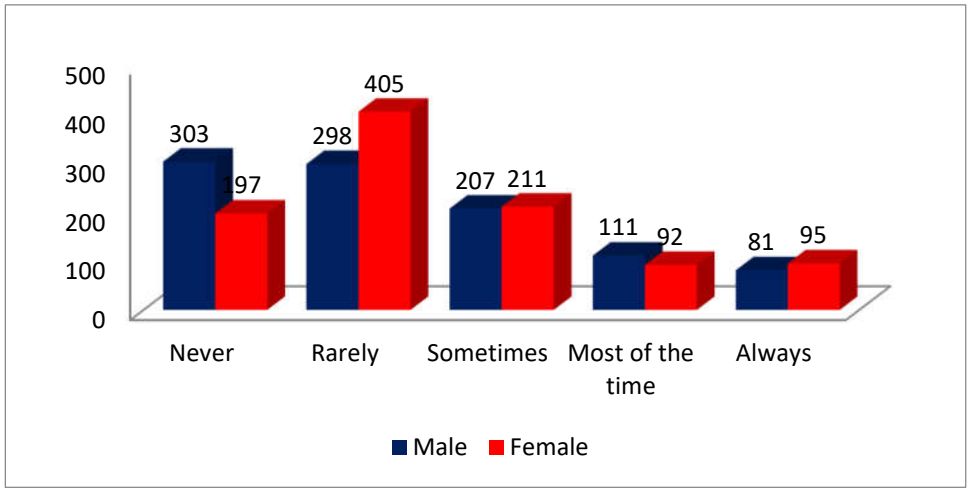

Figure 4.26 *"How often have you felt lonely during past 30 days?" among male and female students*

Table 4.47

Analysis on the question "How often have you felt lonely during past 30 days?" among government, aided and self-financing students

Category		Never	Rarely	Sometimes	Most of the Time	Always	Total	Chi-square & p-value
Government	**Count**	164	235	121	84		680	Chi- square = 42.017, p= 0
	Expected Count	170.0	238.0	136.0	68.0	68.0	680.0	
	% of Total	8.0%	12.0%	6.0%	4.0%	4.0%	34.0%	
Aided	**Count**	180	220	160	40	40	640	
	Expected Count	160.0	224.0	128.0	64.0	64.0	640.0	
	% of Total	9.0%	11.0%	8.0%	2.0%	2.0%	32.0%	
Self-financing	**Count**	160	240	120	80	80	680	
	Expected Count	170.0	238.0	136.0	68.0	68.0	680.0	
	% of Total	8.0%	12.0%	6.0%	4.0%	4.0%	34.0%	
Total	**Count**	500	700	400	200	200	2000	
	Expected Count	500.0	700.0	400.0	200.0	200.0	2000.0	
	% of Total	25.0%	35.0%	20.0%	10.0%	10.0%	100.0%	

As shown in Table 4.47, 23.5% government, 28.1% aided, 23.5% self-financing students never felt lonely for the past 30 days. 35.3% government, 34.4% aided, 35.3% self-financing students rarely felt lonely. 17.6% government, 25% aided, 17.6% self-financing students sometimes felt lonely. 11.8% government, 6.3% aided, 11.8% self-financing students most of the time felt lonely. 11.8% government, 6.3% aided, 11.8% self-financing students always felt lonely for the past 30 days. The obtained Chi-square for this group was 42.017 which was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How often have you felt lonely for the past 30 days?". It was noted that the response pattern of the government, aided and self-financing college students on the issue "How often have you felt lonely for the past 30 days?" were different. Government college students were disproportionately associated with the response of rarely, most of the time and always. Aided college students were disproportionately associated with the response of never and sometimes. self-financing college students were disproportionately associated with the response of rarely, most of the time and always.

The graphical representation to the responses to "how often have you felt lonely during past 30 days" among government, aided and self-financing students are presented in Figure 4.27.

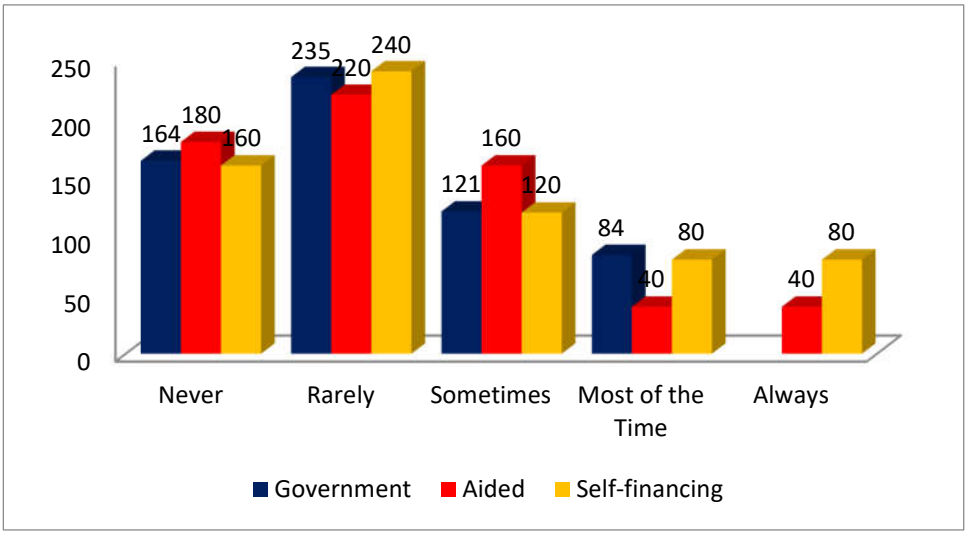

Figure 4.27*"How often have you felt lonely during past 30 days?" among government, aided and self-financing students*

Table 4.48

Analysis on the question "Have you ever seriously consider attempting suicide during the past 12 months?" among urban and rural area students

		Yes	No	Total	Chi-square & p-value
	Count	124	876	1000	
Urban	**Expected Count**	105.0	895.0	1000.0	
	% Total	6.2%	43.8%	50.0%	
	Count	86	914	1000	
Rural	**Expected Count**	105.0	895.0	1000.0	Chi= square= 7.68,
	% Total	4.3%	45.7%	50.0%	
	Count	210	1790	2000	p= 0.003
Total	**Expected Count**	210.0	1790.0	2000.0	
	% Total	10.05%	89.5%	100.0%	

Table 4.48 shows that while making area wise comparison suicide temptation shows that, 12.0% of urban area students and 8.0% of rural area students have seriously considered attempting suicide during the past 12 months. The study shows that 88.0% of urban students and 92.0% of rural students never tempted to attempt suicide during the last 12 months.The value of Chi-Square obtained is 8.889, which is significant at 0.05 levels of significance as the p-value obtained is 0.003. That means there is statistically significant association between Area and response; that is, both urban and

rural have not equally seriously considered attempting suicide during past 12 months. And urban students have more tendencies to attempt suicide than rural students.

The graphical representation to the responses to "have you ever seriously consider attempting suicide during the past 12 months" among urban and rural students are presented in Figure 4.28.

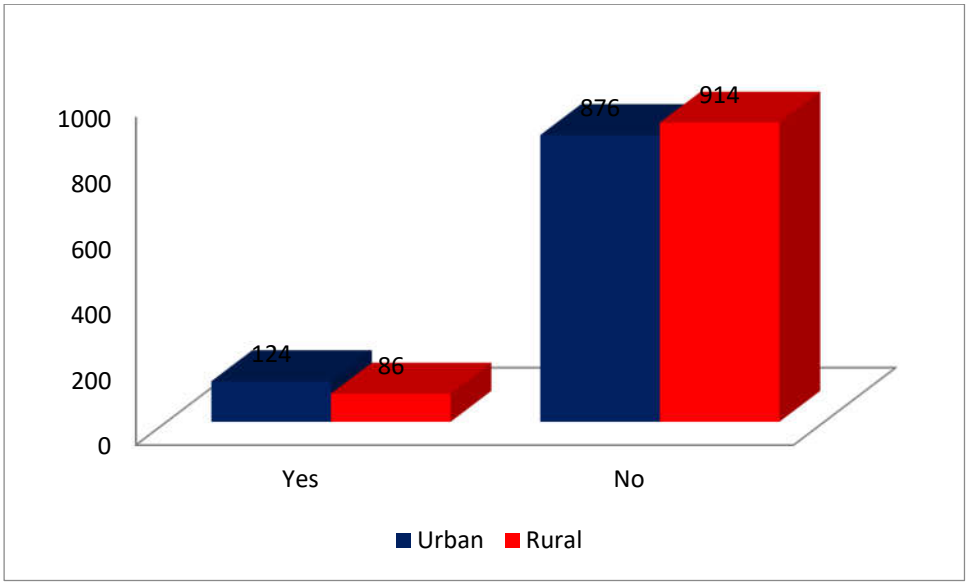

Figure 4.28*"Have you ever seriously consider attempting suicide during the past 12 months?" among urban and rural area students*

Table 4.49

Analysis on the question "Have you ever seriously consider attempting suicide during the past 12 months?" among male and female students

		yes	No	Total	Chi-square & P value
	Count	96	904	1000	
Male	**Expected Count**	101.5	898.5	1000.0	
	% Total	4.8%	45.2%	50.0%	
	Count	107	893	1000	
Female	**Expected Count**	101.5	898.5	1000.0	
	% Total	5.35%	44.65%	50.0%	Chi- square=0.66
	Count	203	1797	2000	
Total	**Expected Count**	203.0	1797.0	2000.0	P= 0.416
	% Total	10.15%	89.85%	100.0%	

As shown in Table 4.49,4.8% male and 5.35% female considered attempting suicide during the past 12 months but 45.2% male and 44.65% female never. It was noted that the response pattern of the male and female on the issue "Have you ever seriously consider attempting suicide during the past 12 months?", were same. The obtained Chi-square for this group was 0.66 which was not significant at 0.05 level of significance, as the p-value was 0.416 that was greater than 0.05 level. Thus, it may be failed to reject the null hypothesis that there was no association between the gender and response. It may be concluded that there was a no significant association between gender and their response on the question of "Have you ever seriously consider attempting suicide during the past 12 months?"

The graphical representation to the responses to "have you ever seriously consider attempting suicide during the past 12 months" among male and female students are presented in Figure 4.29.

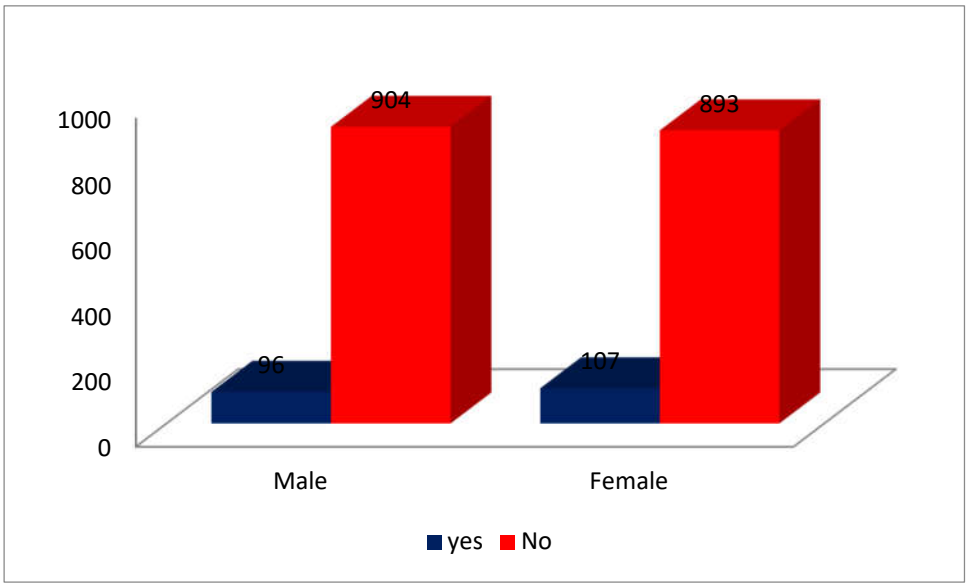

Figure 4.29:"Have you ever seriously considered attempting suicide for the past 12 months?" among male and female students

Table 4.50

Analysis on the question "Have you ever seriously considered attempting suicide for the past 12 months?" among government, aided and self-financing students

Category		Yes	No	Total	Chi-square & p-value
Government	**Count**	80	600	680	Chi-square = 19.608, p = 0.000
	Expected Count	68.0	612.0	680.0	
	% of Total	4.0%	30.0%	34.0%	
Aided	**Count**	80	560	640	
	Expected Count	64.0	576.0	640.0	
	% of Total	4.0%	28.0%	32.0%	
Self Financing	**Count**	40	640	680	
	Expected Count	68.0	612.0	680.0	
	% of Total	2.0%	32.0%	34.0%	
Total	**Count**	200	1800	2000	
	Expected Count	200.0	1800.0	2000.0	
	% of Total	10.0%	90.0%	100.0%	

As shown in Table 4.50, 11.8% government, 12.5% aided, 5.9% self-financing students seriously considered attempting suicide for the past 12 months. 88.2% government, 87.5% aided, 94.1% self-financing students never considered attempting suicide. It was noted that the response pattern of the government, aided and self-financing college students on the issue "Have you ever seriously considered attempting suicide for the past 12 months?" re different. Government college students were disproportionately associated with the response of yes. Aided college students were disproportionately associated with the response yes. Self-financing college students were disproportionately associated with the response of no.

The obtained Chi-square for this group was 19.608 was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be

concluded that there was no significant association between type of college and the response on the question of "Have you ever seriously considered attempting suicide for the past 12 months?"

The graphical representation to the responses to "have you ever seriously consider attempting suicide during the past 12 months" among government, aided and self-financing students are presented in Figure 4.30.

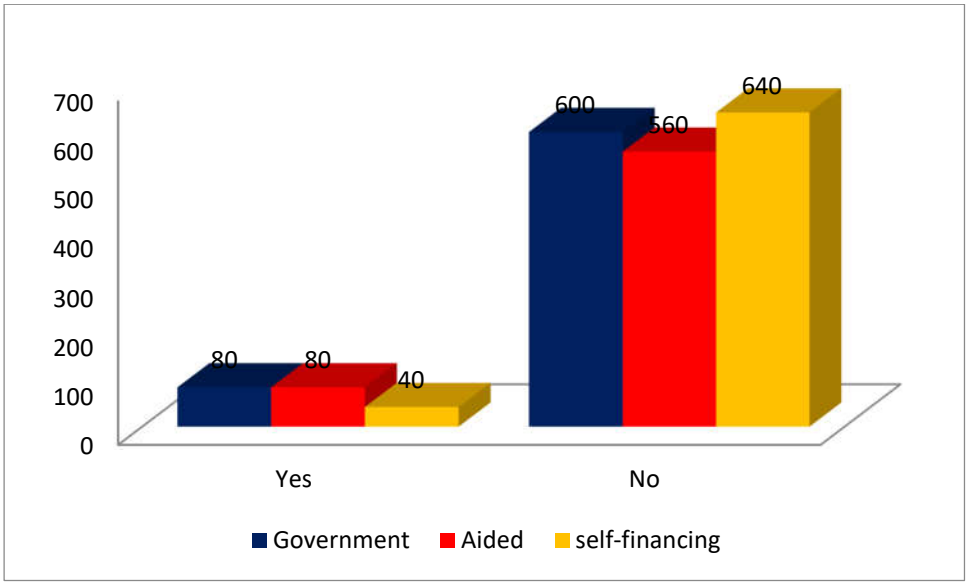

Figure 4.30 *"Have you ever seriously considered attempting suicide for the past 12 months?" among government, aided and self-financing students*

Table 4.51

Analysis on the question "How many close friends do you have?" among rural and urban area students

		0	1	2	3 or more	Total	Chi-square & P value
	Count	92	106	142	660	1000	
Urban	**Expected Count**	95.0	102.5	151.0	651.5	1000.0	
	% Total	4.6%	5.3%	7.1%	33.0%	50.0%	
	Count	98	99	160	643	1000	**Chi-**
Rural	**Expected Count**	95.0	102.5	151.0	651.5	1000.0	**square=**
	% Total	4.9%	4.95%	8.0%	32.15%	50.0%	**1.641**
	Count	190	205	302	1303	2000	
Total	**Expected Count**	190.0	205.0	302.0	1303.0	2000.0	**P= 0.650**
	% Total	9.5%	10.25%	15.0%	65.0%	100.0%	

While making area wise comparison shows that 9.2% of urban area students and 9.8% of rural area students do not have any close friends. The study shows that, 10.6% of urban area students and 9.9% rural area students have only one close friend. Area wise comparison of number of close friends of the students shows that, 14.2% of urban area students and 16.0% of rural area students have two close friends. Further study shows that number of close friends of the students 66.0% of the urban area students and 64.3% of the rural area students have three or more close friends. The obtained value of Chi-Square is 1.64, which is significant at 0.05 levels of significance as the p-value obtained is 0.650.And comparatively urban area students have more friends than rural area students.

The graphical representation to the responses to how many close friends do you have among male and female students are presented in Figure 4.31.

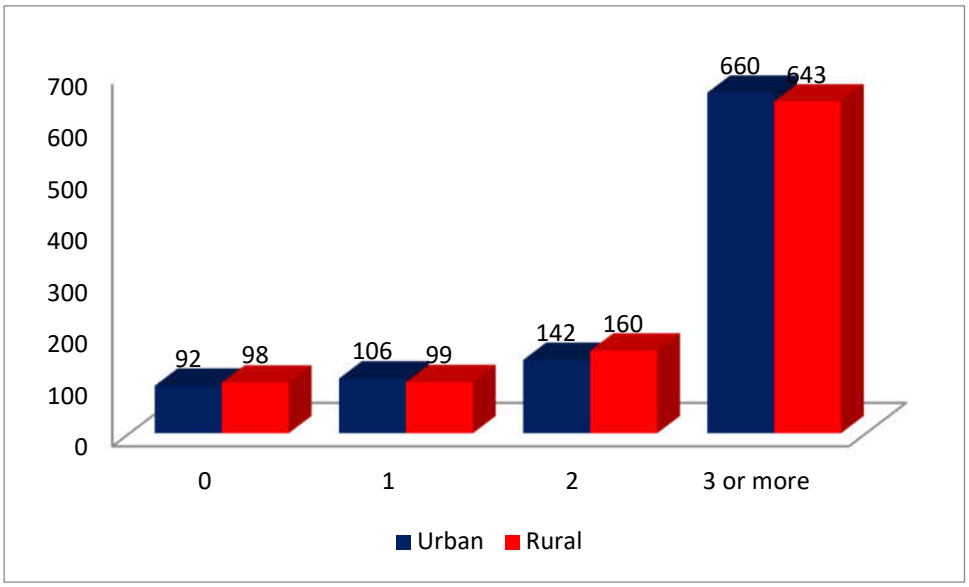

Figure 4.31"*How many close friends do you have?" among rural and urban area students*

Table 4.52

Analysis on the question "How many close friends do you have?" among male and female students

		0	1	2	3 or more	Total	Chi-square & p-value
Male	**Count**	98	113	197	592	1000	Chi-square=46.64 p= 0.000
	Expected Count	100.5	102.5	147.0	650.0	1000.0	
	% Total	4.9%	5.65%	9.85%	29.6%	50.0%	
Female	**Count**	103	92	97	708	1000	
	Expected Count	100.5	102.5	147.0	650.0	1000.0	
	% Total	5.15%	4.6%	4.85%	35.4%	50.0%	
Total	**Count**	201	205	294	1300	2000	
	Expected Count	201.0	205.0	294.0	1300.0	2000.0	
	% Total	10.05%	10.25%	14.7%	65.0%	100.0%	

As shown in Table 4.52,4.9% male students and 5.15% female students had no friends, 5.65%% male students and 4.6% female students had one friend, 9.85% male students and 4.85%% female students had two friends, 29.6%% male students and 35.4%% female students had three or more friends. The obtained Chi square for the group was 46.64 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many close friends do you have?"It was noted that the response pattern of the male and female on the issue "How many close friends do you have?" were different. Male was disproportionately associated with the response of two friends, female was disproportionately associated with the response three or more friends.

The graphical representation to the responses to how many close friends do you have among male and female students are presented in Figure 4.32.

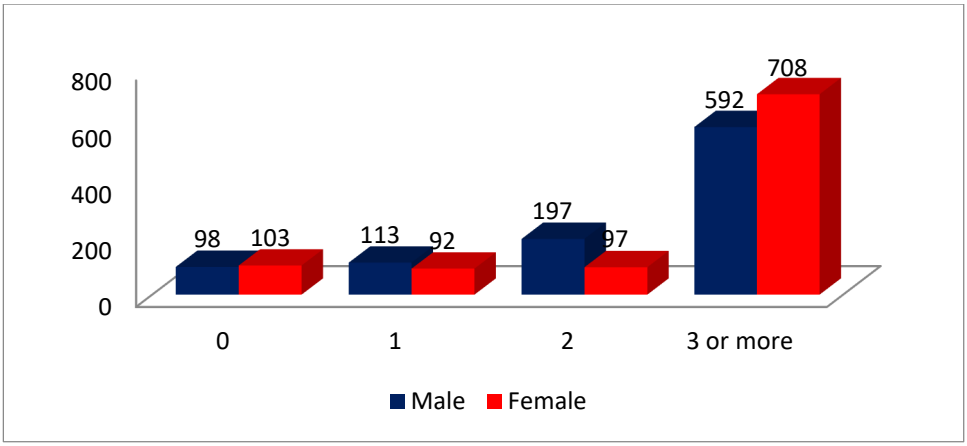

Figure 4.32 *"How many close friends do you have?" among male and female students*

Table 4.53

Analysis on the question "How many close friends do you have?" among government, aided and self-financing students

Category		0	1	2	3 or more	Total	Chi-square & p-value
Government	**Count**	81	76	107	416	680	Chi- square = 5.72, p= 0.328
	Expected Count	70.38	68.68	107.1	433.84	680	
	% of Total	4.05%	3.80%	5.35%	20.80%	34%	
Aided	**Count**	62	58	96	424	640	
	Expected Count	66.24	64.64	100.8	408.32	640	
	% of Total	3.10%	2.90%	4.80%	21.20%	32%	
Self-financing	**Count**	62	68	112	436	680	
	Expected Count	70.38	68.68	107.1	433.84	680	
	% of Total	3.10%	3.40%	5.60%	21.65%	34%	
Total	**Count**	207	202	315	1276	2000	
	Expected Count	207	202	315	1276	2000	
	% of Total	10.35%	10.10%	15.75%	63.80%	100%	

As shown in Table 4.53,4.05% government, 9.4% aided, 8.8% self-financing students had no close friends. 8.8% government, 9.4% aided, 11.8% self-financing students had one close friend. 14.7% government, 15.6% aided, 14.7% self-financing students had two close friends. 64.7% government, 65.6% aided, 64.7% self-financing students had three or more close friends. The obtained Chi-square for the group was 6.919 which was not significant at 0.05 level of significance, as the obtained p-value 0.328 that was greater than 0.05 level. Thus, it may not be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "How many close friends do you have?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many close friends do you have?" were same.

The graphical representation to the responses to how many close friends do you have among government, aided and self-financing students are presented in Figure 4.33.

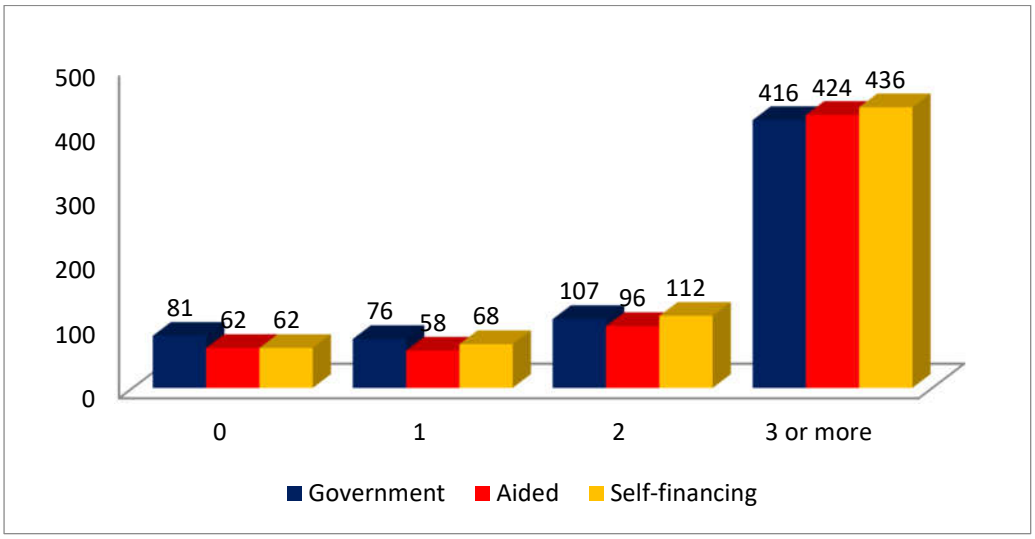

Figure 4.33 *"How many close friends do you have?" among government, aided and self-financing students*

DESCRIPTIVE PROFILES OF TOBACCO USE

The descriptive profiles of Tobacco use such as age, gender, height and weight of male and female students are presented in table 4.54, government, aided and self-financing engineering college students in table 4.55, of rural and urban Engineering students in table 4.56 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.57.

Table 4.54

The descriptive profiles on Tobacco use of Male and Female Engineering Students Engineering students

Descriptive		Male						Female					
		Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22
N	Valid	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.60	2.00	2.00	1.60	1.44	2.00	1.10	1.00	1.00	1.00	1.10	1.60
Std. Error of Mean		.032	.045	.045	.032	.028	.040	.009	0.000	0.000	0.000	.009	.038
Median		1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		1.02	1.41	1.41	1.02	.90	1.27	.30	.00	.00	.00	.30	1.20
Variance		1.04	2.00	2.00	1.04	.81	1.60	.09	.00	.00	.00	.09	1.44
Skewness		1.43	1.06	1.06	1.43	2.17	1.19	2.67				2.71	2.20
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		.52	-.40	-.40	.52	4.26	.45	5.14				5.35	3.51
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		3	4	4	3	4	4	1	0	0	0	1	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	5	5	4	5	5	2	1	1	1	2	5
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	1.00
	75	2.00	3.00	3.00	2.00	1.00	3.00	1.00	1.00	1.00	1.00	1.00	2.00

Question number 17,18,19,20,21& 22 shown in Appendix II

Table 4.55

The descriptive profiles on Tobacco use of Urban and Rural engineering students

Descriptive		Urban						Rural					
		Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.42	1.60	1.60	1.36	1.32	1.96	1.28	1.40	1.40	1.24	1.22	1.64
Std. Error of Mean		0.03	0.04	0.04	0.03	0.02	0.04	0.02	0.03	0.03	0.02	0.02	0.04
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.85	1.20	1.20	.84	.76	1.31	.72	1.02	1.02	.71	.61	1.16
Variance		.72	1.44	1.44	.71	.58	1.72	.52	1.04	1.04	.50	.37	1.35
Skewness		2.01	1.85	1.85	2.25	2.95	1.35	2.71	2.54	2.54	2.99	3.04	1.96
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		2.88	2.00	2.00	3.71	9.58	.68	6.47	5.20	5.20	7.83	8.94	2.83
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		3	4	4	3	4	4	3	4	4	3	3	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	5	5	4	5	5	4	5	5	4	4	5
Percentiles	**25**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00

Question number 17,18,19,20,21& 22 shown in Appendix II

Table 4.56

The descriptive profiles on Tobacco use of government, aided and self-financing engineering students

Descriptive		Government						Aided						Un aided					
		Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22
N	Valid	680	680	680	680	680	680	640	640	640	640	640	640	680	680	680	680	680	680
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.38	1.56	1.56	1.32	1.35	1.85	1.25	1.47	1.47	1.22	1.12	1.63	1.41	1.47	1.47	1.35	1.32	1.91
Std. Error of Mean		.032	.046	.046	.032	.032	.050	.026	.044	.044	.026	.016	.043	.032	.040	.040	.032	.027	.050
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.84	1.19	1.19	.83	.84	1.31	.66	1.12	1.12	.65	.41	1.08	.84	1.04	1.04	.84	.72	1.32
Variance		.71	1.43	1.43	.69	.70	1.72	.44	1.25	1.25	.42	.17	1.17	.71	1.07	1.07	.70	.51	1.73
Skewness		2.16	1.94	1.94	2.43	2.90	1.53	2.92	2.37	2.37	3.19	3.49	1.97	2.04	2.15	2.15	2.29	2.32	1.41
Std. Error of Skewness		.09	.09	.09	.09	.09	.09	.10	.10	.10	.10	.10	.10	.09	.09	.09	.09	.09	.09
Kurtosis		3.43	2.29	2.29	4.40	8.71	1.10	8.11	4.23	4.23	9.56	11.64	3.26	3.03	3.41	3.41	3.88	4.67	.79
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		3	4	4	3	4	4	3	4	4	3	2	4	3	4	4	3	3	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	5	5	4	5	5	4	5	5	4	3	5	4	5	5	4	4	5
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00

Question number 17,18,19,20,21& 22 shown in Appendix II

Table 4.57

The descriptive profiles on Tobacco use of Electronics and Communication, mechanical and computer science

Descriptive		Electronics and Communication						Mechanical						Computer Science					
		Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22	Q17	Q18	Q19	Q20	Q21	Q22
N	Valid	640	640	640	640	640	640	760	760	760	760	760	760	600	600	600	600	600	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.25	1.34	1.34	1.22	1.13	1.59	1.50	1.63	1.63	1.42	1.39	2.05	1.27	1.50	1.50	1.23	1.27	1.70
Std. Error of Mean		.026	.036	.036	.026	.016	.043	.034	.044	.044	.034	.027	.052	.028	.047	.047	.027	.033	.045
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		0.66	0.92	0.92	0.65	0.41	1.09	0.94	1.22	1.22	0.94	0.74	1.43	0.68	1.15	1.15	0.67	0.81	1.10
Variance		0.44	0.85	0.85	0.42	0.17	1.18	0.88	1.50	1.50	0.88	0.55	2.05	0.46	1.32	1.32	0.45	0.66	1.21
Skewness		2.92	2.86	2.86	3.19	3.46	2.03	1.72	1.68	1.68	1.97	1.91	1.20	2.80	2.26	2.26	3.06	3.57	1.82
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	.100	.100	.100	.100	.100	.100
Kurtosis		8.11	7.29	7.29	9.56	11.42	3.42	1.57	1.33	1.33	2.26	2.83	0.02	7.34	3.69	3.69	8.68	12.62	2.73
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	.199	.199	.199	.199	.199	.199
Range		3	4	4	3	2	4	3	4	4	3	3	4	3	4	4	3	4	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	5	5	4	3	5	4	5	5	4	4	5	4	5	5	4	5	5
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	2.00	3.00	1.00	1.00	1.00	1.00	1.00	2.00

Question number 17,18,19,20,21& 22 shown in Appendix II, page number

Table 4.58

Analysis on the question "What was your age when you first tried a cigarette?" among urban and rural area students

		Never smoked	16 or younger	17 to 18 years old	19 to 20 years old	Total	Chi-square & p-value
	Count	843	77	42	38	1000	
Urban	**Expected Count**	804.0	96.0	52.0	48.0	1000.0	
	% Total	42.15%	3.85%	2.1%	1.9%	50.0%	
	Count	765	115	62	58	1000	
Rural	**Expected Count**	804.0	96.0	52.0	48.0	1000.0	Chi- square= 19.32,
	% Total	38.25%	65.75%	3.1%	2.9%	50.0%	
	Count	1608	192	104	96	2000	p= 0.000
Total	**Expected Count**	1608.0	192.0	104.0	96.0	2000.0	
	% Total	80.4%	9.6%	5.2%	4.8%	100.0%	

While making area wise comparison it is found that 84.0% of urban area students and 76.0% of rural area students have never smoked cigarette. 8.0% of urban area students and 12.0% of rural area students have first tried a cigarette at their age of 16 years or younger. 4.0% of urban area students and 5.0% of rural area students first tried a cigarette at the age of 17 to 18 years old. The area wise analysis of data shows that 4.0% of urban area students and 6.0% of rural area students first tried their cigarette at the age of 19 to 20 years old. The obtained value of Chi-Square is 22.000, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant difference between Area and response; that is, both urban and rural have not equally the age when they tried cigarette. Comparison of the age of first tried cigarettes shows that rural area students are most likely to have cigarette than urban area students.

The graphical representation to the responses to what was your age when you first tried a cigarette among urban and rural area students is presented in Figure 34..

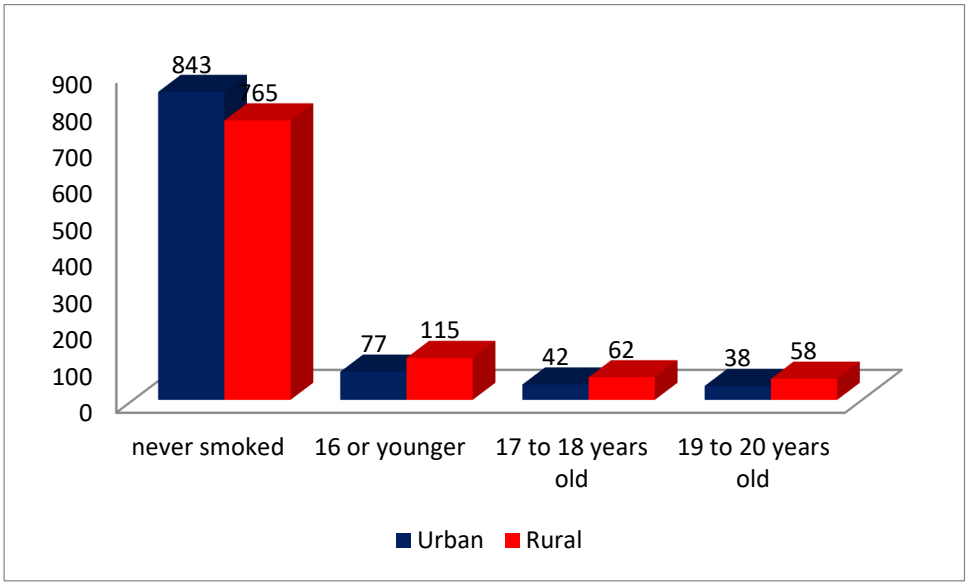

Figure 4.34 *"What was your age when you first tried a cigarette?" among urban and rural area students*

Table 4.59

Analysis on the question "What was your age when you first tried a cigarette?" among urban and rural area students

		Never smoke	16 year or younger	17 to 18 years	19 to 20 years	Total	Chi-square & p-value
Male	**Count**	711	97	106	86	1000	Chi-square=215.83 p= 0.000
	Expected Count	809.0	95.0	53.0	43.0	1000.0	
	% Total	35.55%	4.85%	5.3%	4.3%	50.0%	
Female	**Count**	907	93	0	0	1000	
	Expected Count	809.0	95.0	53.0	43.0	1000.0	
	% Total	45.35%	4.65%	.0%	.0%	50.0%	
Total	**Count**	1618	190	106	86	2000	
	Expected Count	1618.0	190.0	106.0	86.0	2000.0	
	% Total	80.9%	9.5%	5.3%	4.3%	100.0%	

As shown in Table 59, 35.55% male and 45.35% female never smoked a cigarette even once, 4.85% male and 4.65% female tried first cigarette at the age of 16 years or early, 5.3% male tried first cigarette at the age of 17 to 18 years and 4.3% of male tried it between 19 to 20 years of age. The obtained Chi-square for this group was 215.83 which was significant at 0.05 level of significance, as the obtained p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "What was your age when you first tried a cigarette?" It was noted that the response pattern of the male and female students on the issue "What was your age when you first tried a cigarette?" were different. Male was disproportionately associated with the response of 17 to 18 years and 19 to 20 years, female was disproportionately associated with the response of never smoked a cigarette.

The graphical representation to the responses to what was your age when you first tried a cigarette among male and female students is presented in Figure 35.

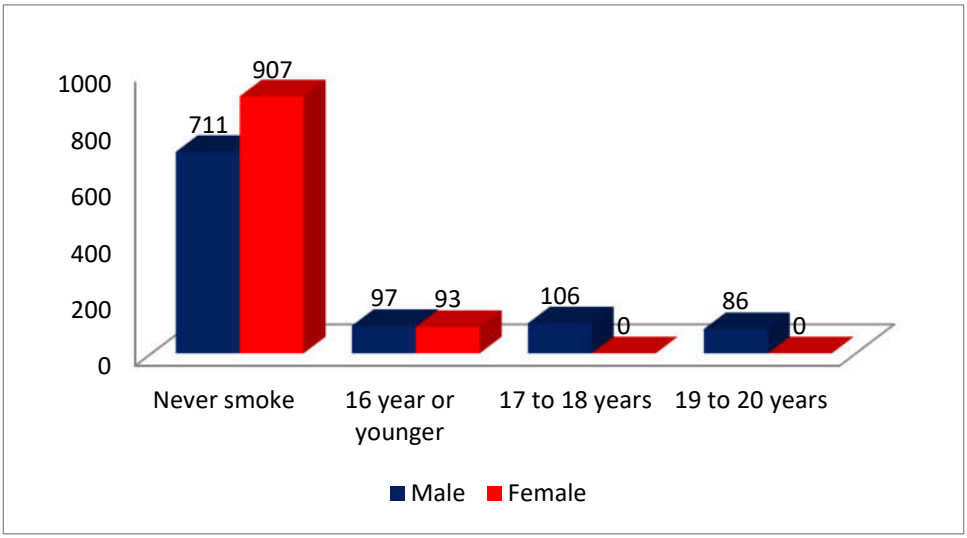

Figure 4.35 *"What was your age when you first tried a cigarette?" among male and female students*

Table 4.60

Analysis on the question "What was your age when you first tried a cigarette?" among government, aided and self-financing students

Category		Never Smoked a Cigarette	16 Years old or Younger	17 t0 18 Years old	19 to 20 Years old	Total	Chi-square &p-value
Government	**Count**	540	60	40	40	680	Chi-square = 19.164, p= 0.004
	Expected Count	544.0	68.0	34.0	34.0	680.0	
	% of Total	27.0%	3.0%	2.0%	2.0%	34.0%	
Aided	**Count**	540	60	20	20	640	
	Expected Count	512.0	64.0	32.0	32.0	640.0	
	% of Total	27.0%	3.0%	1.0%	1.0%	32.0%	
Self-financing	**Count**	520	80	40	40	680	
	Expected Count	544.0	68.0	34.0	34.0	680.0	
	% of Total	26.0%	4.0%	2.0%	2.0%	34.0%	
Total	**Count**	1600	200	100	100	2000	
	Expected Count	1600.0	200.0	100.0	100.0	2000.0	
	% of Total	80.0%	10.0%	5.0%	5.0%	100.0%	

As shown in Table 60, 79.4% government, 84.4% aided, 76.5% self-financing students never smoked a cigarette. 8.8% government, 9.4% aided, 11.8% self-financing students tried a cigarette at 16 years or before. 5.9% government, 3.1% aided, 5.9% self-financing students tried at 17 to 18 years. 5.9% government, 3.1% aided, 5.9% self-financing students tried a first cigarette at 19 to 20 years. The obtained Chi-square for the group was 19.164 which was significant at 0.05 level of significance, as the obtained p-value 0.004 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "What was your age when you first tried a cigarette?" It was noted that the response pattern of the government, aided and self-financing college students on the issue "What was your age when you first tried a cigarette?" were different. Government college students were disproportionately associated with the response of 17 to 18 years and 19 to 20 years. Aided college students were disproportionately associated with the response of never smoked a cigarette. Self-financing college students were disproportionately associated with the response of 16 years and before, 17 to 18 years, 19 to 20 years.

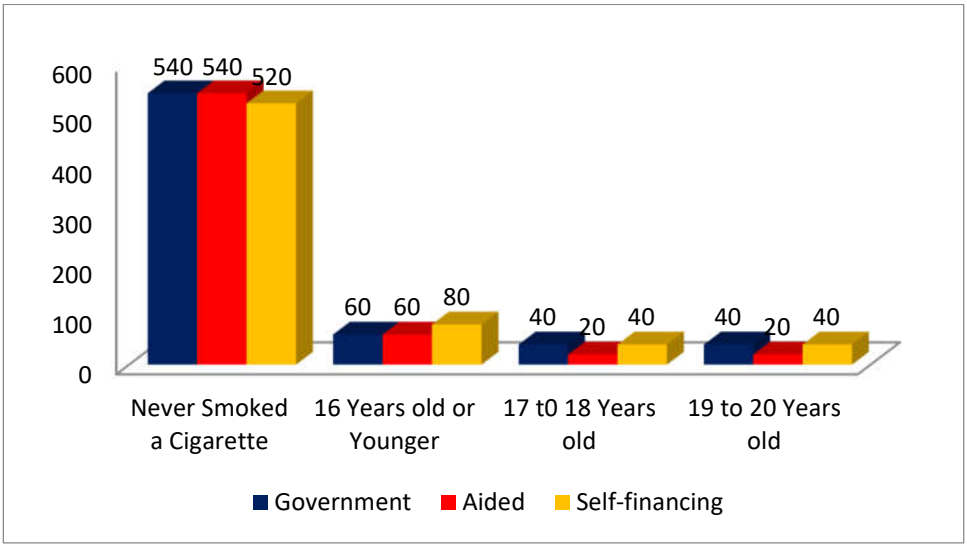

Figure 4.36 *"What was your age when you first tried a cigarette?" among government, aided and self-financing students*

Table 4.61

Analysis on the question "How many days have you smoked cigarettes during the past 30 days?" among urban and rural area students

		0 days	1 to 2 days	3 to 15 days	16 to 29 days	All days	Total	Chi-square & p-value
Urban	**Count**	832	44	49	38	37	1000	Chi-Square= 12.31, p= 0.000
	Expected Count	795.0	53.0	52.5	49.5	50.0	1000.0	
	% Total	41.6%	2.2%	2.45%	1.9%	1.85%	50.0%	
Rural	**Count**	758	62	56	61	63	1000	
	Expected Count	795.0	53.0	52.5	49.5	50.0	1000.0	
	% Total	37.9%	3.1%	2.8%	3.05%	3.15%	50.0%	
Total	**Count**	1590	106	105	99	100	2000	
	Expected Count	1590.0	106.0	105.0	99.0	100.0	2000.0	
	% Total	79.5%	5.3%	5.25%	4.95%	5.0%	100.0%	

The area wise comparison of data shows that 84.0% of urban area students and 76.0% of rural area students have never smoked cigarettes during last 30 days. The data shows that 4.0% of urban area students and 6.0% of rural area students have smoked cigarette during past 1 to 2 days. 4.0% of urban area students and 6.0% of rural area students have smoked cigarette during the past 3 to 15 days. 4.0% of urban area students and 6.0% of rural area students have smoked cigarette during the last past 16 to 29 days. 4.0% of urban area students and 6.0% rural area students have smoked cigarette all days.The obtained value of Chi-Square is 20.000, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally smoke cigarette for past 30 days. Comparison of the frequency of smoking cigarettes daily during the past 30 days shows that nobody rural students are tried cigarette than urban students.

The graphical representation to the responses to what was your age when you first tried a cigarette among urban and rural area students is presented in Figure 4.37.

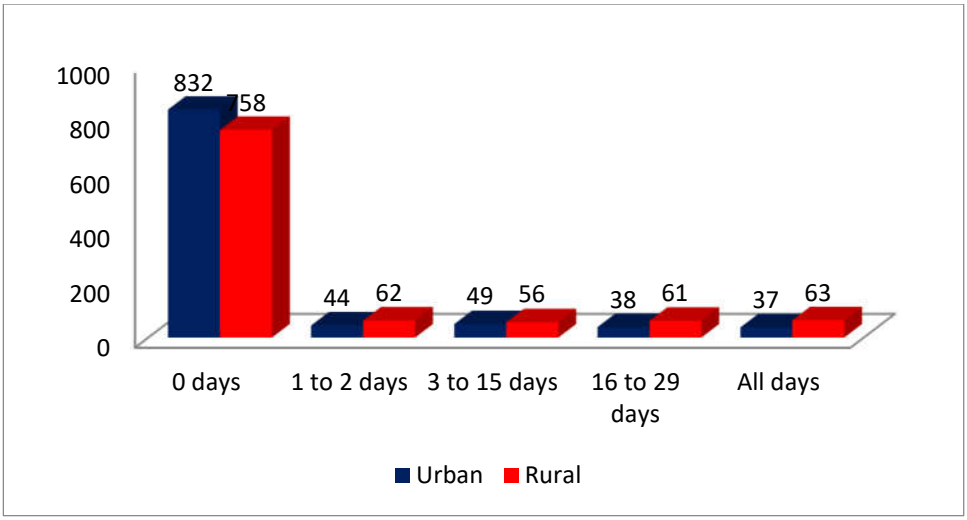

Figure 4.37*"How many days have you smoked cigarettes during the past 30 days?" among urban and rural area students*

Table 4.62

Analysis on the question "How many days have you smoked cigarettes during the past 30 days?" among male and female students

		0 day	1 or 2 days	3 to 15 days	16 to 29 days	All days	Total	Chi-square & p-value
Male	**Count**	597	106	93	99	105	1000	
	Expected Count	797.0	54.0	47.0	49.5	52.5	1000.0	
	% Total	29.85%	5.3%	4.65%	4.95%	5.25%	50.0%	
Female	**Count**	997	2	1	0	0	1000	Chi-square=389.57
	Expected Count	797.0	54.0	47.0	49.5	52.5	1000.0	
	% Total	49.85%	0.1%	0.05%	.0%	.0%	50.0%	p= 0.000
Total	**Count**	1594	108	94	99	105	2000	
	Expected Count	1594.0	108.0	94.0	99.0	105.0	2000.0	
	% Total	79.7%	5.4%	4.7%	4.95%	5.25%	100.0%	

As shown in Table 62, 29.85% male students and 49.85% female students never smoked in the past 30 days. 5.3% male students and 0.1% female students smoked one or two days, 4.65% male students and 0.05%

female students smoked three to 15 days, 4.95% male students smoked 16 days to 29 days and 5.25% male students smoked all the days. The obtained Chi -square for this group was 389.57 which was significant at 0.05 level of significance, as the p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many days have you smoked cigarettes during the past 30 days?" It was noted that the response pattern of the male and female students on the issue "How many days have you smoked cigarettes during the past 30 days?" were different. Male students was disproportionately associated with the response of one to two days, three to 15 days, 16 to 29 days, and all the days during the past 30 days, female students were disproportionately associated with the response of never smoked.

The graphical representation to the responses to what was your age when you first tried a cigarette among urban and rural area students is presented in Figure 4.38.

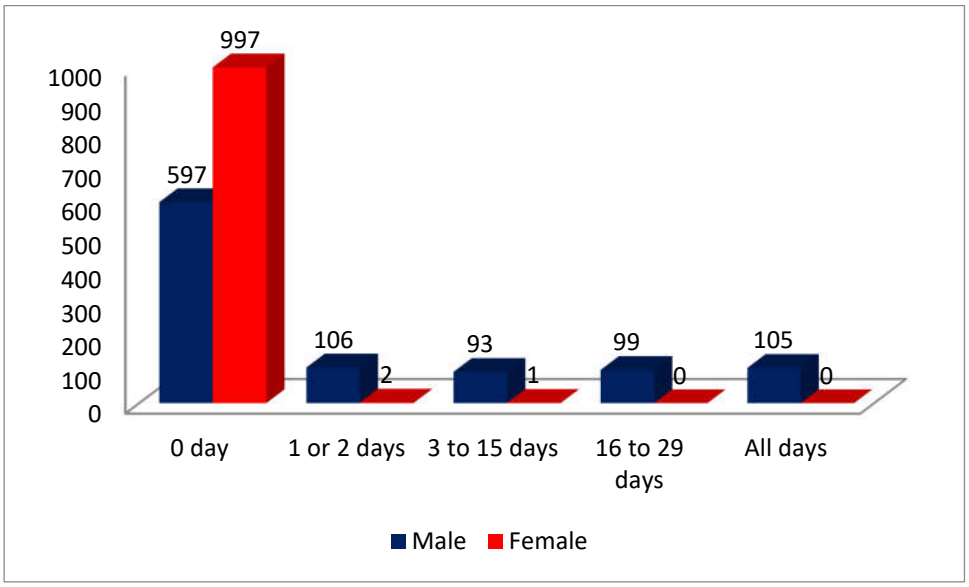

Figure 4.38 *"How many days have you smoked cigarettes during the past 30 days?" among male and female students*

Table 4.63

Analysis on the question "How many days have you smoked cigarettes during the past 30 days?" among government, aided and self-financing students

Category		0 days	1 or 2 days	3 to 15 days	16 to 29 days	All days	Total	Chi-square &p-value
Government	Count	540	20	40	40	40	680	Chi-square = 31.066, p = .000
	Expected Count	544.0	34.0	34.0	34.0	34.0	680.0	
	% of Total	27.0%	1.0%	2.0%	2.0%	2.0%	34.0%	
Aided	Count	520	40	20	20	40	640	
	Expected Count	512.0	32.0	32.0	32.0	32.0	640.0	
	% of Total	26.0%	2.0%	1.0%	1.0%	2.0%	32.0%	
Self-financing	Count	540	40	40	40	20	680	
	Expected Count	544.0	34.0	34.0	34.0	34.0	680.0	
	% of Total	27.0%	2.0%	2.0%	2.0%	1.0%	34.0%	
Total	Count	1600	100	100	100	100	2000	
	Expected Count	1600.0	100.0	100.0	100.0	100.0	2000.0	
	% of Total	80.0%	5.0%	5.0%	5.0%	5.0%	100.0%	

As shown in Table 63, 79.4% government, 81.3% aided, 79.4% self-financing students never smoked cigarette for the past 30 days. 2.9% government, 6.3% aided, 5.9% self-financing students smoke one or two days. 5.9% government, 3.1% aided, 5.9% self-financing students smoked three to 15 days. 5.9% government, 3.1% aided, 5.9% self-financing students smoked 16 to 29 days. 5.9% government, 6.3% aided, 2.9% self-financing students smoked all days for the past 30 days. The obtained Chi square for this group was 31.066, which was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be

rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How many days have you smoked cigarettes for the past 30 days?" It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many days have you smoked cigarettes for the past 30 days?" were different. Government college students were disproportionately associated with the response of three to 15 days, 16 to 19 days and all days. Aided college students were disproportionately associated with the response of zero day, one or two days and all days. Self-financing college students were disproportionately associated with the response of one or two days, three to 15 days and 16 to 29 days.

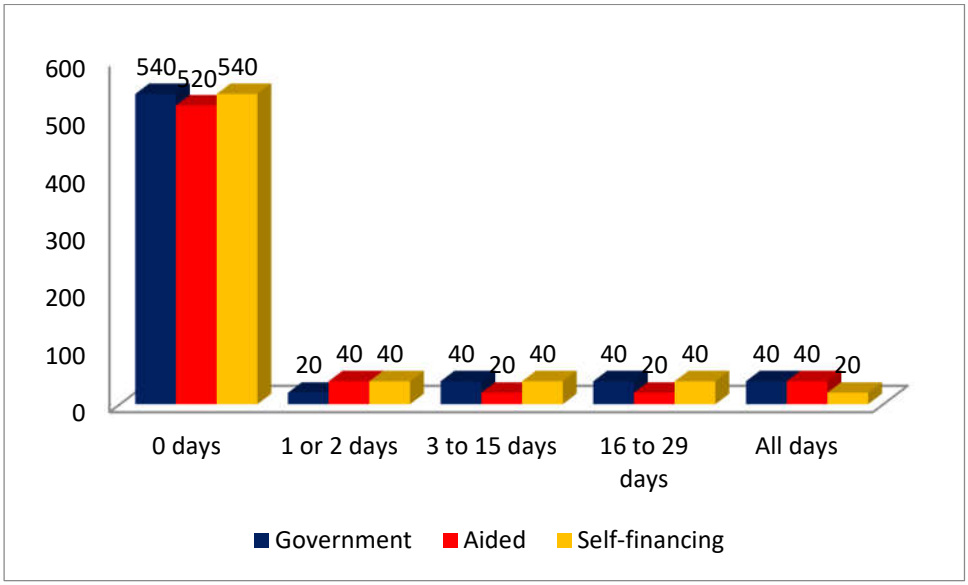

Figure 4.39 *How many days have you smoked cigarettes during the past 30 days?" among government, aided and self-financing students*

Table 4.64

Analysis on the "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?among urban and rural area students

		0 days	1 or 2 days	3 to 15 days	16 to 29 days	All days	Total	Chi-square & p-value
Urban	**Count**	840	39	36	45	40	1000	Chi-square= 20.000, p= 0.000
	Expected Count	800.0	50.0	50.0	50.0	50.0	1000.0	
	% Total	42.0%	2.0%	2.0%	2.0%	2.0%	50.0%	
Rural	**Count**	760	55	63	60	62	1000	
	Expected Count	800.0	50.0	50.0	50.0	50.0	1000.0	
	% Total	38.0%	3.0%	3.0%	3.0%	3.0%	50.0%	
Total	**Count**	1600	94	99	105	102	2000	
	Expected Count	1600.0	100.0	100.0	100.0	100.0	2000.0	
	% Total	80.0%	5.0%	5.0%	5.0%	5.0%	100.0%	

The study has conducted on drug usage of engineering students in Kerala shows that, 84.0% of urban students and 76.0% of rural students never tried any other form of tobacco such as gudga, hans or panparag during past 30 days. Area wise comparison of the usage of any form of tobacco 3.9% of urban area students and 5.5% of rural area students have used tobacco one or two days during past 30 days. 3.6% of urban students and 6.3% of rural students have used tobacco such as gudga, hand or panparag three to fifteen days during past 30 days. During past 30 days, 4.5% of urban area students and 6.0% of rural area students have used tobacco sixteen to twenty nine days. The data shows that 4.0% of urban area students and 6.2% of rural area students have used tobacco in all days.The obtained value of Chi-Square is 20.000, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural area students have not equally used tobacco during past 30 days and rural students are more likely to use tobacco than urban students.

The graphical representation to the responses to during the past 30 days, on how many days have you used any other form of tobacco such as gudga, hans or panparag among urban and rural area students are presented in Figure 4.40.

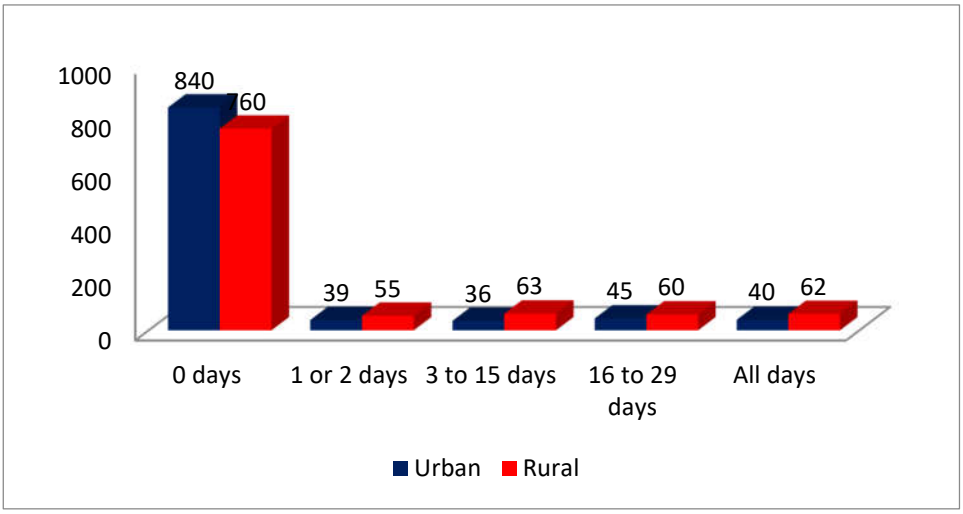

Figure 4.40: *"During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?among urban and rural area students*

Table 4.65

Analysis on the "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?among male and female students

		o day	1 or 2 days	3 to 15 days	16 to 29 days	All days	Total	Chi-square & p-value
Male	**Count**	607	97	89	108	99	1000	Chi-square=249.79 p= 0.000
	Expected Count	752.0	100.0	45.0	54.0	49.5	1000.0	
	% Total	30.35%	4.85%	4.45%	5.4%	4.95%	50.0%	
Female	**Count**	896	103	1	0	0	1000	
	Expected Count	752.0	100.0	45.0	54.0	49.5	1000.0	
	% Total	44.8%	5.15%	0.05%	.0%	.0%	50.0%	
Total	**Count**	1503	200	90	108	99	2000	
	Expected Count	1503.0	200.0	90.0	108.0	99.0	2000.0	
	% Total	75.15%	10.0%	4.5%	5.4%	4.95%	100.0%	

As shown in Table 65, 30.35% male and 44.8% female never used tobacco such as gudga, hans, panparag. 4.85% male students and 5.15% used tobacco for one or two days, 4.45% male students and 0.01% female students used tobacco for three to 15 days, 5.4% male students used tobacco for 16 to 29 days, 4.95% male students used tobacco in all the days during the past 30 days. The obtained Chi square for the group was 249.79 which was significant at 0.05 level of significance, as the obtained p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag? It was noted that the response pattern of the male and female students on the issue "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?,were different. Male was disproportionately associated with the response of one to two days, three to 15 days, 16 to 29 days, and all the days during the past 30 days, female was disproportionately associated with the response of never used tobacco.

The graphical representation to the responses to during the past 30 days, on how many days have you used any other form of tobacco such as gudga, hans or panparag among male and female students are presented in Figure 4.41.

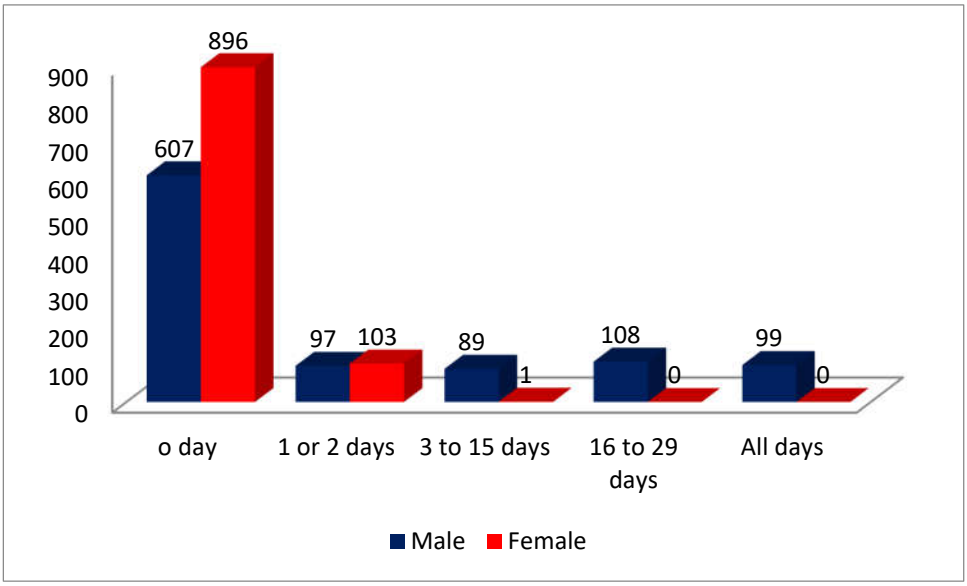

Figure 4.41 *"During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?among male and female students*

Table 4.66

Analysis on the "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag? among government, aided and self-financing students

Category		0 Days	1 0r 2 Days	3 to 15 Days	16 to 29 Days	All Days	Total	Chi-square &p-value
Government	Count	542	23	38	37	40	680	Chi-square = 19.70, p = .000
	Expected Count	540.26	38.42	32.3	32.98	36.04	680.0	
	% of Total	27.1%	1.15%	1.9%	1.85%	2.0%	34.0%	
Aided	Count	511	43	21	20	45	640	
	Expected Count	508.48	36.16	30.4	31.04	33.92	640.0	
	% of Total	25.55%	2.15%	1.05%	1.0%	2.25%	32.0%	
Self-financing	Count	536	47	36	40	21	680	
	Expected Count	540.26	38.42	32.3	32.98	36.04	680.0	
	% of Total	26.8%	2.35%	1.8%	2.0%	1.05%	34.0%	
Total	Count	1589	113	95	97	106	2000	
	Expected Count	1589.0	113.0	95.0	97.0	106.0	2000.0	
	% of Total	79.45%	5.65%	4.75%	4.85%	5.3%	100.0%	

As shown in Table 66, 79.4% government, 81.3% aided, 79.4% self-financing students didn't use tobacco for the past 30 days. 2.9% government, 6.3% aided, 5.9% self-financing used for one or two days. 5.9% government, 3.1% aided, 5.9% self-financing students used tobacco for three to 15 days. 5.9% government, 3.1% aided, 5.9% self-financing students used tobacco for 16 to 29 days. 5.9% government, 6.3% aided, 2.9% self-financing students used tobacco on all days during the past 30 days. The obtained Chi-square for this group was 31.066 which was significant at 0.05 level of significance, as the obtained p-value is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?" It was noted that the response pattern of the government, aided and self-financing college students on the issue "During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?" were different. Government college students were disproportionately associated with the response of three to 15 days, 16 to 29 days and all days. Aided college students were disproportionately associated with the response of zero day, one or two days and all days. self-financing college students were disproportionately associated with the response of one or two days, three to 15 days and 16 to 29 days.

The graphical representation to the responses to during the past 30 days, on how many days have you used any other form of tobacco such as gudga, hans or panparag among government, aided and self- financing students are presented in Figure 4.42.

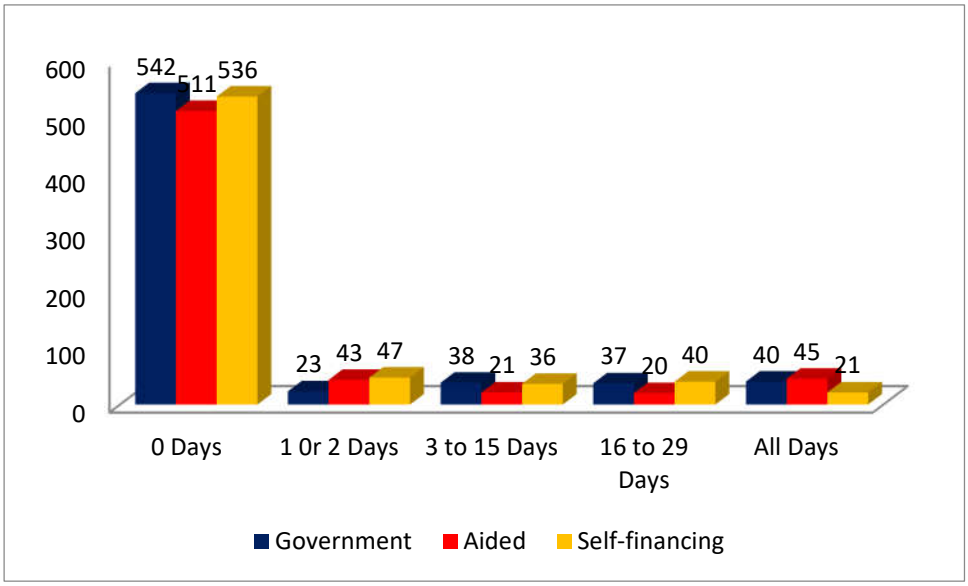

Figure 4.42*"During the past 30 days, on how many days have you used any other form of Tobacco such as Gudga, Hans, Panparag?among male and female students*

Table 4.67

Analysis on the question "Have you ever tried to stop smoking cigarettes during the past 12 months?"among urban and rural area students

		never smoked	I did not smoke cigarettes during the past 12 months	Yes	No	Total	Chi-square & p-value
Urban	**Count**	840	0	78	82	1000	Chi-square= 14.18, p= 0.003
	Expected Count	850.0	50.0	50.0	50.0	1000.0	
	% Total	44.0%	2.0%	2.0%	2.0%	50.0%	
Rural	**Count**	760	0	114	126	1000	
	Expected Count	850.0	50.0	50.0	50.0	1000.0	
	% Total	41.0%	3.0%	3.0%	3.0%	50.0%	
Total	**Count**	1600	0	192	208	2000	
	Expected Count	1700.0	.0	100.0	100.0	2000.0	
	% Total	85.0%	5.0%	5.0%	5.0%	100.0%	

The area wise comparison of ever tried to stop smoking cigarettes shows that, 84.0% of urban engineering college students and 76.0% of rural engineering students in Kerala never smoked cigarettes. The analysis of data shows that, 0% of urban and rural engineering college students did not smoke during the last 12 months. Further the study shows that, 7.8% of urban engineering students and 11.4% of rural engineering students in Kerala have tried to stop smoking cigarettes during the last 12 months. 8.2% of urban engineering college students and 12.6% of rural engineering college students have not tried to stop smoking during the past 12 months. The value of Chi-Square obtained is 20.000, which is significant at 0.05 levels of significance as the p-value obtained is 0.003. That means there is statistically significant association between Area and response; that is, both urban and rural area students have not equally ever tried to smoke cigarette for past 12 months.

The graphical representation to the responses to have you ever tried to stop smoking cigarettes during the past 12 months among urban and rural area students are presented in Figure 4.43.

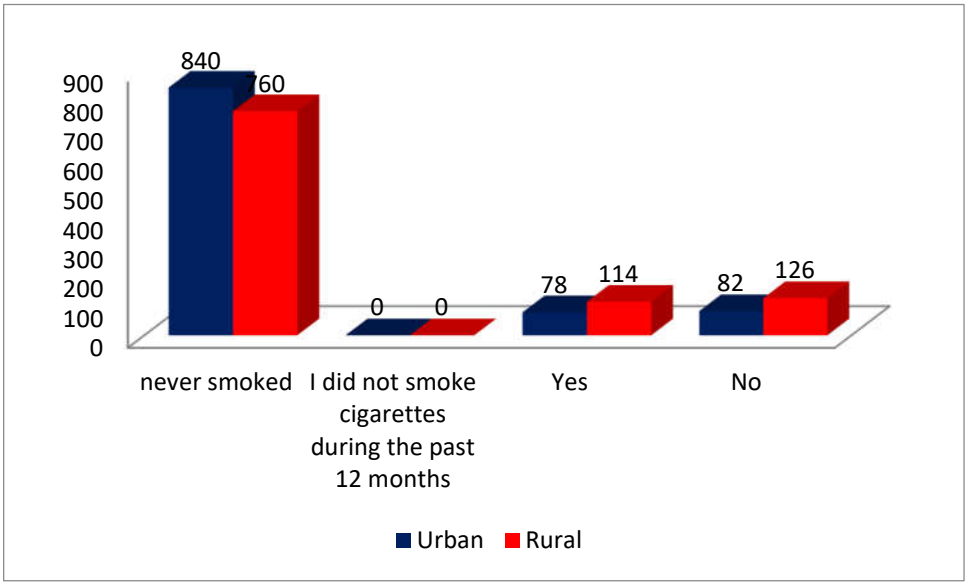

Figure 4.43: "Have you ever tried to stop smoking cigarettes during the past 12 months?"among urban and rural area students

Table 4.68
Analysis on the question "Have you ever tried to stop smoking cigarettes during the past 12 months?"among male and female students

		Never smoked	Past 12 months	Yes	No	Total	Chi-square & p-value
Male	**Count**	691	107	103	99	1000	Chi-square=327.09 p= 0.000
	Expected Count	839.0	59.5	52.0	49.5	1000.0	
	% Total	34.55%	5.35%	5.15%	4.95%	50.0%	
Female	**Count**	987	12	1	0	1000	
	Expected Count	839.0	59.5	52.0	49.5	1000.0	
	% Total	49.35%	0.6%	0.05%	.0%	50.0%	
Total	**Count**	1678	119	104	99	2000	
	Expected Count	1678.0	119.0	104.0	99.0	2000.0	
	% Total	83.9%	5.95%	5.2%	4.95%	100.0%	

As shown in Table 68, 34.55% male students and 49.35% female students never smoked, 5.35% male students and 0.6% female students didn't smoke in the past 12 months, 5.15% male students tried to stop smoking and 4.95% male students never tried to stop smoking cigarettes during the past 12 months. The obtained Chi square for this group was 327.09 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Have you ever tried to stop smoking cigarettes during the past 12 months?" It was noted that the response pattern of the male and female students on the issue "Have you ever tried to stop smoking cigarettes during the past 12 months?" were different. Male students were disproportionately associated with the response of didn't smoke in past 12 months, tried to stop and never tried to stop smoking, female students were disproportionately associated with the response of never smoked cigarettes.

The graphical representation to the responses to have you ever tried to stop smoking cigarettes during the past 12 months among male and female students are presented in Figure 4.44.

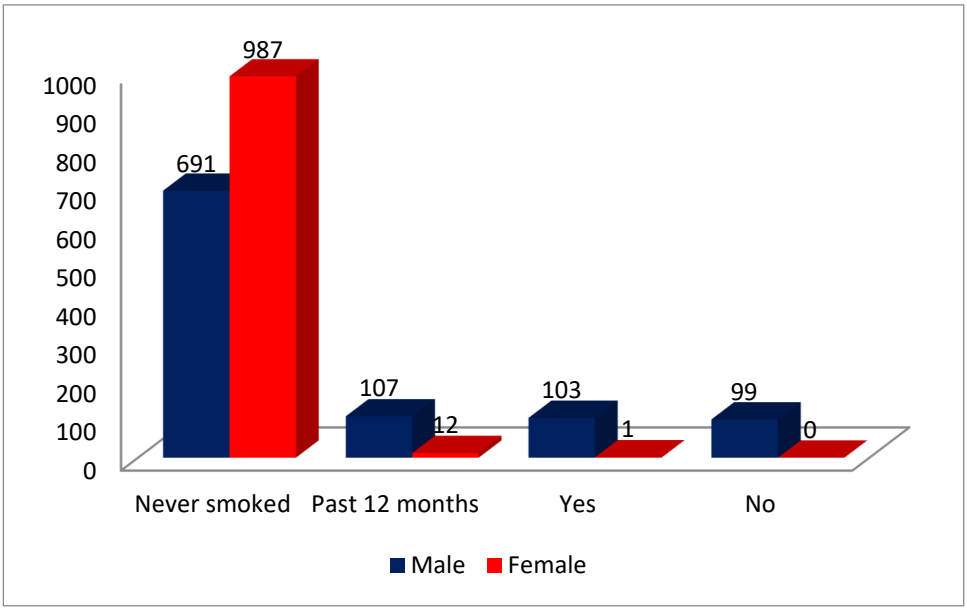

Figure 44: "Have you ever tried to stop smoking cigarettes during the past 12 months?"among male and female students

Table 4.69

Analysis on the question "Have you ever tried to stop smoking cigarettes during the past 12 months?"Among government, aided and self-financing students

Category		Never smoked	I did not smoke cigarettes during the past 12 months	Yes	No	Total	Chi-square & P value
Government	**Count**	467	44	71	98	680	Chi-square = 104.729, P = .000
	Expected Count	539.24	43.52	45.22	52.02	680.0	
	% of Total	23.35%	2.2%	3.55%	4.9%	34.0%	
Aided	**Count**	553	48	22	17	640	
	Expected Count	507.52	40.96	42.56	48.96	640.0	
	% of Total	27.65%	2.4%	1.1%	0.85%	32.0%	
Self-financing	**Count**	566	36	40	38	680	
	Expected Count	539.24	43.52	45.22	52.02	680.0	
	% of Total	28.3%	1.8%	2.0%	1.9%	34.0%	
Total	**Count**	1586	128	133	153	2000	
	Expected Count	1586.0	128.0	133.0	153.0	2000.0	
	% of Total	79.3%	6.4%	6.65%	7.65%	100.0%	

As shown in Table 69, 85.3% government, 87.5% aided, 82.4% self-financing students never smoked cigarette. 2.9% government, 6.3% aided, 5.9% self-financing students didn't smoke cigarette for the past 12 months. 5.9% government, 3.1% aided, 5.9% self-financing tried to stop smoking. 5.9% government, 3.1% aided, 5.9% self-financing never tried to stop smoking. The obtained Chi-square for this group was 104.729 which was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "Have you ever tried to stop smoking cigarettes during the past 12 months?" It was noted that the response pattern of the government, aided and self-financing college students on the issue "Have you ever tried to stop smoking cigarettes during the past 12 months?" were different. Government college students were disproportionately associated with the response of never smoked, 'yes' tried to stop smoking and 'no' didn't try to stop. Aided college students were disproportionately associated with the response of rarely, two and three times per day. Self-financing college students were disproportionately associated with the response of rarely, one time and two times per day.

The graphical representation to the responses to have you ever tried to stop smoking cigarettes during the past 12 months among government, aided and self-financing students are presented in Figure 4.45.

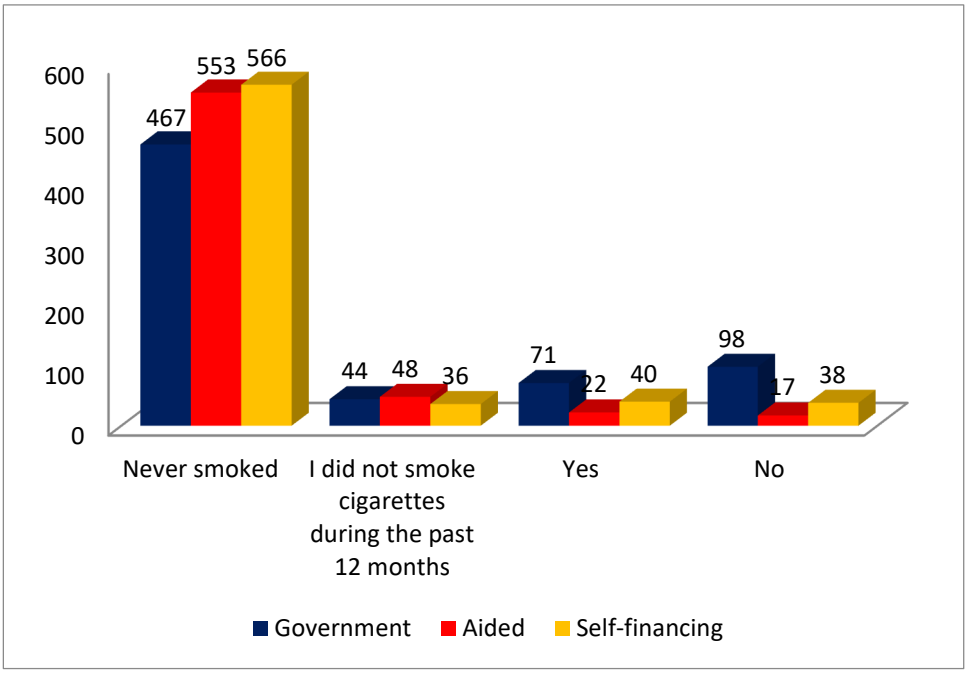

Figure 4.45: "Have you ever tried to stop smoking cigarettes during the past 12 months?"among government, aided and self-financing students

Table 4.70

Analysis on the question "Do your parents or guardian use any form of tobacco? "Among urban and rural area students

		Neither	My father or male guardian	My mother or female guardian	I do not know	Total	Chi-square & P value
Urban	**Count**	688	241	0	71	1000	
	Expected Count	604.5	303.5	0.0	92.0	1000.0	
	% Total	34.4%	12.05%	0%	3.55%	50.0%	
Rural	**Count**	521	366	0	113	1000	Chi-square= 53.333,
	Expected Count	604.5	303.5	0.0	92.0	1000.0	
	% Total	26.05%	18.3%	0%	5.65%	50.0%	
Total	**Count**	1209	607	00	184	2000	P= 0.000
	Expected Count	1209.0	607.0	0	184.0	2000.0	
	% Total	60.5%	30.35%	0%	9.2%	100.0%	

Area wise comparison of the usage of any form of tobacco by parents or guardian shows that 68.0% of parents or guardian of urban students and 52.0% of parents or guardian of rural students never used any form of tobacco. Area wise comparison of the usage of any form of tobacco by father or male guardian shows that 24.0%.of father or male guardian of urban students and, 36.0%.of father or male guardian of rural students have used any form of tobacco. Area wise comparison of the usage of any form of tobacco by mother or female guardian shows that mother or female guardian of urban and rural engineering college students haven't used any form of tobacco. Area wise comparison of the usage of any form of tobacco by parents or guardian shows that 8.0% of parents or guardian of urban engineering college students and 12.0% of parents or guardian of rural engineering college students don't know whether their parents or guardians used any form of tobacco. Parents or guardian of rural engineering college students are using tobacco more than urban area.

The obtained value of Chi-Square is 53.333, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally used tobacco by parents or guardian.

The graphical representation to the responses to "do your parents or guardian use any form of tobacco" among urban and rural students are presented in Figure 4.46.

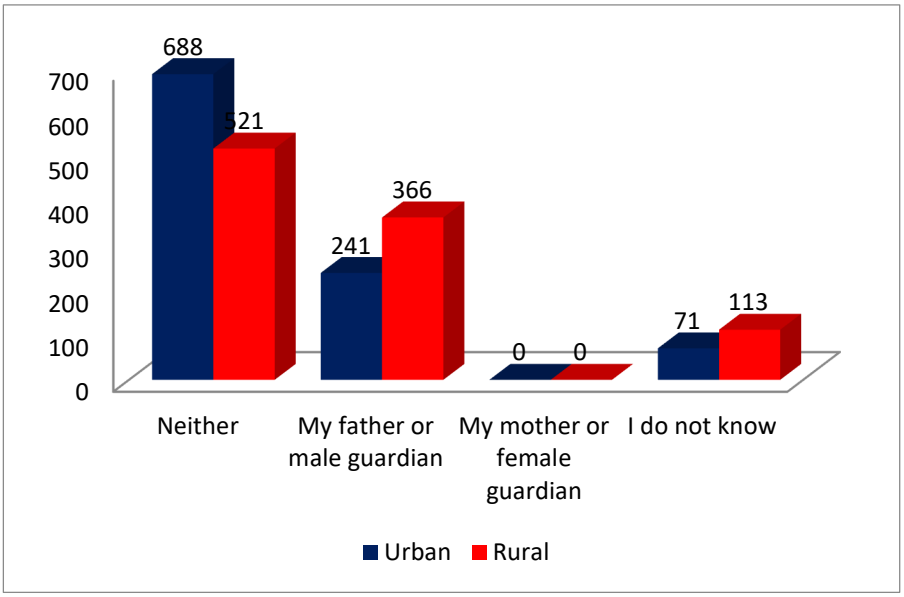

Figure 4.46*"Do your parents or guardian use any form of tobacco?"among urban and rural area students*

Table 4.71

Analysis on the question " Do your parents or guardian use any form of tobacco?"among male and female area students

		Neither	Father of Male guardian	Mother or Female guardian	Don't know	Total	Chi-square & P value
Male	**Count**	512	192	189	107	1000	Chi-square=209.84 P= 0.000
	Expected Count	624.0	178.0	98.5	99.5	1000.0	
	% Total	25.6%	9.6%	9.45%	5.35%	50.0%	
Female	**Count**	736	164	8	92	1000	
	Expected Count	624.0	178.0	98.5	99.5	1000.0	
	% Total	36.8%	8.2%	0.4%	4.6%	50.0%	
Total	**Count**	1248	356	197	199	2000	
	Expected Count	1248.0	356.0	197.0	199.0	2000.0	
	% Total	62.4%	17.8%	9.85%	9.95%	100.0%	

As shown in Table 71, 25.6% male students and 36.8% female students expressed neither parents nor guardians use tobacco. 9.6% male and 8.2% female students expressed that father or male guardian use tobacco. 9.45%

male students and 0.4% informed that mother or female guardian use tobacco. 5.35% male students and 4.6% female students don't know whether the parent and guardian use tobacco.

The obtained Chi-square for this group was 209.84 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Do your parents or guardian use any form of tobacco?"It was noted that the response pattern of the male and female on the issue "Do your parents or guardian use any form of tobacco?" were different. Male was disproportionately associated with the response of male or female guardian used tobacco, female was disproportionately associated with the response of neither parents nor guardians used tobacco.

The graphical representation to the responses to "do your parents or guardian use any form of tobacco" among male and female students are presented in Figure 4.47.

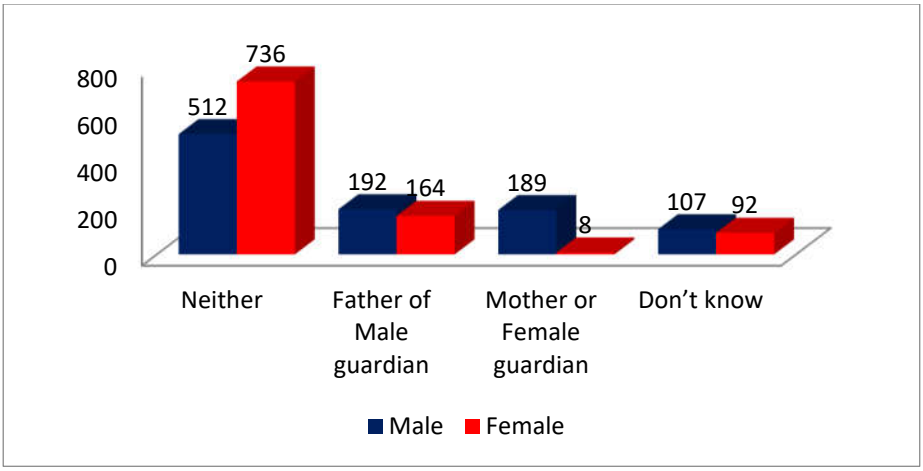

Figure 4.47*"Do your parents or guardian use any form of tobacco?"among male and female students*

Table 4.72

Analysis on the question "Do your parents or guardian use any type of tobacco?"among government, aided and self-financing students

Category		Neither	My father or Male guardian	My mother or female guardian	I don't know	Total	Chi-square & P value
Government	Count	401	145	58	76	680	Chi-square = 22.733, P = 0.001
	Expected Count	419.8	139.47	68.347	52.388	680.0	
	% of Total	20.05%	7.25%	2.9%	3.8%	34.0%	
Aided	Count	422	114	68	36	640	
	Expected Count	395.1	131.27	64.327	49.306	640.0	
	% of Total	21.1%	5.7%	3.4%	1.8%	32.0%	
Self-financing	Count	387	143	71	39	680	
	Expected Count	419.8	139.47	68.347	52.388	680.0	
	% of Total	19.35%	7.15%	3.55%	1.95%	34.0%	
Total	Count	1210	402	197	151	2000	
	Expected Count	1210.0	402.0	197.0	151.0	2000.0	
	% of Total	60.5%	20.1%	9.85%	7.55%	100.0%	

As shown in Table 72, 58.8% government, 65.6% aided, 55.9% Self-financing students reported that neither parent or guardian didn't use tobacco. 20.6% government, 18.8% aided, 20.6% Self-financing students told father or male guardian used tobacco. 8.8% government, 9.4% aided, 11.8% Self-financing students told mother or female guardian used tobacco. 11.8% government, 6.3% aided, 11.8% Self-financing students informed that they don't know.

The obtained Chi-square for this group was 22.733 which was significant at 0.05 level of significance, as the obtained p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college

and the response on the question of "Do your parents or guardian use any type of tobacco?" It was noted that the response pattern of the government, aided and Self-financing college students on the issue "Do your parents or guardian use any type of tobacco?" were different. Government college students were disproportionately associated with the response of father or male guardian and don't know. Aided college students were disproportionately associated with the response of neither parent or guardian. Self-financing college students were disproportionately associated with the response of father or male guardian, mother or female guardian and don't know.

The graphical representation to the responses to "do your parents or guardian use any form of tobacco" among government, aided and self-financing students are presented in Figure 4.48.

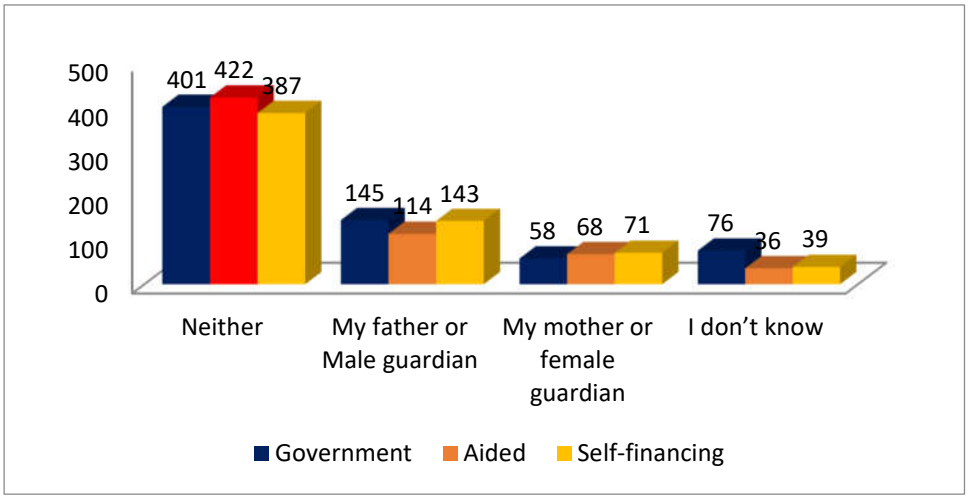

Figure 4.48: *"Do your parents or guardian use any form of tobacco?"among government, aided and self-financing students*

DESCRIPTIVE PROFILE OF ALCOHOL AND OTHER DRUG USE

The descriptive profiles of Alcohol and Other Drug Usesuch as age, gender, height and weight of male and female students are presented in table 4.73, government, aided and self-financing engineering college students in table 4.74, of rural and urban Engineering students in table 4.75 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.76.

Table 4.73

The descriptive profiles on Alcohol and other drugs use of male and female engineering students

Descriptive		Male												
		Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35
N	Valid	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.64	2.30	1.25	1.14	1.14	1.14	1.14	1.14	1.62	1.10	1.12	1.12	1.40
Std. Error of Mean		.033	.032	.019	.017	.017	.017	.017	.017	.015	.009	.012	.012	.021
Median		1.00	2.50	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
Mode		1	3	1	1	1	1	1	1	2	1	1	1	1
Std. Deviation		1.05	1.01	.60	.54	.54	.54	.54	.54	.49	.30	.38	.38	.66
Variance		1.11	1.01	.37	.29	.29	.29	.29	.29	.24	.09	.15	.15	.44
Skewness		1.79	-.04	2.33	4.25	4.25	4.25	4.25	4.25	-.49	2.67	3.35	3.35	1.40
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		2.47	-1.25	4.18	17.68	17.68	17.68	17.68	17.68	-1.77	5.14	11.12	11.12	.62
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		4	3	3	3	3	3	3	3	1	1	2	2	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	4	4	4	4	4	4	4	2	2	3	3	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	2.50	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
	75	2.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	2.00

Descriptive		Female												
		Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35
N	Valid	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.60	1.60	1.90	1.10	1.10	1.10
Std. Error of Mean		0.00	0.00	0.00	0.00	0.00	0.00	0.00	.032	.032	.030	.009	.009	.009
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1a	1	1	1
Std. Deviation		.00	.00	.00	.00	.00	.00	.00	1.02	1.02	.94	.30	.30	.30
Variance		.00	.00	.00	.00	.00	.00	.00	1.04	1.04	.89	.09	.09	.09
Skewness									1.43	1.43	.92	2.67	2.67	2.67
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis									.52	.52	-.02	5.14	5.14	5.14
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		0	0	0	0	0	0	0	3	3	3	1	1	1
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		1	1	1	1	1	1	1	4	4	4	2	2	2
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00
	75	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00

Question number 23,24,25,26,27,28,29,30,31,32,33,34&35 shown in Appendix II

Table 4.74

The descriptive profiles on Alcohol and other drug use of government, aided and self-financing engineering students

Descriptive		Government																Aided									
		Q 23	Q24	Q 25	Q 26	Q 27	Q 28	Q 29	Q30	Q31	Q32	Q33	Q34	Q 35	Q23	Q24	Q25	Q 26	Q 27	Q 28	Q 29	Q30	Q31	Q32	Q 33	Q 34	Q35
N	Valid	680	680	680	680	680	680	680	680	680	680	680	680	680	640	640	640	640	640	640	640	640	640	640	640	640	640
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.29	1.68	1.12	1.08	1.08	1.08	1.08	1.40	1.65	1.53	1.12	1.12	1.26	1.38	1.59	1.17	1.08	1.08	1.08	1.08	1.30	1.50	1.41	1.09	1.09	1.19
Std. Error of Mean		.027	.038	.015	.016	.016	.016	.016	.035	.032	.033	.012	.012	.021	.037	.035	.021	.017	.017	.017	.017	.030	.028	.028	.015	.015	.018
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.71	.99	.40	.42	.42	.42	.42	.90	.84	.85	.32	.32	.56	.93	.90	.53	.43	.43	.43	.43	.76	.71	.70	.38	.38	.46
Variance		.50	.99	.16	.17	.17	.17	.17	.81	.70	.72	.10	.10	.31	.86	.80	.28	.19	.19	.19	.19	.57	.50	.49	.15	.15	.22
Skewness		2.50	1.05	3.59	5.80	5.80	5.80	5.80	2.06	1.34	1.65	2.38	2.38	2.02	2.73	1.15	3.15	5.58	5.58	5.58	5.58	2.57	1.59	1.97	4.23	4.23	2.49
Std. Error of Skewness		.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
Kurtosis		5.40	-.43	12.42	34.53	34.53	34.53	34.53	2.74	1.30	1.91	3.67	3.67	2.98	6.71	-.10	8.72	31.61	31.61	31.61	31.61	5.61	2.77	3.94	17.09	17.09	5.56
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		3	3	2	3	3	3	3	3	3	3	1	1	2	4	3	3	3	3	3	3	3	3	3	2	2	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	4	3	4	4	4	4	4	4	4	2	2	3	5	4	4	4	4	4	4	4	4	4	3	3	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00

Descriptive		Self-financing												
		Q 23	Q24	Q 25	Q 26	Q 27	Q 28	Q 29	Q30	Q31	Q32	Q33	Q34	Q35
N	Valid	680	680	680	680	680	680	680	680	680	680	680	680	680
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.29	1.68	1.09	1.04	1.04	1.04	1.04	1.39	1.67	1.56	1.12	1.12	1.29
Std. Error of Mean		.030	.038	.015	.012	.012	.012	.012	.034	.032	.032	.012	.012	.022
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.79	.99	.39	.30	.30	.30	.30	.87	.83	.85	.32	.32	.57
Variance		.62	.99	.15	.09	.09	.09	.09	.76	.69	.72	.10	.10	.33
Skewness		3.42	1.05	4.43	7.98	7.98	7.98	7.98	2.09	1.30	1.56	2.38	2.38	1.81
Std. Error of Skewness		.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
Kurtosis		12.30	-.43	19.50	66.06	66.06	66.06	66.06	2.99	1.25	1.71	3.67	3.67	2.20
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		4	3	3	3	3	3	3	3	3	3	1	1	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	4	4	4	4	4	4	4	4	4	2	2	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00

Question number 23,24,25,26,27,28,29,30,31,32,33,34&35 shown in Appendix II

Table 4.75

The descriptive profiles on Alcohol and other drug use of Urban and Rural engineering students

Descriptive		Urban												
		Q23	**Q24**	**Q25**	**Q26**	**Q27**	**Q28**	**Q29**	**Q30**	**Q31**	**Q32**	**Q33**	**Q34**	**Q35**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.34	1.74	1.12	1.06	1.06	1.06	1.06	1.42	1.67	1.58	1.12	1.12	1.30
Std. Error of Mean		0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.03	0.03	0.03	0.01	0.01	0.02
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.82	1.02	.44	.38	.38	.38	.38	.90	.84	.85	.33	.33	.57
Variance		.67	1.03	.19	.15	.15	.15	.15	.81	.70	.72	.11	.11	.33
Skewness		2.85	.88	3.68	6.52	6.52	6.52	6.52	1.98	1.30	1.51	2.34	2.34	1.78
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		8.21	-.79	12.74	43.19	43.19	43.19	43.19	2.50	1.22	1.56	3.49	3.49	2.07
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		4	3	3	3	3	3	3	3	3	3	1	1	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	4	4	4	4	4	4	4	4	4	2	2	3
Percentiles	**25**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00

Descriptive		Rural												
		Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30	Q31	Q32	Q33	Q34	Q35
N	Valid	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.30	1.56	1.13	1.07	1.07	1.07	1.07	1.31	1.55	1.42	1.10	1.10	1.20
Std. Error of Mean		0.03	0.03	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.02
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		.81	.90	.45	.39	.39	.39	.39	.79	.75	.75	.36	.36	.49
Variance		.65	.81	.20	.16	.16	.16	.16	.62	.57	.56	.13	.13	.24
Skewness		3.07	1.31	3.70	6.01	6.01	6.01	6.01	2.50	1.51	1.98	3.85	3.85	2.45
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		9.29	.36	13.06	37.32	37.32	37.32	37.32	5.00	2.24	3.53	14.84	14.84	5.20
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		4	3	3	3	3	3	3	3	3	3	2	2	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	4	4	4	4	4	4	4	4	4	3	3	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00

Question number 23,24,25,26,27,28,29,30,31,32,33,34&35 shown in Appendix II

Table 4.76

The descriptive profiles on Alcohol and other drug use of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics and Communication												
		Q23	Q24	Q 25	Q 26	Q 27	Q 28	Q 29	Q30	Q31	Q32	Q 33	Q 34	Q35
N	**Valid**	640	640	640	640	640	640	640	640	640	640	640	640	0.10
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0.10
Mean		1.38	1.56	1.13	1.07	1.07	1.07	1.07	1.29	1.50	1.41	1.06	1.06	0.10
Std. Error of Mean		.037	.034	.018	.016	.016	.016	.016	.030	.028	.028	.010	.010	0.10
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.10
Mode		1	1	1	1	1	1	1	1	1	1	1	1	0.10
Std. Deviation		0.93	0.86	0.44	0.41	0.41	0.41	0.41	0.75	0.71	0.70	0.24	0.24	0.10
Variance		0.86	0.75	0.20	0.17	0.17	0.17	0.17	0.56	0.50	0.49	0.06	0.06	0.10
Skewness		2.73	1.26	3.59	5.98	5.98	5.98	5.98	2.63	1.59	1.97	3.62	3.62	0.10
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Kurtosis		6.71	0.32	13.12	36.15	36.15	36.15	36.15	5.92	2.78	3.94	11.16	11.16	0.10
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.10
Range		4	3	3	3	3	3	3	3	3	3	1	1	0.10
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	0.10
Maximum		5	4	4	4	4	4	4	4	4	4	2	2	0.10
Percentiles	**25**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.10
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.10
	75	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	0.10

Descriptive		Mechanical													
		Q23	Q24	Q 25	Q 26	Q 27	Q 28	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q 23
N	Valid	760	760	760	760	760	760	760	760	760	760	760	760	0.62	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0.62	0
Mean		1.37	1.74	1.14	1.08	1.08	1.08	1.08	1.50	1.70	1.63	1.18	1.18	0.62	1.20
Std. Error of Mean		.031	.038	.017	.015	.015	.015	.015	.036	.033	.034	.016	.016	0.62	.025
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	0.62	1
Std. Deviation		0.84	1.04	0.48	0.40	0.40	0.40	0.40	0.99	0.92	0.93	0.45	0.45	0.62	0.60
Variance		0.71	1.09	0.23	0.16	0.16	0.16	0.16	0.97	0.84	0.87	0.20	0.20	0.62	0.36
Skewness		2.68	0.96	3.51	5.81	5.81	5.81	5.81	1.70	1.25	1.38	2.45	2.45	0.62	3.60
Std. Error of Skewness		0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.62	.100
Kurtosis		7.41	-0.64	11.02	34.86	34.86	34.86	34.86	1.29	0.64	0.84	5.43	5.43	0.62	13.26
Std. Error of Kurtosis		0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.62	.199
Range		4	3	3	3	3	3	3	3	3	3	2	2	0.62	3
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	0.62	1
Maximum		5	4	4	4	4	4	4	4	4	4	3	3	0.62	4
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62	1.00
	75	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	0.62	1.00

Descriptive		Computer Science												
		Q 23	Q24	Q 25	Q 26	Q 27	Q 28	Q 29	Q30	Q31	Q32	Q 33	Q 34	Q35
N	Valid	600	600	600	600	600	600	600	600	600	600	600	600	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.20	1.63	1.10	1.05	1.05	1.05	1.05	1.29	1.61	1.43	1.07	1.07	1.20
Std. Error of Mean		.025	.039	.016	.014	.014	.014	.014	.030	.029	.029	.010	.010	.019
Median		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
Mode		1	1	1	1	1	1	1	1	1	1	1	1	1
Std. Deviation		0.60	0.95	0.40	0.35	0.35	0.35	0.35	0.74	0.71	0.72	0.25	0.25	0.48
Variance		0.36	0.90	0.16	0.12	0.12	0.12	0.12	0.54	0.51	0.51	0.06	0.06	0.23
Skewness		3.60	1.03	4.07	7.40	7.40	7.40	7.40	2.70	1.28	1.88	3.48	3.48	2.38
Std. Error of Skewness		.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100	.100
Kurtosis		13.26	-0.56	15.73	56.60	56.60	56.60	56.60	6.35	2.09	3.51	10.17	10.17	4.95
Std. Error of Kurtosis		.199	.199	.199	.199	.199	.199	.199	.199	.199	.199	.199	.199	.199
Range		3	3	2	3	3	3	3	3	3	3	1	1	2
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	4	3	4	4	4	4	4	4	4	2	2	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00
	75	1.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00

Question number 23,24,25,26,27,28,29,30,31,32,33,34&35 shown in Appendix II

CHI- SQUARE ANALYSIS OFALCOHOL AND OTHER DRUG USE

Table 4.77

Analysis on the question "What was your age when you had your first drink of alcohol other than a few sips?" among urban and rural area students

		I never had a drink of alcohol	16 years or younger	17-18 years old	19-20 years old	21 years old or elder	Total	Chi-square & P value
Urban	Count	840	18	45	15	82	1000	
	Expected Count	820.0	20.0	40.0	20.0	100.0	1000.0	
	% Total	42.0%	4.0%	2.0%	1.0%	1.0%	50.0%	
Rural	Count	800	30	40	20	110	1000	Chi-square= 8.976,
	Expected Count	820.0	20.0	40.0	20.0	100.0	1000.0	
	% Total	40.0%	6.0%	2.0%	1.0%	1.0%	50.0%	
Total	Count	1640	48	85	35	192	2000	P= 0.062
	Expected Count	1640.0	40.0	80.0	40.0	200.0	2000.0	
	% Total	82.0%	2.0%	4.0%	2.0%	10.0%	100.0%	

Area wise comparison of the age of first drink of alcohol shows that, 84.00 of urban engineering college students and 80.00 of rural engineering college students never tried for alcohol. Area wise comparison of the age of first drink of alcohol shows that, 1.8% of urban engineering college students and 3.0% of rural engineering college students used first drink of alcohol at the age of 16 years or younger. Area wise comparison of the age of first drink of alcohol shows that, 4.5% of urban engineering college students and 4.0% of rural engineering college students used first drink of alcohol at the age of 17 to 18 years old. Area wise comparison of the age of first drink of alcohol shows that, 1.5% of urban engineering college students and 2.0% of rural engineering college students used first drink of alcohol at the age of 19 to 20 years old.

The obtained value of Chi-Square is 8.976, which is significant at 0.05 levels of significance as the p-value obtained is 0.062. Area wise comparison of the age of first drink of alcohol shows that, 8.2% of urban engineering college students and 11.0% of rural engineering college students used first drink of alcohol at the age of 21 years old and elder.

The graphical representation to the responses to what was your age when you had your first drink of alcohol other than a few sips among urban and rural area students are presented in Figure 4.49.

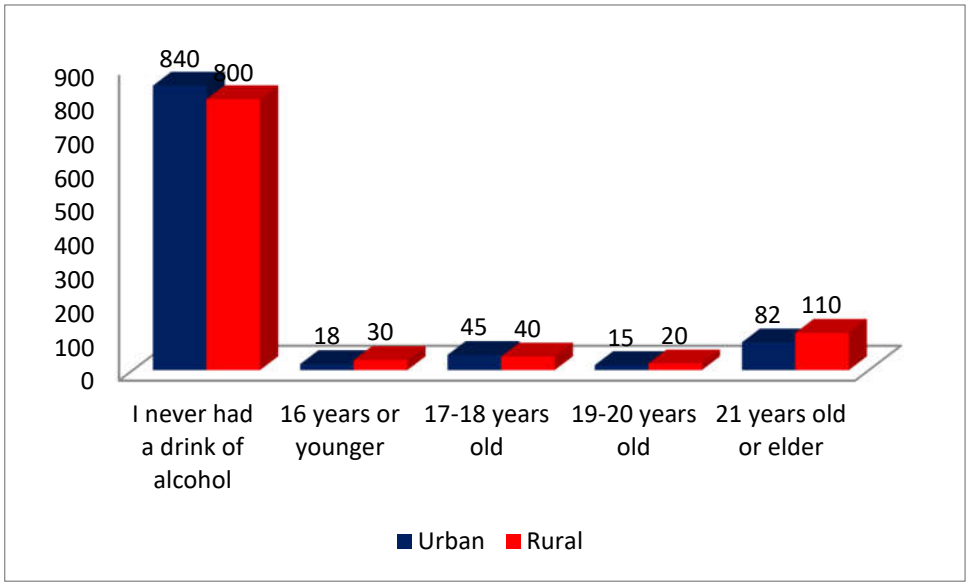

Figure 4.49: *2"What was your age when you had your first drink of alcohol other than a few sips?" among urban and rural area students*

Table 4.78

Analysis on the question "What was your age when you had your first drink of alcohol other than a few sips?" among male and female students

		Never drank	16 years or younger	17-18 years	19-20 years	21 years or elder	Total	Chi-square & P value
Male	Count	638	221	73	41	27	1000	Chi-square=366.75 P= 0.000
	Expected Count	811.0	116.06	38.52	20.51	13.51	1000.0	
	% Total	31.9%	11.05%	3.65%	2.05%	1.35%	50.0%	
Female	Count	984	11	4	0	0	1000	
	Expected Count	811.0	116.06	38.52	20.51	13.51	1000.0	
	% Total	49.2%	0.55%	0.2%	0.0%	0.0%	50.0%	
Total	Count	1622	232	77	41	27	2000	
	Expected Count	1622.0	232.0	77.0	41.0	27.0	2000.0	
	% Total	81.1%	11.6%	3.85%	2.05%	1.35%	100.0%	

As shown in Table 4.78, 31.9% male students and 49.2% female students never consumed alcohol. 11.05% male students and 0.55% of female students first drank alcohol at the age of 16 years or early. 3.65% of male students and 0.2% of female students consumed alcohol at the age of 17-18 years, 2.05% male consumed alcohol at the age of 19-20 years, 1.35% male consumed alcohol at the age of 21 years or after.

The obtained Chi-square for this group was 366.75 which is significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "What was your age when you had your first drink of alcohol other than a few sips?"It was noted that the response pattern of the male and female on the issue "What was your age when you had your first drink of alcohol other than a few sips?" were different. Male was disproportionately

associated with the response of consumed alcohol at the age of 16years or early, 17-18 years, 19-20 years and 21 years or after, female was disproportionately associated with the response of never consumed alcohol.

The graphical representation to the responses to what was your age when you had your first drink of alcohol other than a few sips among male and female students are presented in Figure 4.50.

Figure 4.50

"What was your age when you had your first drink of alcohol other than a few sips?" among male and female students

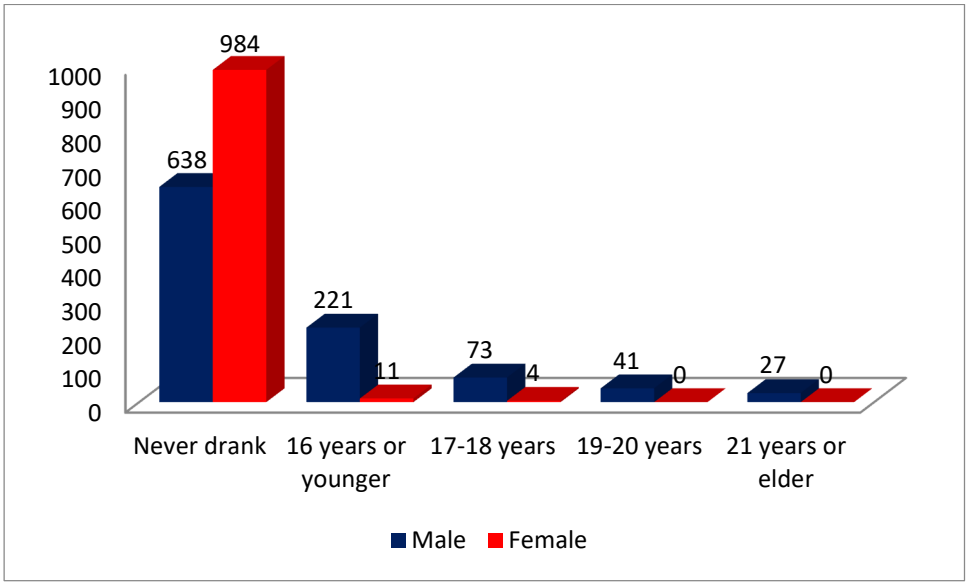

Table 4.79

Analysis on the question "What was your age when you had your first drink of alcohol other than a few sips? "among government, aided and self-financing students

Category		I have never had a drink of Alcohol	16 Years or Younger	17-18 years old	19-20 Years old	21 Years Old or elder	Total	Chi-square & P value
Government	Count	562	61	38	19	0	680	Chi-square = 37.38, P = .000
	Expected Count	557.26	71.4	27.2	13.94	10.2	680.0	
	% of Total	28.1%	3.05%	1.9%	0.95%	0.0%	34.0%	
Aided	Count	522	57	21	22	18	640	
	Expected Count	524.48	67.2	25.6	13.12	9.6	640.0	
	% of Total	26.1%	2.85%	1.05%	1.1%	0.9%	32.0%	
Self-financing	Count	555	92	21	0	12	680	
	Expected Count	557.26	71.4	27.2	13.94	10.2	680.0	
	% of Total	27.75%	4.6%	1.05%	0.0%	1.0%	34.0%	
Total	Count	1639	210	80	41	30	2000	
	Expected Count	1639.0	210.0	80.0	41.0	30.0	2000.0	
	% of Total	81.95%	10.5%	4.0%	2.05%	1.5%	100.0%	

As shown in Table 4.79, 82.4% government, 81.3% aided, 82.4% self-financing students never drank alcohol. 8.8% government, 9.4% aided, 3.0% self-financing students had alcohol at 16 years or younger. 5.9% government, 3.1% aided, 1% self-financing students had alcohol at 17 to 18 years. 2.9% government, 3.1% aided students had alcohol at 19 to 20 years. 3.1% aided, 2.9% self-financing students had first drink of alcohol at 21 years or elder.

Chi-square for the group obtained was 53.851 which was significant at 0.05 level of significance, as the p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association

between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "What was your age when you had your first drink of alcohol other than a few sips?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "What was your age when you had your first drink of alcohol other than a few sips?" were different. Government college students were disproportionately associated with the response of never drank alcohol, 17 to 18 years and 19 to 20 years. Aided college students were disproportionately associated with the response of 19 to 20 years and 21 years and elder. Self-financing college students were disproportionately associated with the response of never had alcohol, 16 years or younger and 21 years or elder.

The graphical representation to the responses to what was your age when you had your first drink of alcohol other than a few sips among government, aided and self-financing students are presented in Figure 4.51.

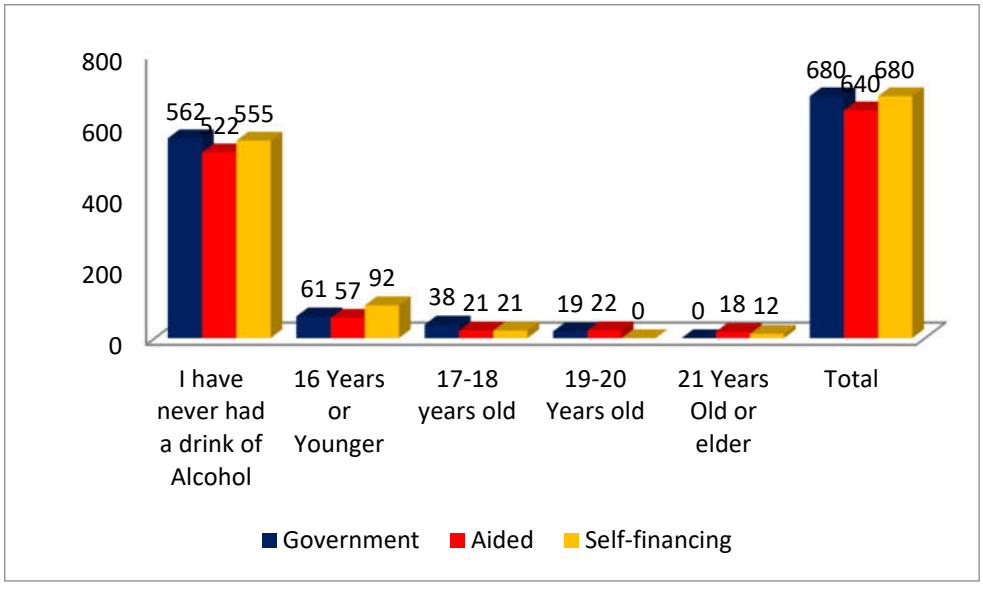

Figure 4.51 *"What was your age when you had your first drink of alcohol other than a few sips?" among government, aided and self-financing students*

Table 4.80

Analysis on the question "During the past 30 days, on how many days did you have at least one drink containing alcohol?" among urban and rural students

		0 days	1 or 2 days	3 to 15 days	16 to 29 days	Total	Chi-square & P value
Urban	**Count**	680	120	160	40	1000	Chi-Square 30.769 P-value 0.000
	Expected Count	650.0	100.0	200.0	50.0	1000.0	
	% Total	34.0%	6.0%	8.0%	2.0%	50.0%	
Rural	**Count**	620	80	240	60	1000	
	Expected Count	650.0	100.0	200.0	50.0	1000.0	
	% Total	31.0%	4.0%	12.0%	3.0%	50.0%	
Total	**Count**	1300	200	400	100	2000	
	Expected Count	1300.0	200.0\kiu	400.0	100.0	2000.0	
	% Total	65.0%	10.0%	20.0%	5.0%	100.0%	

Area wise comparison of the number of days of alcohol consumption during the past 30 days shows that, 68.0% of urban engineering college students and 62.0% of rural engineering college students never use drinks containing alcohol. Area wise comparison of the number of days of alcohol consumption during the past 30 days shows that, 12.0% of urban engineering college students and 8.0% of rural engineering college students use drinks containing alcohol one or two days only. Area wise comparison of the number of days of alcohol consumption during the past 30 days shows that, 16.0% of urban engineering college students and 24..0% of rural engineering college students use drinks containing alcohol three to fifteen days only. Area wise comparison of the number of days of alcohol consumption during the past 30 days shows that 4.0% of urban engineering college students and 6..0% of rural engineering college students use drinks containing alcohol sixteen to twenty nine days.

The value of Chi-Square obtained is 30.769, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there

is statistically significant association between Area and response; that is, both urban and rural have not equally taken alcohol frequently.

The graphical representation to the responses to during the past 30 days, how many days did you have at least one drink containing alcohol among urban and rural area students are presented in Figure 4.52.

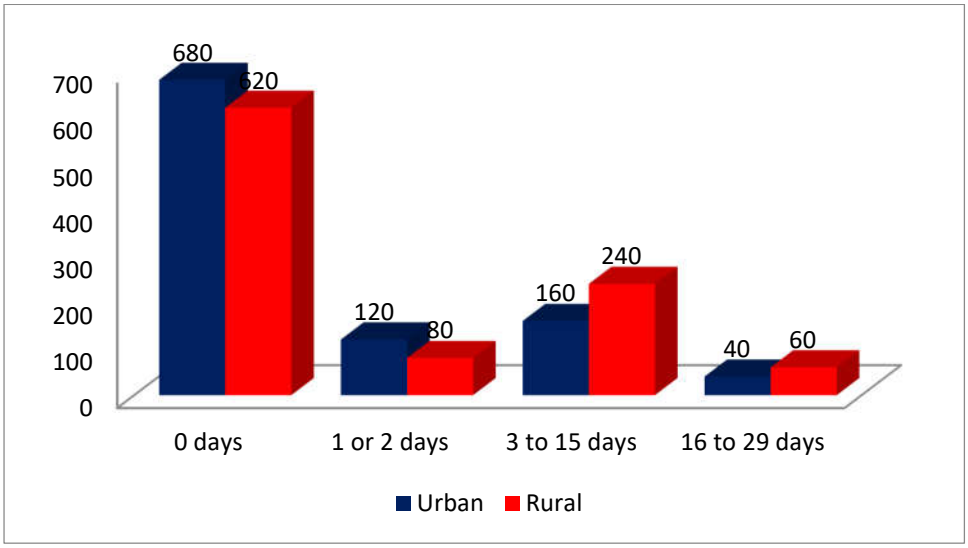

Figure 4.52: *"During the past 30 days, on how many days did you have at least one drink containing alcohol?" among urban and rural students*

Table 4.81

Analysis on the question "During the past 30 days, on how many days did you have at least one drink containing alcohol?"among male and female students

		0 day	1 or 2 days	3 to 15 days	16 to 29 days	Total	Chi-square & P value
Male	**Count**	339	179	384	98	1000	Chi-square=940.56 P= 0.000
	Expected Count	663.0	94.0	194.0	49.0	1000.0	
	% Total	16.95%	8.95%	19.2%	4.9%	50.0%	
Female	**Count**	987	9	4	0	1000	
	Expected Count	663.0	94.0	194.0	49.0	1000.0	
	% Total	49.35%	0.45%	0.2%	0.0%	50.0%	
Total	**Count**	1326	188	388	98	2000	
	Expected Count	1326.0	188.0	388.0	98.0	2000.0	
	% Total	66.3%	9.4%	19.4%	4.9%	100.0%	

As shown in Table 4.81, 16.95% male students and 49.35% female students never consumed alcohol in the past 30 days. 8.95% male students and 0.45% female students consumed alcohol one or two days, 19.2% male students and 0.2% female students consumed alcohol three to fifteen days, 4.9% male students consumed alcohol 16 to 29 days in the past 30 days.

The obtained Chi -square for this group was 940.56 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "During the past 30 days, on how many days did you have at least one drink containing alcohol?"It was noted that the response pattern of the male and female on the issue "During the past 30 days, on how many days did you have at least one drink containing alcohol?" were different. Male was disproportionately associated with the response of consuming alcohol in the past days for one or two days, three to fifteen days, 16 to 29 days, female was disproportionately associated with the response of never consumed alcohol in the past 30 days.

The graphical representation to the responses to during the past 30 days, how many days did you have at least one drink containing alcohol among male and female students are presented in Figure 4.53.

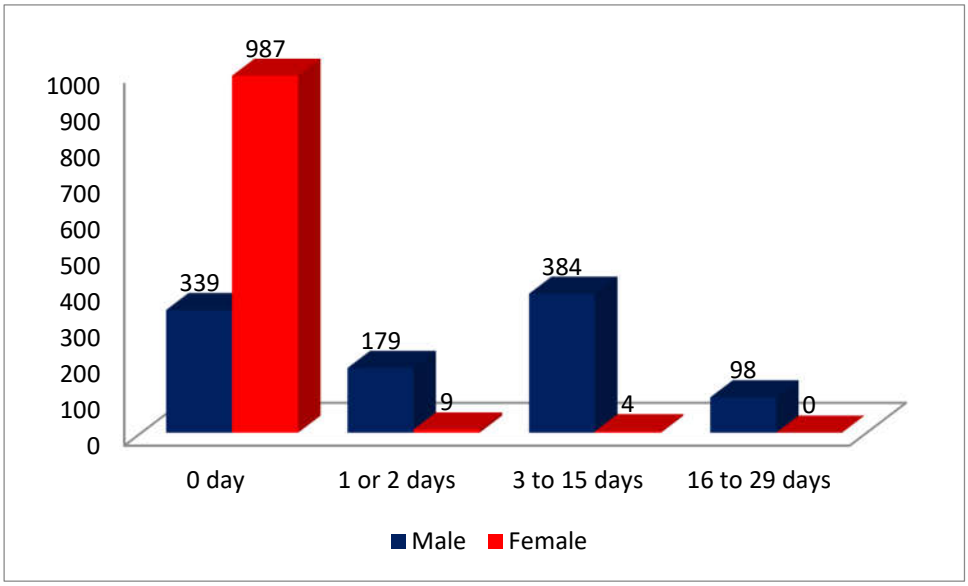

Figure 4.53: *"During the past 30 days, on how many days did you have at least one drink containing alcohol?" among male and female students*

Table 4.82

Analysis on the question "During the past 30 days, on how many days did you have at least one drink containing alcohol?"among government, aided and self-financing students

Category		0 Days	1 or 2 Days	3 to 15 Days	16 to 29 Days	Total	Chi-square &p-value
Government	Count	446	64	132	38	680	Chi-square = 13.292, p = 0.039
	Expected Count	444.72	69.02	132.6	33.66	680.0	
	% of Total	22.3%	3.2%	6.6%	1.9%	34.0%	
Aided	Count	422	77	121	20	640	
	Expected Count	418.56	64.96	124.8	31.68	640.0	
	% of Total	21.1%	3.85%	6.05%	1.0%	32.0%	
Self-financing	Count	440	62	137	41	680	
	Expected Count	444.72	69.02	132.6	33.66	680.0	
	% of Total	22.0%	3.0%	6.85%	2.05%	34.0%	
Total	Count	1308	203	390	99	2000	
	Expected Count	1308.0	203.0	390.0	99.0	2000.0	
	% of Total	65.4%	10.15%	19.5%	4.95%	100.0%	

As shown in Table 4.82, 64.7% government, 65.6% aided, 64.7% self-financing students never drank alcohol. 8.8% government, 12.5% aided, 8.8% self-financing students drank alcohol one or two days. 20.6% government, 18.8% aided, 20.6% self-financing students had alcohol for three to 15 days. 5.9% government, 3.1% aided, 5.9% self-financing students had at least one drink containing alcohol for 16 to 29 days.

The obtained Chi square for this group was 13.292, which was significant at 0.05 level of significance, as the p-value obtained was 0.039 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "During the past 30 days, on how many days did you have at least one drink containing alcohol? It was noted that the response pattern of the government, aided and self-financing college students on the issue "During the past 30 days, on how many days did you have at least one drink containing alcohol?" were different. Government college students were disproportionately associated with the response of three to 15 days and 16 to 29 days. Aided college students were disproportionately associated with the response of zero days and one or two days. self-financing college students were disproportionately associated with the response of three to 15 days and 16 to 29 days.

The graphical representation to the responses to during the past 30 days, how many days did you have at least one drink containing alcohol among government, aided and self-financing students are presented in Figure 4.54.

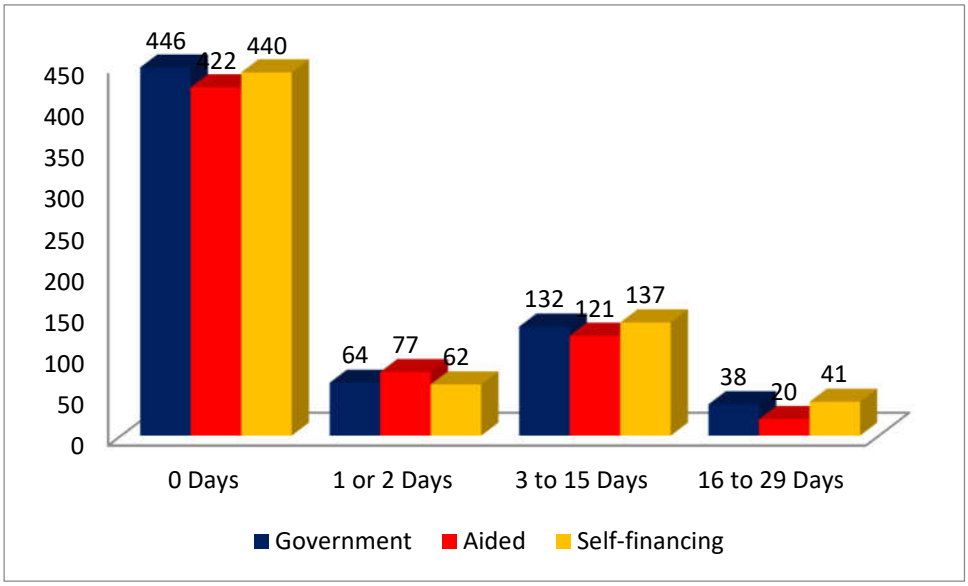

Figure 4.54: *"During the past 30 days, on how many days did you have at least one drink containing alcohol?" among government, aided and self-financing students*

Table 4.83

Analysis on the question "How old were you for the first time when you were completely drunken?" among urban and rural area students

		Never drunk so much	16 years old or younger	17 to 18 years old	19 to 20 years old	Total	Chi-square & p-value
Urban	**Count**	961	18	10	11	1000	Chi-square= 2.32, p= 0.034
	Expected Count	965.0	14.0	10.0	11.0	1000.0	
	% Total	48.05%	0.9%	0.5%	0.6%	50.0%	
Rural	**Count**	969	10	10	11	1000	
	Expected Count	964.5	14.0	10.5	11.0	1000.0	
	% Total	48.45%	0.5%	0.5%	0.6%	50.0%	
Total	**Count**	1930	28	20	22	2000	
	Expected Count	1930.0	28.0	20.0	22.0	2000.0	
	% Total	96.5%	1.4%	1.0%	1.1%	100.0%	

Area wise comparison of the age wise analysis of the intensity of alcohol consumption for the first time shows that, 96.0% of urban engineering

college students and 96.9% of rural engineering college students have never drunk so much alcohol. Area wise comparison of the age wise analysis of the intensity of alcohol consumption for the first time shows that, 1.8% of urban engineering college students and 1.0% of rural students drank so much alcohol at the age of 16 years old or younger that made them really drunk. Area wise comparison of the age wise analysis of the intensity of alcohol consumption for the first time shows that, 1.1% of urban engineering college students and 1.0% rural area students drank so much alcohol at the age of 17 to 18 years old that made them really drunk. Area wise comparison of the age wise analysis of the intensity of alcohol consumption for the first time shows that 1.1% of urban area students and 1.1% rural area students drank so much alcohol at the age of 19 to 20 years old that made them really drunk.

The value of Chi-Square obtained is 2.375which is significant at 0.05 levels of significance as the p-value obtained is 0.034. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally made them completely drunken.

The graphical representation to the responses to “how old were you for the first time when you were completely drunken” among urban and rural area students are presented in Figure 4.55.

Table 4.84

Analysis on the question "How old were you for the first time when you were completely drunken?" among male and female students

		Never	16 years or younger	17 or 18 years	19 to 20 years	Total	Chi-square & P value
Male	**Count**	929	28	21	22	1000	
	Expected Count	956.5	16.0	14.0	13.5	1000.0	
	% Total	46.4%	1.4%	1.0%	1.1%	50.0%	
Female	**Count**	984	4	7	4	1000	Chi-square=37.28
	Expected Count	956.5	16.0	14.0	13.5	1000.0	
	% Total	49.2%	0.2%	0.35%	0.2%	50.0%	P= 0.000
Total	**Count**	1913	32	28	22	2000	
	Expected Count	1913.0	32.0	28.0	22.0	2000.0	
	% Total	95.65%	1.6%	1.4%	1.1%	100.0%	

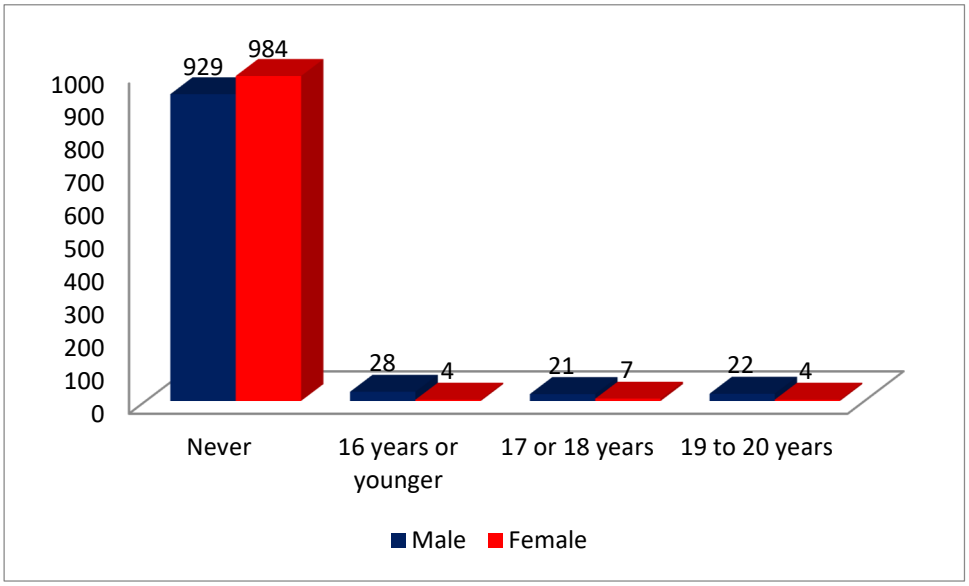

Figure 4.55 *"How old were you for the first time when you were completely drunken?" among male and female students*

Table 4.85

Analysis on the question "How old were you for the first time when you were completely drunken?" among government, aided and self-financing students

Category		Never Drunk so much	16 years old or younger	17 or 18 years ol	19 or 20 years old	Total	Chi-square & p-value
Government	Count	651	13	7	9	680	Chi-square = 8.077, p = 0.232
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	32.6%	.7%	.4%	.5%	34.0%	
Aided	Count	612	11	8	9	640	
	Expected Count	617.3	9.0	6.7	7.0	640.0	
	% of Total	30.6%	.6%	.4%	.5%	32.0%	
Self-financing	Count	666	4	6	4	680	
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	33.3%	.2%	.3%	.2%	34.0%	
Total	Count	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% of Total	96.5%	1.4%	1.1%	1.1%	100.0%	

As shown in Table 4.84, 46.4% male students and 49.2% female students never felt completely drunk. 1.4% male students and 0.2% female students felt completely drunk at the age of 16 years or before. 1% male students and 0.35% female students felt completely drunk at the age of 17 or 18years. 1.1% male students and 0.2% female students felt completely drunk at the age of 19 or 20years.

The obtained Chi-square for this group was 37.28 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How old were you for the first time when you

were completely drunken?"It was noted that the response pattern of the male and female on the issue "How old were you for the first time when you were completely drunken?" were different. Male was disproportionately associated with the response of felt completely drunken at the age of 16years or before, 17 or 18years, 19 or 20years, female was disproportionately associated with the response of never felt completely drunken.

The graphical representation to the responses to "how old were you for the first time when you were completely drunken" among male and female students are presented in Figure 4.56.

As shown in Table 4.85, 95.7% government, 95.6% aided, 97.9% self-financing students never drunk so much alcohol. 1.9% government, 1.7% aided, 0.6% self-financing students had first drink at 16 years or younger. 1% government, 1.3% aided, 0.9% self-financing students had first drink at 17 or 18 years. 1.3% government, 1.4% aided, 0.6% self-financing students had first drink at 19 years or 20 years.

The obtained Chi-square for this group was 8.077 which was not significant at 0.05 level of significance, as the p-value 0.232 that was greater than 0.05 level. Thus, it may be accepted the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "How old were you for the first time when you were completely drunken?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How old were you for the first time when you were completely drunken?" were same.

The graphical representation to the responses to "how old were you for the first time when you were completely drunken" among government, aided and self-financing students are presented in Figure 4.56.

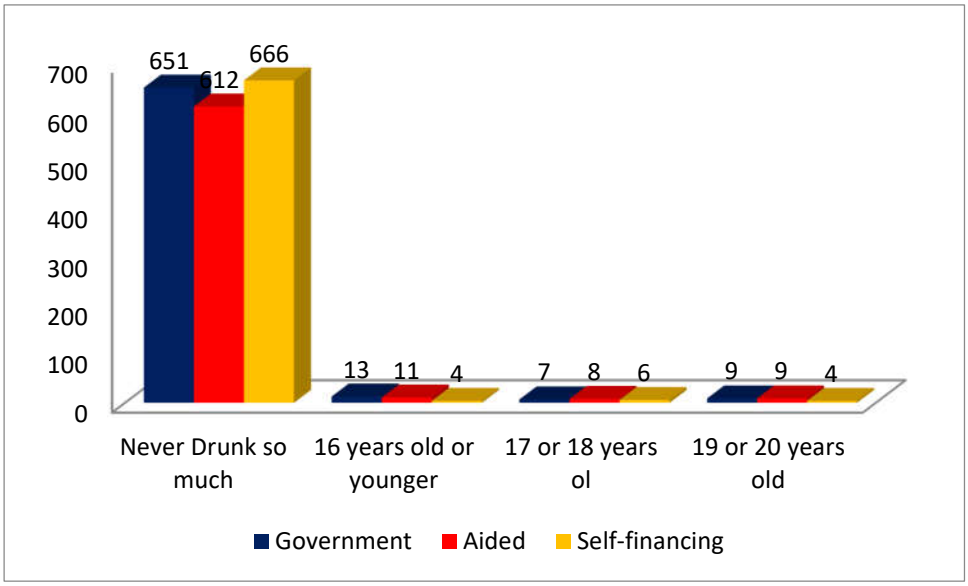

Figure 4.56 *"How old were you for the first time when you were completely drunken?" among government, aided and self-financing students*

Table 4.86

Analysis on the question "What is the quantity of drinks you have had on one occasion?" among urban and rural students

		I do not drink alcohol	less than a peg	2 pegs	3 pegs		Chi-square & P value
Urban	**Count**	960	18	11	11	1000	
	Expected Count	964.5	14.0	10.5	11.0	1000.0	
	% of Total	48.0%	0.9%	0.6%	0.6%	50.0%	
Rural	**Count**	969	10	10	11	1000	Chi-square= 2.378,
	Expected Count	964.5	14.0	10.5	11.0	1000.0	
	% of Total	48.5%	0.5%	0.5%	0.6%	50.0%	P= 0.034
Total	**Count**	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% of Total	96.5%	1.4%	1.1%	1.1%	100.0%	

Area wise comparison of the frequency of drinks have had on one occasion in Table 4.86 shows that 96.0 urban engineering college students

and 96.9% rural engineering college students have never drink alcohol. 1.8% of urban engineering college students and 1.0% of rural engineering college students drunk less than a peg (i.e., 60ml.) on one occasion. 1.1% of urban engineering college students and 1.0% of rural engineering college students drunk 2 pegs on one occasion. 1.1% of urban engineering college students and 1.1% of rural engineering college students drunk 3 pegs on one occasion.

The value of Chi-Square obtained is 2.378 which is significant at 0.05 levels of significance as the p-value obtained is 0.034. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally use the quantity of drinks on one occasion.

The graphical representations to the responses to what is the quantity of drinks you have had on one occasion among urban and rural area students are presented in figure 4.57.

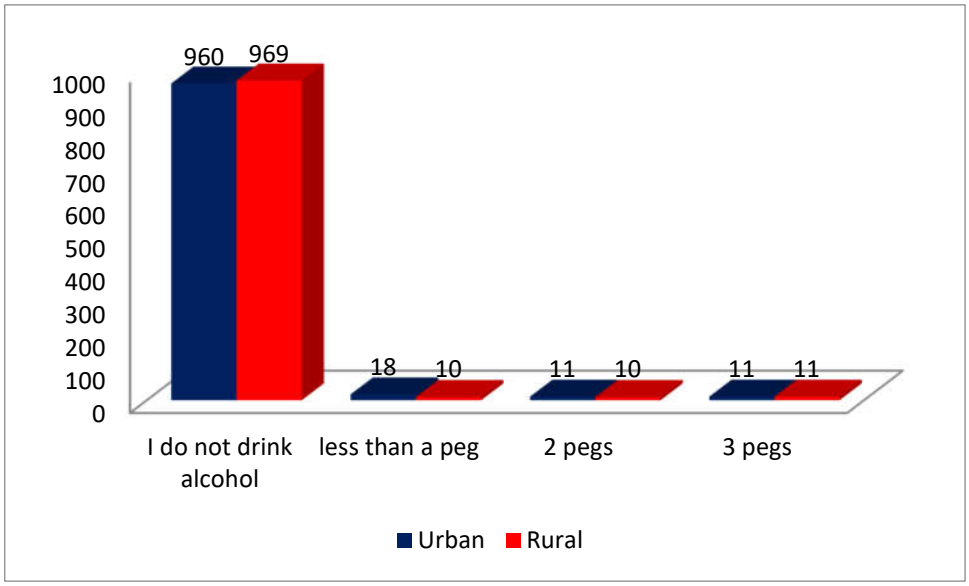

Figure 4.57: *"What is the quantity of drinks you have had on one occasion?" among urban and rural students*

Table 4.87

Analysis on the question "What is the quantity of drinks you have had on one occasion?" among male and female students

		dont drink	less than 60ml one peg	two pegs	three pegs	Total	Chi-square & P value
Male	**Count**	638	156	109	97	1000	
	Expected Count	811.0	82.0	57.0	50.0	1000.0	
	% Total	31.9%	7.8%	5.45%	4.85%	50.0%	
Female	**Count**	984	8	5	3	1000	Chi- square= 390.61
	Expected Count	811.0	82.0	57.0	50.0	1000.0	
	% Total	49.2%	0.4%	0.25%	0.15%	50.0%	P= 0.000
Total	**Count**	1622	164	114	100	2000	
	Expected Count	1622.0	164.0	114.0	100.0	2000.0	
	% Total	81.1%	8.2%	5.7%	5.0%	100.0%	

As shown in Table 4.87, 31.9% male and 49.2% female never drink alcohol. 7.8% male and 0.4% female drank less than 60ml on one occasion. 5.45% male and 0.25% female consumed two pegs. 4.85% male and 0.15% female consumed three pegs of alcohol on one occasion.

The obtained Chi-square for the group was 390.61 which was significant at 0.05 level of significance, as the p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "What is the quantity of drinks you have had on one occasion?"It was noted that the response pattern of the male and female on the issue "What is the quantity of drinks you have had on one occasion?" were different. Male was disproportionately associated with the response of consume less than 60ml, two pegs and three pegs of alcohol on one occasion, female was disproportionately associated with the response of never consumed alcohol.

The graphical representations to the responses to what is the quantity of drinks you have had on one occasion among urban and rural area students are presented in Figure 4.58.

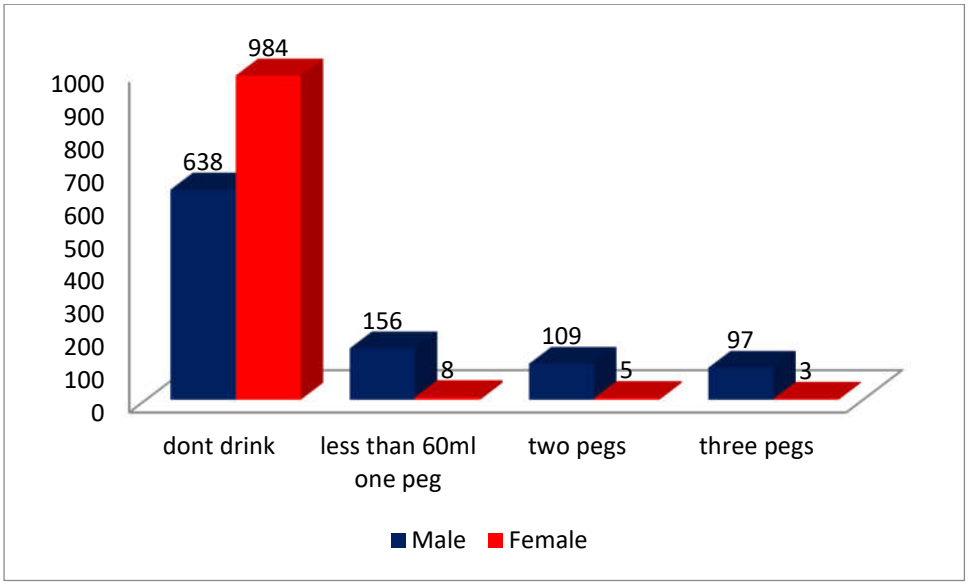

Figure 4.58 *"What is the quantity of drinks you have had on one occasion?" among male and female students*

Table 4.88

Analysis on the question "What is the quantity of drinks you have had on one occasion?" among government, aided and self-financing students

Category		I do not drink alcohol	Less than a peg(60 ML)	2 Peg	3 Peg	Total	Chi-square & P value
Government	Count	651	13	7	9	680	Chi-square = 8.077, P = 0.232
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	32.6%	.7%	.4%	.5%	34.0%	
Aided	Count	612	11	8	9	640	
	Expected Count	617.3	9.0	6.7	7.0	640.0	
	% of Total	30.6%	.6%	.4%	.5%	32.0%	
Self-financing	Count	666	4	6	4	680	
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	33.3%	.2%	.3%	.2%	34.0%	
Total	Count	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% of Total	96.5%	1.4%	1.1%	1.1%	100.0%	

As shown in Table 4.88, 95.7% government, 95.6% aided, 97.9% self-financing students never drank alcohol. 1.9% government, 1.7% aided, 0.6% self-financing students had less than 60 ml (one peg). 1% government, 1.3% aided, 0.9% self-financing students had two pegs. 1.3% government, 1.4% aided, 0.6% self-financing students had three pegs.

The obtained value of Chi-square for the group was 8.077 which was not significant at 0.05 level of significance, as obtained p-value 0.232 that was greater than 0.05 level. Thus, it may not be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "What is the quantity of drinks you have had on one occasion?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "What is the quantity of drinks you have had on one occasion?" were not different.

The graphical representations to the responses to what is the quantity of drinks you have had on one occasion among male and female students are presented in Figure 4.59.

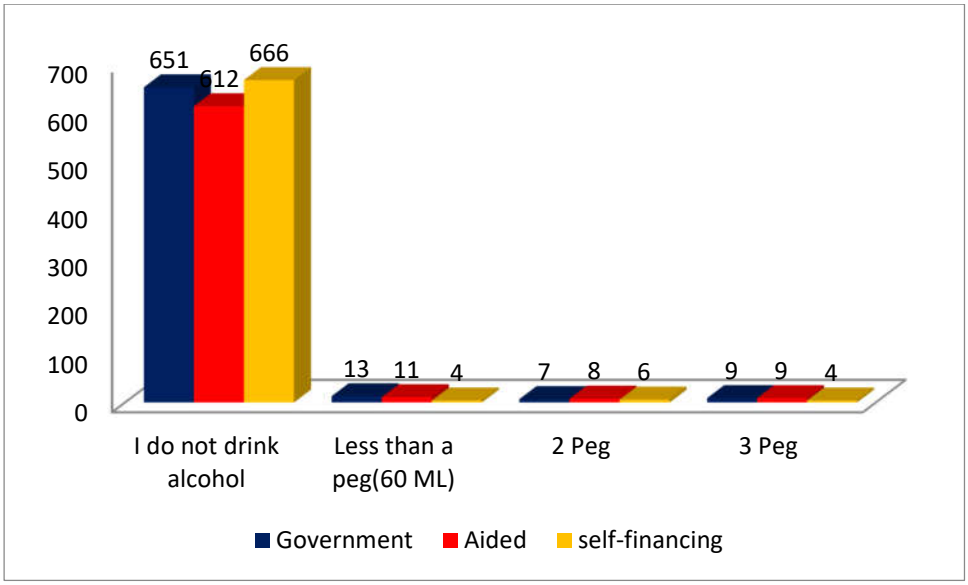

Figure 4.59: *"What is the quantity of drinks you have had on one occasion?" among government, aided and self-financing students*

Table 4.89

Analysis on the question "What type of alcohol do you usually drink?" among urban and rural area students

		I do not drink alcohol	Beer	Vodka/Gin	Toddy	Total	Chi-square & p-value
Urban	**Count**	960	18	11	11	1000	Chi-square=2.375, p=0.034
	Expected Count	964.5	14.0	10.5	11.0	1000.0	
	% Total	48.0%	0.9%	0.6%	0.6%	50.0%	
Rural	**Count**	969	10	10	11	1000	
	Expected Count	964.5	14.0	10.5	11.0	1000.0	
	% Total	48.5%	0.5%	0.5%	0.6%	50.0%	
Total	**Count**	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% Total	96.5%	1.4%	1.1%	1.1%	100.0%	

Area wise comparison of the type of alcohol consumption shows that 96.0% of urban engineering college students and 96.9% of rural engineering students never consumed alcohol. 1.8% of urban engineering college students and 1.0% of rural engineering college students consumed beer. 1.1%of urban engineering college students and 1.0% of rural engineering college students consumed vodka / gin. And 1.1% of urban engineering college students and 1.1% of rural engineering college students consumed toddy.

The value of Chi-Square obtained is 2.375 which is significant at 0.05 levels of significance as the p-value obtained is 0.034. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally used same alcohol.

The graphical representations to the responses to" what type of alcohol do you usually drink "among urban and rural area students are presented in Figure 4.60.

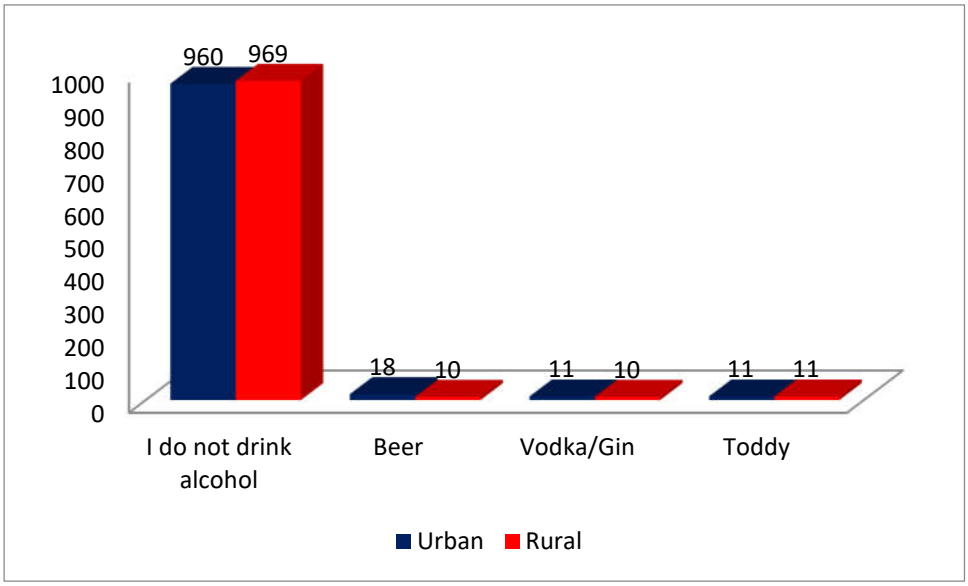

Figure 4.60*"What type of alcohol do you usually drink?" among urban and rural area students*

Table 4.90

Analysis on the question "What type of alcohol do you usually drink?" among male and female students

		don't drink	Beer	Vodka/gin	Toddy	Total	Chi-square &p- value
Male	**Count**	638	122	136	104	1000	Chi-square=400.56 p= 0.000
	Expected Count	812.22	66.6	69.104	52.078	1000.0	
	% Total	31.9%	6.1%	6.8%	5.2%	50.0%	
Female	**Count**	984	11	2	0	1000	
	Expected Count	809.78	66.4	68.89	51.92	1000.0	
	% Total	49.2%	0.55%	0.1%	.0%	50.0%	
Total	**Count**	1622	133	138	104	2000	
	Expected Count	1622.0	133.0	138.0	104.0	2000.0	
	% Total	81.2%	6.66%	6.91%	5.21%	100.0%	

As shown in Table 4.90, 31.9% male students and 49.2% female students never consumed alcohol. 6.1% male students and 0.55% female students consumed beer. 6.8% male students and 0.1% female students consumed vodka or gin. 5.2% male students consumed toddy.

The obtained value of Chi-square for this group was 400.56 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "What type of alcohol do you usually drink?". It was noted that the response pattern of the male and female students on the issue "What type of alcohol do you usually drink?" were different. Male students were disproportionately associated with the response of consumed beer, vodka or gin and toddy, female students were disproportionately associated with the response of never consumed alcohol.

The graphical representations to the responses to" what type of alcohol do you usually drink "among male and female students are presented in Figure 4.61.

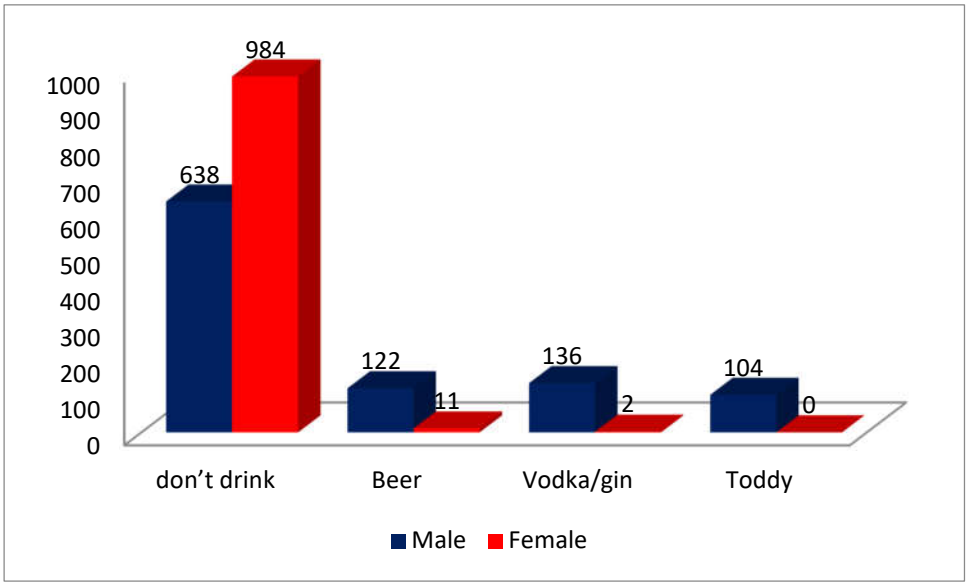

Figure 4.61: *"What type of alcohol do you usually drink?" among male and female students*

Table 4.91

Analysis on the question "What type of alcohol do you usually drink?" among government, aided and self-financing students

Category		I do not drink alcohol	Beer	Vodka / Gin	Toddy	Total	Chi-square & p- value
Government	Count	651	13	7	9	680	Chi- square = 8.077, p = 0.232
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	32.6%	.7%	.4%	.5%	34.0%	
Aided	Count	612	11	8	9	640	
	Expected Count	617.3	9.0	6.7	7.0	640.0	
	% of Total	30.6%	.6%	.4%	.5%	32.0%	
Self-financing	Count	666	4	6	4	680	
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	33.3%	.2%	.3%	.2%	34.0%	
Total	Count	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% of Total	96.5%	1.4%	1.1%	1.1%	100.0%	

As shown in Table 4.91, 95.7% government, 95.6% aided, 97.9% self-financing students never drank alcohol. 1.9% government, 1.7% aided, 0.6% self-financing students usually have beer. 1% government, 1.3% aided, 0.9% self-financing students usually have vodka/gin. 1.3% government, 1.4% aided, 0.6% self-financing students usually have toddy.

The obtained value of Chi-square for the group was 8.077 which was not significant at 0.05 level of significance, as the p-value obtained was 0.232 that was greater than 0.05 level. Thus, it may be accepted the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "What type of alcohol do you usually drink?". It was noted that the response pattern of the government, aided and self-financing college students on the issue "What type of alcohol do you usually drink?" were same.

The graphical representations to the responses to" what type of alcohol do you usually drink ", among government, aided and self-financing students are presented in Figure 4.62.

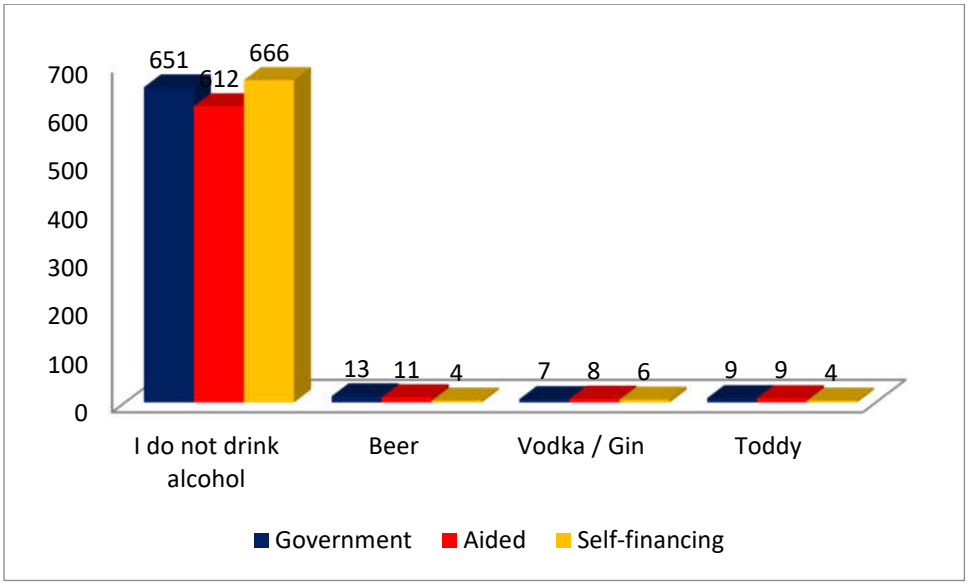

Figure 4.62: *"What type of alcohol do you usually drink?" among government, aided and self-financing students*

Table 4.92

Analysis on the question "Whom do you usually drink alcohol with?" among urban and rural area students

		I do not drink alcohol	With my friends	With my family	With persons I have just met	Total	Chi-square & p-value
Urban	**Count**	958	22	13	7	1000	
	Expected Count	963.5	14.0	10.0	7.0	1000.0	
	% Total	47.9%	1.1%	0.65%	0.35%	50.0%	
Rural	**Count**	969	14	10	7	1000	Chi-square= 2.375,
	Expected Count	963.5	14.0	10.0	7.0	1000.0	
	% Total	48.45%	0.7%	0.5%	0.35%	50.0%	
Total	**Count**	1927	36	21	22	2000	p= 0.034
	Expected Count	1929.0	36.0	21.0	22.0	2000.0	
	% Total	96.4%	1.8%	1.05%	1.1%	100.0%	

Area wise comparison of drinking alcohol with whom shows that, 96.0% of urban engineering college students and 96.9% of rural engineering college students never consumed alcohol, and 1.8% of urban engineering college students and 1.0% of rural engineering students consumed alcohol with friends. Further study shows that 1.1% of urban engineering college students and 1.0% of rural engineering students consumed alcohol with family and 1.1%% of urban engineering college students and 1.1% of rural engineering students consumed alcohol with persons just met.

The value of Chi-square obtained is 2.375 which is significant at 0.05 levels of significance as the p-value obtained is 0.034. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally consumed alcohol with somebody.

The graphical representations to the responses to whom do you usually drink alcohol with among urban and rural area students are presented in Figure 4.63.

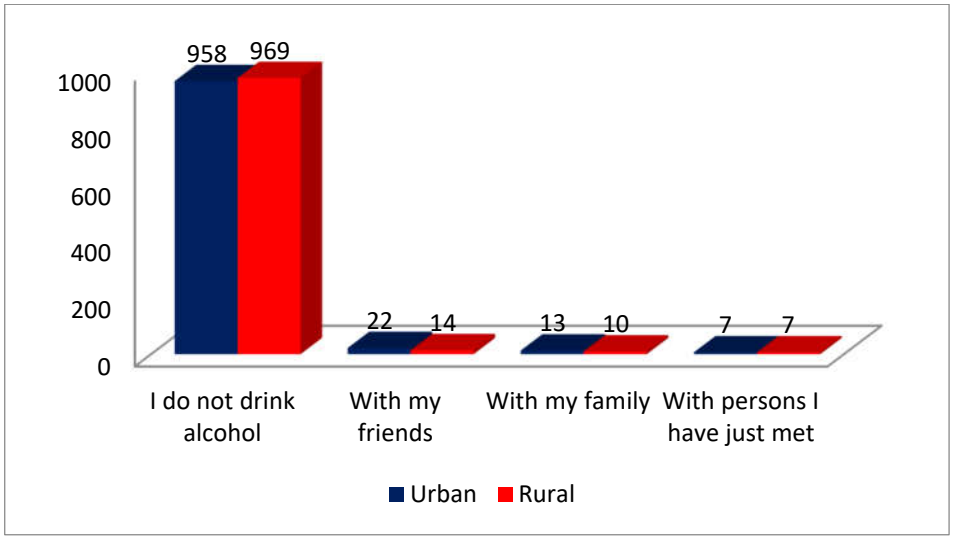

Figure 4.63: *"Whom do you usually drink alcohol with?" among urban and rural area students*

Table 4.93

Analysis on the question "Whom do you usually drink alcohol with?" among male and female students

		dont drink	with friends	with family	with just met person	Total	Chi-square & p- value
Male	**Count**	638	238	97	27	1000	Chi-square=391.41 p= 0.000
	Expected Count	811.0	126.5	49.0	13.5	1000.0	
	% Total	31.9%	11.9%	4.85%	1.35%	50.0%	
Female	**Count**	984	15	1	0	1000	
	Expected Count	811.0	126.5	49.0	13.5	1000.0	
	% Total	49.2%	0.75%	0.05%	0.0%	50.0%	
Total	**Count**	1622	253	98	27	2000	
	Expected Count	1622.0	253.0	98.0	27.0	2000.0	
	% Total	81.1%	12.65%	4.9%	1.35%	100.0%	

As shown in Table 4.93, 31.9% male students and 49.2% female students never consumed alcohol. 11.9% male students and 0.75% female students consumed alcohol with friends. 4.85% male students and 0.05% female students consumed alcohol with family. 1.35% male students consumed alcohol with just met person.

The obtained Chi-square for this group was 391.41 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Whom do you usually drink alcohol with?". It was noted that the response pattern of the male and female students on the issue "Whom do you usually drink alcohol with?" were different. Male students were disproportionately associated with the response of consumed alcohol with friends, family and with just met person; female students were disproportionately associated with the response of never consumed alcohol.

The graphical representations to the responses to whom do you usually drink alcohol with among male and female students are presented in Figure 4.64.

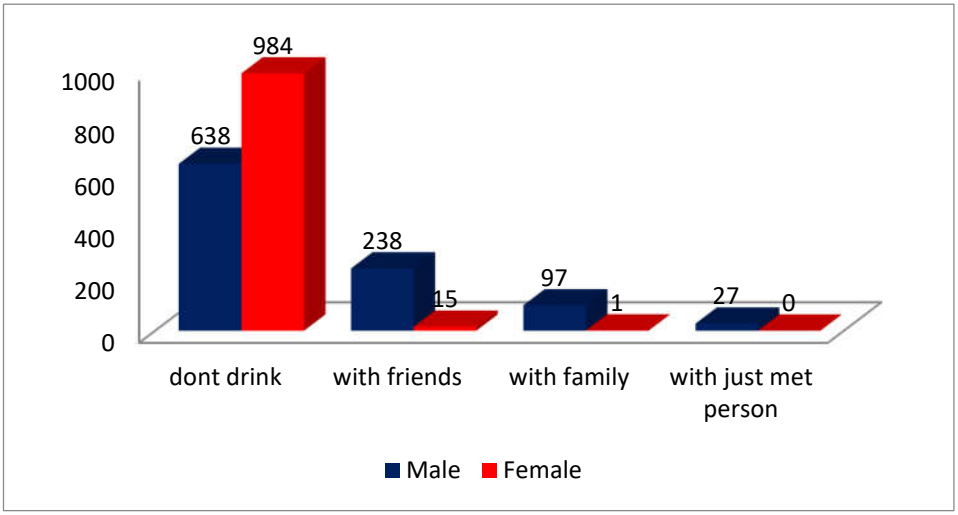

Figure 4.64: *"Whom do you usually drink alcohol with?" among male and female area students*

Table 4.94

Analysis on the question "Whom do you usually drink alcohol with?" among government, aided and self-financing students

Category		I do not drink alcohol	With my friends	With my family	With persons i have just met	Total	Chi-square & p-value
Government	Count	651	13	7	9	680	Chi-square = 8.077, p = 0.232
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	32.6%	.7%	.4%	.5%	34.0%	
Aided	Count	612	11	8	9	640	
	Expected Count	617.3	9.0	6.7	7.0	640.0	
	% of Total	30.6%	.6%	.4%	.5%	32.0%	
Self-financing	Count	666	4	6	4	680	
	Expected Count	655.9	9.5	7.1	7.5	680.0	
	% of Total	33.3%	.2%	.3%	.2%	34.0%	
Total	Count	1929	28	21	22	2000	
	Expected Count	1929.0	28.0	21.0	22.0	2000.0	
	% of Total	96.5%	1.4%	1.1%	1.1%	100.0%	

As shown in Table 4.94, 95.7% government, 95.6% aided, 97.9% self-financing students never drank alcohol. 1.9% government, 1.7% aided 0.6% self-financing students drank with friends. 1% government, 1.3% aided 0.9% self-financing students drank with family. 1.3% government, 1.4% aided 0.6% self-financing students drank with just met.

The obtained Chi-square for this group was 8.077 which were not significant at 0.05 level of significance, as the obtained p-value 0.232 that was greater than 0.05 level. Thus, it may not be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "Whom do you usually drink alcohol with?". It was noted that the response pattern of the government, aided and self-financing college students on the issue "Whom do you usually drink alcohol with?" were not different.

The graphical representations to the responses to whom do you usually drink alcohol with among government, aided and self-financing students are presented in Figure 4.65.

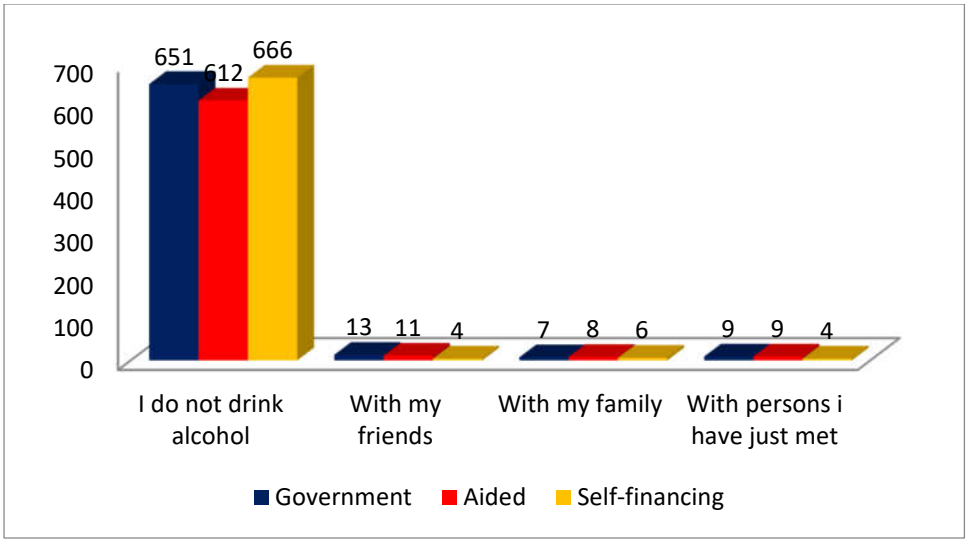

Figure 4.65: *"Whom do you usually drink alcohol with?" among government, aided and self-financing students*

Table 4.95

Analysis on the question "Do your parents or guardians know that you drink alcohol?" among urban and rural area students

		I do not drink alcohol	Yes	No	I do not know	Total	Chi-square & p-value
Urban	**Count**	840	58	51	51	1000	Chi-square= 8.984, p= 0.030
	Expected Count	814.5	64.0	60.5	61.0	1000.0	
	% Total	42.0%	2.9%	2.6%	2.6%	50.0%	
Rural	**Count**	789	70	70	71	1000	
	Expected Count	814.5	64.0	60.5	61.0	1000.0	
	% Total	39.5%	3.5%	3.5%	3.6%	50.0%	
Total	**Count**	1629	128	121	122	2000	
	Expected Count	1629.0	128.0	121.0	122.0	2000.0	
	% Total	81.5%	6.4%	6.1%	6.1%	100.0%	

Area wise comparison of the awareness of parents or guardian about the alcohol consumption of their children shows that 84.0% of urban engineering college students never consumed alcohol. 5.8% of urban engineering college students and 7.0% of rural engineering students in Kerala believe that their parents or guardians know that they drank alcohol. 5.1% of urban engineering students and 7.0% of rural engineering students believe that their parents or guardians don't know that they drank alcohol. 5.1% of urban engineering college students and 7.1% of rural engineering college students don't know whether their parents or guardians are aware about their habit of drinking alcohol.

The value of Chi-square obtained is 8.98, which is significant at 0.05 levels of significance as the p-value obtained is 0.030. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally knew their parents or guardian about their son or daughter drink alcohol.

The graphical representation of the responses to "do your parents or guardian know that you drink alcohol" among urban and rural area students is presented in figure 4.66.

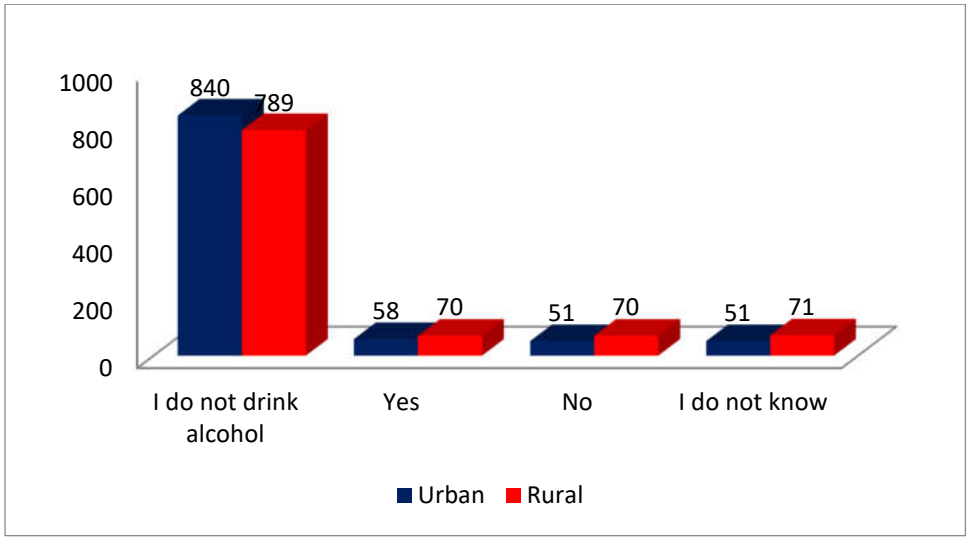

Figure 4.66: *"Do your parents or guardians know that you drink alcohol?" among urban and rural area students*

Table 4.96

Analysis on the question "Do your parents or guardians know that you drink alcohol?" among male and female students

		dont drink	Yes	No	idont know	Total	Chi-square &p-value
Male	**Count**	638	189	98	75	1000	
	Expected Count	811.0	96.0	54.0	39.0	1000.0	
	% Total	31.9%	9.45%	4.9%	3.75%	50.0%	
Female	**Count**	984	192	108	3	1000	Chi-square=392.16
	Expected Count	811.0	96.0	54.0	39.0	1000.0	
	% Total	49.2%	9.6%	5.4%	0.15%	50.0%	p= 0.000
Total	**Count**	1622	192	108	78	2000	
	Expected Count	1622.0	192.0	108.0	.0	2000.0	
	% Total	81.1%	9.6%	5.4%	3.9%	100.0%	

As shown in Table 4.96,31.9% male students and 49.2% female students never drank alcohol. 9.45% of male students and 9.6% of female student's parents or guardians were aware of the child's drinking habit. 4.9%

male and 5.4% female informed that parents or guardians were not aware of the child's drinking habit. 3.75% male and 0.15% female didn't know.

The obtained Chi-square for this group was 392.16 which was significant at 0.05 level of significance, as the obtained p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Do your parents or guardians know that you drink alcohol?" It was noted that the response pattern of the male and female on the issue "Do your parents or guardians know that you drink alcohol?" were different. Male students were disproportionately associated with the response of never consumed alcohol, female students were disproportionately associated with the response of parent or guardian, were aware, not aware and I don't know.

The graphical representation of the responses to "do your parents or guardian know that you drink alcohol" among male and female students is presented in figure 4.67.

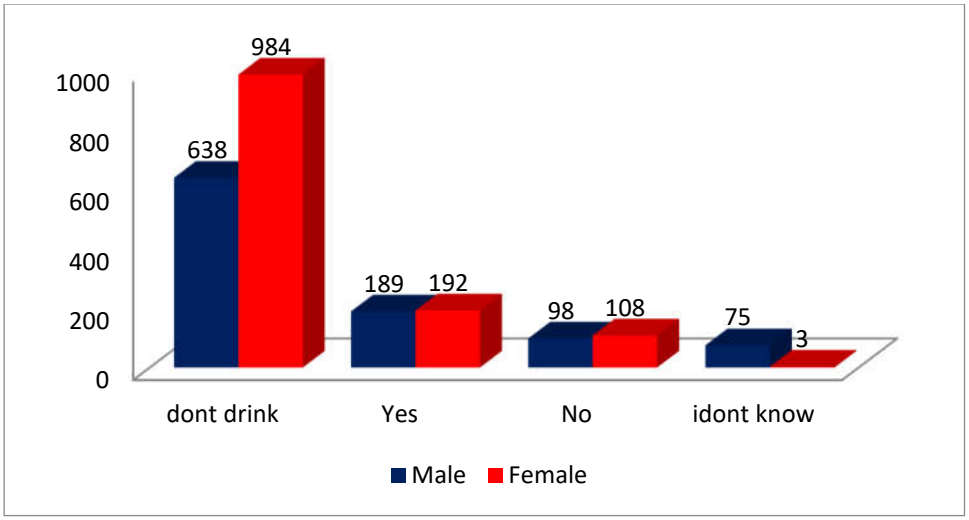

Figure 4.67: *"Do your parents or guardians know that you drink alcohol?" among male and female students*

Table 4.97

Analysis on the question "Do your parents or guardians know that you drink alcohol?" among government, aided and self-financing students

Category		I do not drink Alcohol	Yes	No	I do not know	Total	Chi-square & P value
Government	Count	551	33	47	49	680	Chi- square = 13.831, P = 0.032
	Expected Count	553.9	43.5	41.1	41.5	680.0	
	% of Total	27.6%	1.7%	2.4%	2.5%	34.0%	
Aided	Count	532	51	28	29	640	
	Expected Count	521.3	41.0	38.7	39.0	640.0	
	% of Total	26.6%	2.6%	1.4%	1.5%	32.0%	
self-financing	Count	546	44	46	44	680	
	Expected Count	553.9	43.5	41.1	41.5	680.0	
	% of Total	27.3%	2.2%	2.3%	2.2%	34.0%	
Total	Count	1629	128	121	122	2000	
	Expected Count	1629.0	128.0	121.0	122.0	2000.0	
	% of Total	81.5%	6.4%	6.1%	6.1%	100.0%	

As shown in Table 4.97, 81% government, 83.1% aided, 80.3% self-financing students never drink. 4.9% government, 8% aided, 6.5% self-financing students told that the parents knew about children consume alcohol. 6.9% government, 4.4% aided, 6.8% self-financing students told that the parents didn't know about children consume alcohol. 7.2% government, 4.5% aided, 6.5% self-financing students told that they don't know.

Chi-square value for this group obtained was 13.831 which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.032 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of

college and the response on the question of "Do your parents or guardians know that you drink alcohol?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Do your parents or guardians know that you drink alcohol?" were different. Government college students were disproportionately associated with the response of no and I don't know. Aided college students were disproportionately associated with the response of never drink alcohol and yes. self-financingcollege students were disproportionately associated with the response of yes, no and I don't know.

The graphical representation of the responses to "do your parents or guardian know that you drink alcohol" among government, aided and self-financing students is presented in figure 4.68.

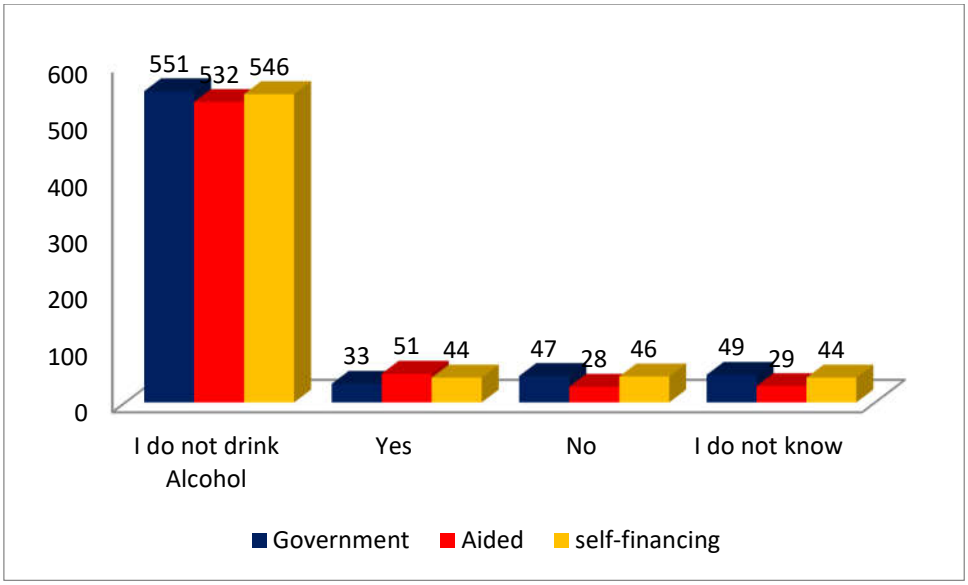

Figure 4.68: *"Do your parents or guardians know that you drink alcohol?" among government, aided and self-financing students*

Table 4.98

Analysis on the question "Which of your parents or guardian drink alcohol?" among urban and rural area students

		Neither	My fatheror male guardian	My mother or female guardian	Both	Total	Chi-square & p-value
Urban	**Count**	568	352	40	40	1000	Chi-square= 10.968 p= 0.012
	Expected Count	541.0	359.0	50.0	50.0	1000.0	
	% Total	28.4%	17.6%	2.0%	2.0%	50.0%	
Rural	**Count**	514	366	60	60	1000	
	Expected Count	541.0	359.0	50.0	50.0	1000.0	
	% Total	25.7%	18.3%	3.0%	3.0%	50.0%	
Total	**Count**	1082	718	100	100	2000	
	Expected Count	1082.0	718.0	100.0	100.0	2000.0	
	% Total	54.1%	35.9%	5.0%	5.0%	100.0%	

Area wise comparison of the alcohol consumption of parents or guardians shows that parents or guardian of 56.8% of urban engineering students and 51.4% of rural engineering college students never consumed alcohol. And father or male guardian of 35.2% of urban engineering students and 36.6% of rural engineering college students drank alcohol. Mother or female guardian of 35.2% of urban engineering college students and 36.6% of rural engineering students consumed alcohol. Parents and guardians of 4.0% of urban engineering college students in Kerala and 6.0% of rural engineering students in Kerala consumed alcohol.

The value of Chi-Square obtained is 10.968, which is significant at 0.05 levels of significance as the p-value obtained is 0.012. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally about which of their parents or guardian drink alcohol.

The graphical representation of the responses to the question to "which of your parent or guardian drink alcohol" among urban and rural area students is presented in figure 4.69.

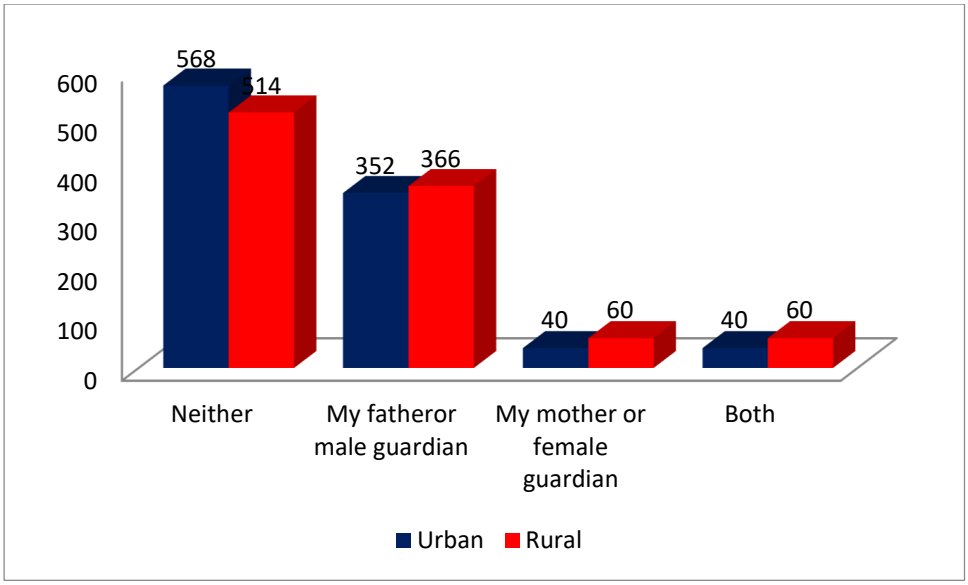

Figure 4.69: *"Which of your parents or guardian drink alcohol?" among urban and rural area students*

Table 4.99

Analysis on the question "Which of your parents or guardian drink alcohol?" among male and female students

		Neither	Father or male guardian	Mother or female guardian	both	Total	Chi-square & p-value
Male	**Count**	382	613	3	2	1000	Chi-square=224.51 p= 0.000
	Expected Count	548.0	449.5	1.5	1.0	1000.0	
	% Total	19.1%	30.9%	0.15%	0.1%	50.0%	
Female	**Count**	714	286	0	0	1000	
	Expected Count	548.0	452.0	0.0	0.0	1000.0	
	% Total	35.2%	14.3%	0.0%	0.0%	50.0%	
Total	**Count**	1096	904	3	2	2000	
	Expected Count	1096.0	904.0	3.0	1.0	2000.0	
	% Total	54.8%	45.2%	0.15%	0.1%	100.0%	

As shown in Table 4.99,19.1% male students and 35.2% female students expressed that neither parent nor guardian consumed alcohol. 30.9% male students and 14.3% female students told that, father or male guardian drank alcohol. 0.15% male students informed that mother or female guardian consumed alcohol. 0.1% male students told that both father and mother or guardians consumed alcohol.

The obtained Chi-square for this group was 224.51 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Which of your parents or guardian drink alcohol?" It was noted that the response pattern of the male and female on the issue "Which of your parents or guardian drink alcohol?" were different. Male students were disproportionately associated with the response of male guardian or father consumed alcohol, female students were disproportionately associated with the response of neither parent nor guardian consume alcohol, mother or female guardian, both parents consume alcohol.

The graphical representation of the responses to the question to "which of your parent or guardian drink alcohol"? among male and female students is presented in figure 4.70.

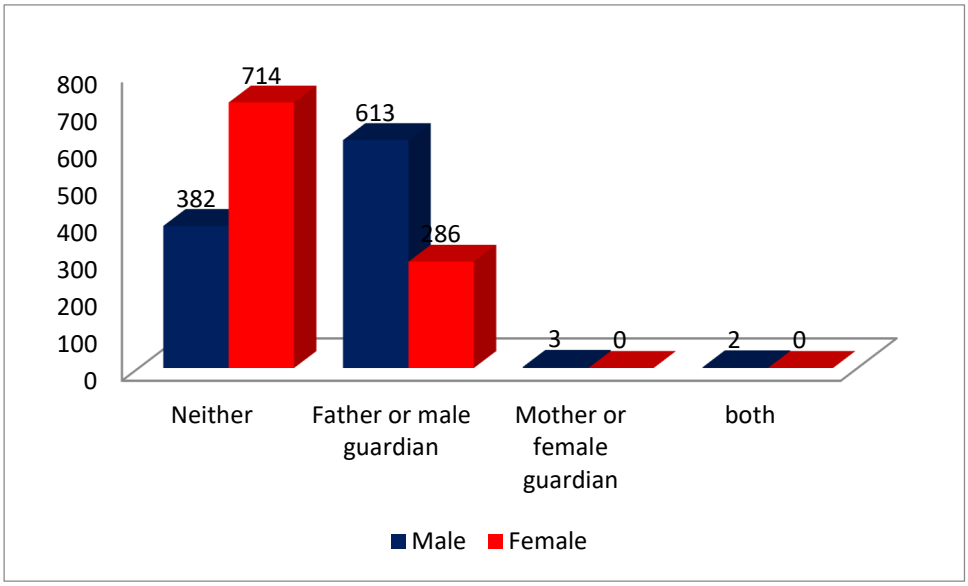

Figure 4.70: *"Which of your parents or guardian drink alcohol?" among male and female students*

Table 4.100

Analysis on the question "Which of your parents or guardian drink alcohol?" among government, aided and self-financing students

Category		Neither	My father or male guardian	My mother or Female Guardian	Both	Total	Chi-square & p-value
Government	**Count**	358	242	40	40	680	Chi-square = 18.861, p = 0.004
	Expected Count	367.9	244.1	34.0	34.0	680.0	
	% of Total	17.9%	12.1%	2.0%	2.0%	34.0%	
Aided	**Count**	379	221	20	20	640	
	Expected Count	346.2	229.8	32.0	32.0	640.0	
	% of Total	19.0%	11.1%	1.0%	1.0%	32.0%	
self-financing	**Count**	345	255	40	40	680	
	Expected Count	367.9	244.1	34.0	34.0	680.0	
	% of Total	17.3%	12.8%	2.0%	2.0%	34.0%	
Total	**Count**	1082	718	100	100	2000	
	Expected Count	1082.0	718.0	100.0	100.0	2000.0	
	% of Total	54.1%	35.9%	5.0%	5.0%	100.0%	

As shown in Table 4.100, 52.6% government, 59.2% aided, 50.7% self-financing students told neither parent or guardian drank. 35.6% government, 34.5% aided, 37.5% self-financing students informed that father or male guardian drank alcohol. 5.9% government, 3.1% aided, 5.9% self-financing students told that mother or female guardian drank alcohol. 5.9% government, 3.1% aided, 5.9% self-financing students informed that, both the parent or guardian drank alcohol.

The obtained value of Chi-square for this group was 18.861 which was significant at 0.05 level of significance, as obtained p-value 0.004 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "Which of your parents or guardian drink alcohol?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Which of your parents or guardian drink alcohol?" were different. Government college students were disproportionately associated with the response of mother or female guardian and both. Aided college students were disproportionately associated with the response of neither parent nor guardian. Self-financing college students were disproportionately associated with the response of father or male guardian, mother or female guardian and both.

The graphical representation of the responses to the question to "which of your parent or guardian drink alcohol" among government, aided and self-financing students is presented in figure 4.71

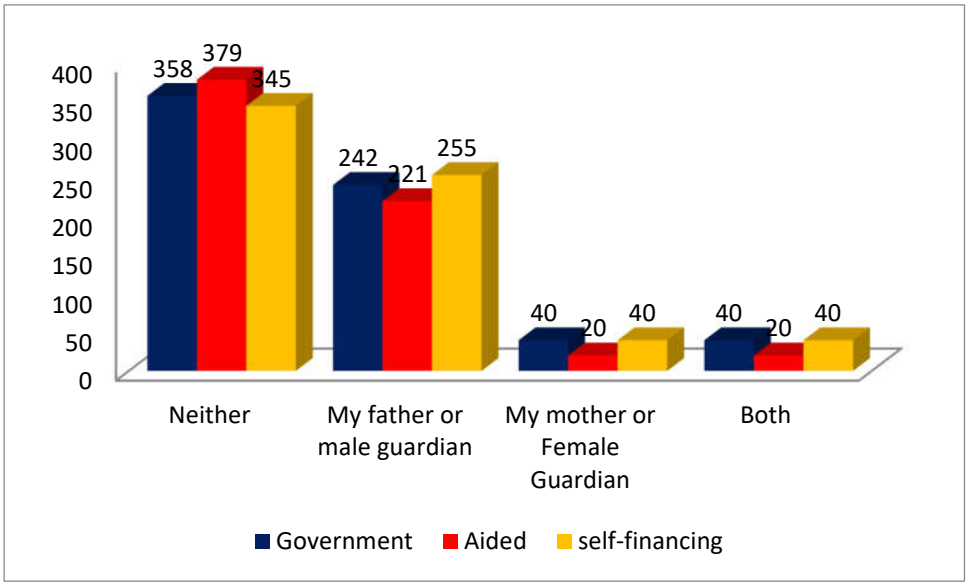

Figure 4.71: *"Which of your parents or guardian drink alcohol?" among government, aided and self-financing students*

Table 4.101

Analysis on the question "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" among urban and rural area students

		0 times	1 or 2 times	3 to 9 times	10 or more times		Chi-square & p-value
Urban	**Count**	689	226	42	43	1000	
	Expected Count	652.5	248.5	52.0	47.0	1000.0	
	% Total	34.45%	11.3%	2.1%	2.15%	50.0%	
Rural	**Count**	616	271	62	51	1000	Chi-square= 12.68, p= 0.000
	Expected Count	652.5	248.5	52.0	47.0	1000.0	
	% Total	30.8%	13.55%	3.1%	2.55%	50.0%	
Total	**Count**	1305	497	104	94	2000	
	Expected Count	1305.0	500.0	100.0	100.0	2000.0	
	% Total	65.25%	24.85%	5.2%	4.7%	100.0%	

Area wise comparison of the frequency of the drug use shows that 70.0% of urban engineering college students and 60.0% of rural engineering college students never used drugs such as, marijuana, ganja or hashish in their life. 22.0% of urban engineering students and 28.0% of rural engineering

college students have used drug such as marijuana, hashish or ganja one or two times in their life. 4.0% of urban engineering college students and 6.0% of rural engineering students have used drug such as marijuana, hashish or ganja three to nine times in their life. 4.0% of urban engineering college students and 6.0% of rural engineering students have used drug such as marijuana, hashish or ganja ten or more times in their life..

The value of Chi-Square obtained is 22.892, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally used drugs. The study shows that rural engineering college students are more likely to have drugs than that of urban students.

The graphical representation of the responses to the frequency of drug used in their life among urban and rural area students is presented in figure 4.72.

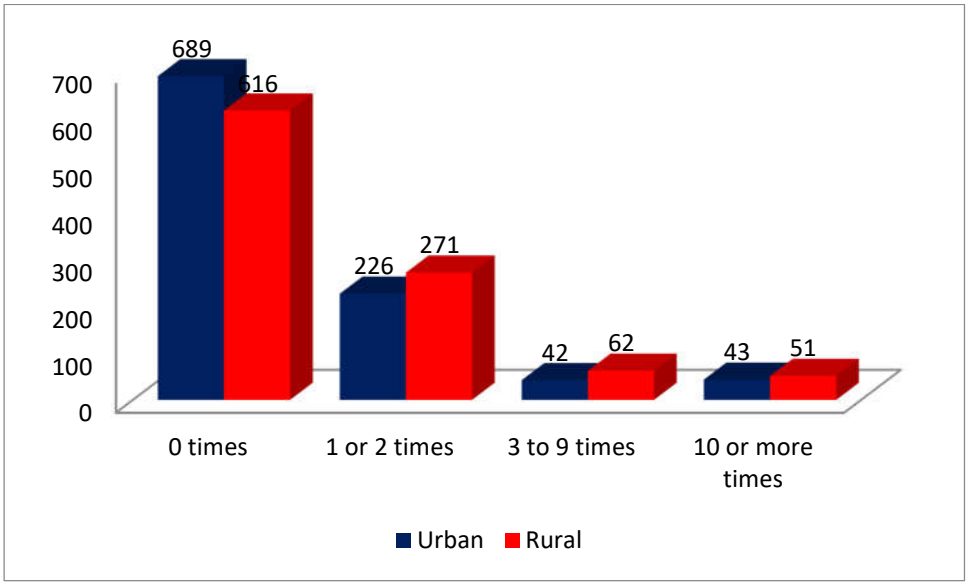

Figure 4.72: *"How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" among urban and rural area students*

Table 4.102

Analysis on the question "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?"among male and female students

		0 time	1or 2 times	3 to 9 times	10 or more times	Total	Chi-square & P value
Male	**Count**	546	348	105	1	1000	Chi-square=317.42 P= 0.000
	Expected Count	721.5	223.0	55.0	0.5	1000.0	
	% Total	27.3%	17.4%	5.25%	0.05%	50.0%	
Female	**Count**	897	98	5	0	1000	
	Expected Count	721.5	223.0	55.0	0.0	1000.0	
	% Total	44.85%	4.9%	0.25%	0.0%	50.0%	
Total	**Count**	1443	446	110	1	2000	
	Expected Count	1443.0	446.0	110.0	1.0	2000.0	
	% Total	72.15%	22.3%	5.5%	0.05%	100.0%	

As shown in Table 4.102,27.3% male students and 44.85% female students never used drugs. 17.4% male students and 4.9% female students used drugs one or two times. 5.25% male students and 0.25% female students used drugs three or nine times. 0.05% male students used drugs ten or more times.

The Chi-square value obtained for this group was 317.42 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?"It was noted that the response pattern of the male and female on the issue "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?"were different. Male students were disproportionately associated with the response of never used drugs, female students were disproportionately associated with the response of using drugs one or two times, three or nine times and ten or more times.

The graphical representation of the responses to the frequency of drug used in their life among male and female students is presented in figure 4.73.

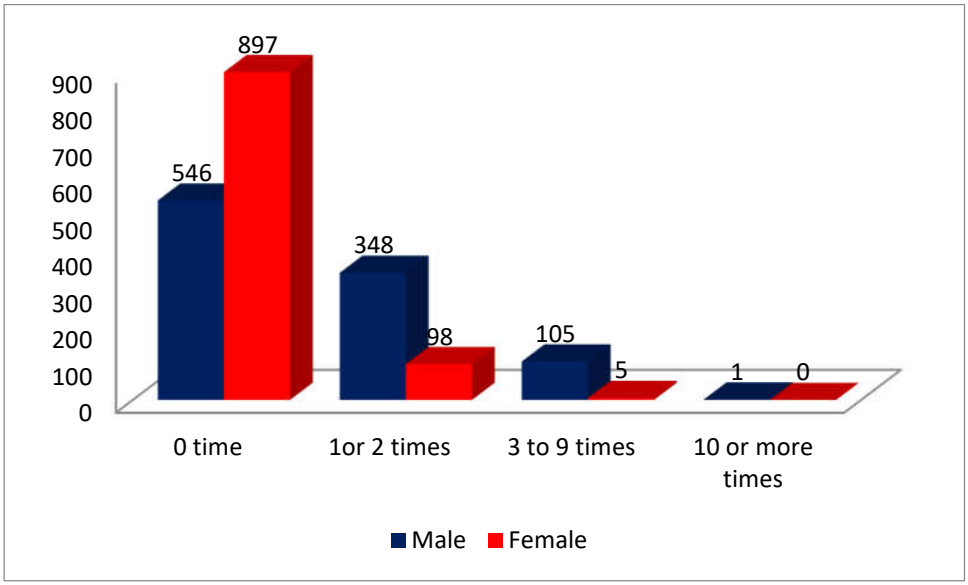

Figure 4.73 *"How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" among male and female students*

Table 4.103

Analysis on the question "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" among government, aided and self-financing students

Category		0 time	1 or 2 times	3 to 9 times	10 or more times	Total	Chi-square & p-value
Government	Count	437	163	39	41	680	Chi-square = 21.20, p= 0.000
	Expected Count	446.12	164.85	35.03	34.0	680.0	
	% of Total	21.85%	8.15%	1.95%	2.05%	34.0%	
Aided	Count	444	136	23	17	640	
	Expected Count	406.76	150.3	31.939	31.0	640.0	
	% of Total	22.2%	6.8%	1.15%	0.85%	32.0%	
Self-financing	Count	418	181	40	41	680	
	Expected Count	446.12	164.85	35.03	34.0	680.0	
	% of Total	21.9%	9.05%	2.0%	2.05%	34.0%	
Total	Count	1299	480	102	99	2000	
	Expected Count	1299.0	480.0	102.0	100.0	2000.0	
	% of Total	64.95%	24.0%	5.1%	4.95%	100.0%	

As shown in Table 4.103, 64.7% government, 68.8% aided, 61.8% self-financing never used drugs. 23.5% government, 25% aided, 26.5% self-financing students used drugs for one or two times. 5.9% government, 3.1% aided, 5.9% self-financing students used drugs for three or nine times. 5.9% government, 3.1% aided, 5.9% self-financing students used drugs for ten or more times.

The obtained value of Chi-square for this group was 16.900 which was significant at 0.05 level of significance, as obtained p-value 0.01 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How many times have you used drugs, such as. It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" were different. Government college students were disproportionately associated with the response of three to nine times and 10 or more times. Aided college students were disproportionately associated with the response of zero time. Self-financing college students were disproportionately associated with the response of one or two times, three to nine times and 10 or more times.

The graphical representation of the responses to the frequency of drug used in their life among government, aided and self-financing students is presented in figure 4.74.

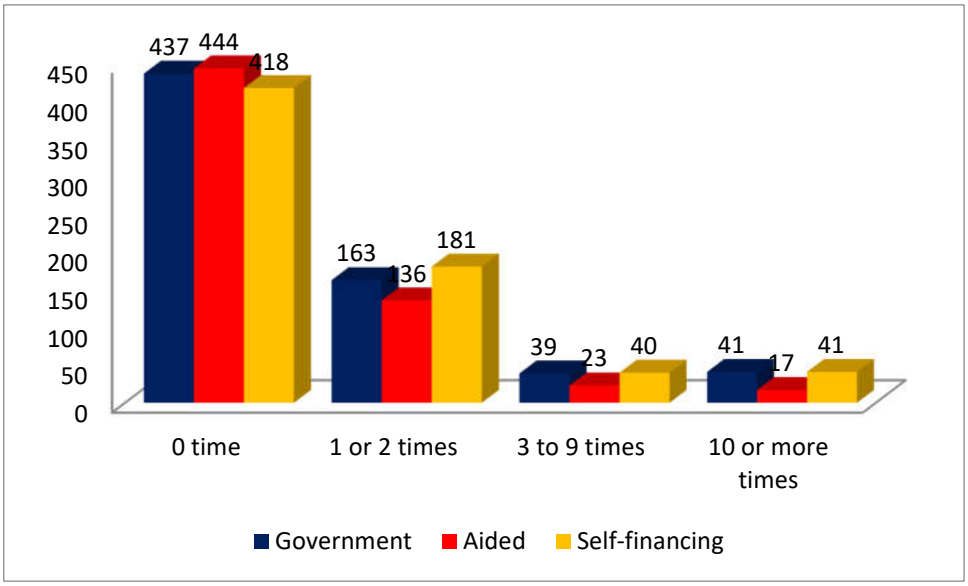

Figure 4.74. *"How many times have you used drugs, such as Marijuana, Ganja, Hashish in your life?" among government, aided and self-financing students*

Table 4.104

Analysis on the question "How many times did you use Ganja in the past 30 days?" among urban and rural area students

		0 times	1 or 2 times	3 to 9 times	Total	Chi-square & p-value
Urban	**Count**	920	60	20	1000	
	Expected Count	900.0	90.0	10.0	1000.0	
	% Total	46.0%	3.0%	1.0%	50.0%	
Rural	**Count**	880	120	0	1000	Chi- square= 40.889,
	Expected Count	900.0	90.0	10.0	1000.0	
	% Total	44.0%	6.0%	0.0%	50.0%	p= 0.000
Total	**Count**	1800	180	20	2000	
	Expected Count	1800.0	180.0	20.0	2000.0	
	% Total	90.0%	9.0%	1.0%	100.0%	

Area wise comparison of the frequency of the ganja use per day shows that 92.0% of urban engineering college students and 88.0% of rural engineering college students never tried ganja. 6.0% of urban engineering

students and 12.0% of rural engineering college students have used ganja one or two times during past 30 days. 2.0% of urban engineering college students and 0.0% of rural engineering students have used ganja three to nine times during past 30 days. And urban students are using ganja many times than that of rural students.

The value of Chi-Square obtained is 40.889, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural students have not equally used ganga during past 30 days. Rural engineering college students have more tendency to use ganja than that of urban engineering college students.

The graphical representation of the responses to the frequency of ganja use during past 30 days among urban and rural area students is presented in figure 4.75.

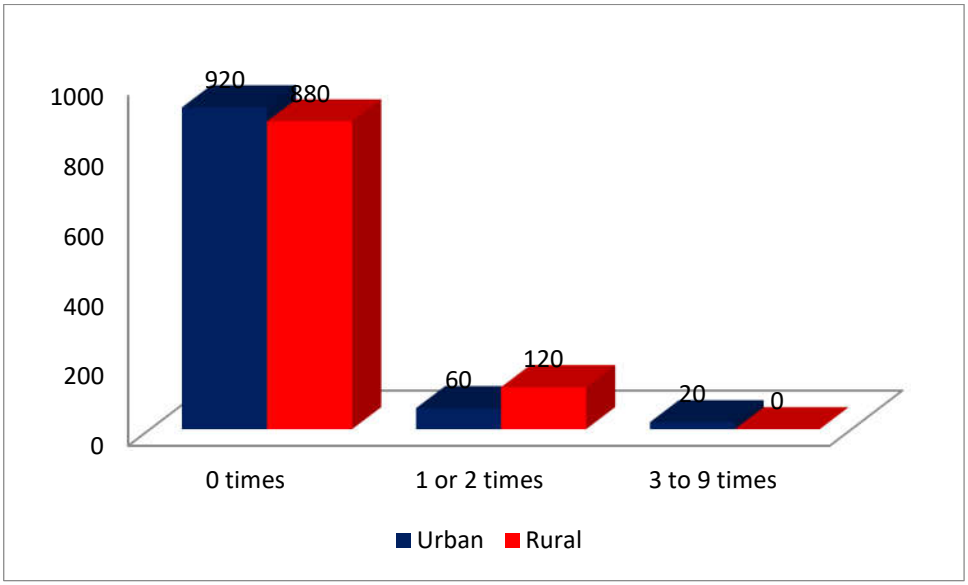

Figure 4.75: *"How many times did you use Ganja in the past 30 days?" among urban and rural area students*

Table 4.105

Analysis on the question "How many times did you use Ganja in the past 30 days?" among male and female students

		0 time	1 or 2 times	3 to 9 times	Total	Chi-square &p-value
Male	**Count**	546	398	56	1000	
	Expected Count	721.5	242.5	36.0	1000.0	
	% Total	36.45%	12.9%	0.65%	50.0%	
Female	**Count**	897	87	16	1000	Chi-square=307.03
	Expected Count	721.5	242.5	36.0	1000.0	
	% Total	44.85%	4.35%	0.8%	50.0%	P= 0.000
Total	**Count**	1443	485	72	2000	
	Expected Count	1443.0	485.0	72.0	2000.0	
	% Total	72.15%	24.25%	3.6%	100.0%	

As shown in Table 4.105,36.45% male students and 44.85% female students never used ganja in the past 30 days. 12.9% male students and 4.35% female students used ganja one or two times. 0.65% male students and 0.8% female students used ganja three or nine times.

The obtained Chi-square value for this group was 307.03 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many times did you use Ganja in the past 30 days?"It was noted that the response pattern of the male and female students on the issue "How many times did you use Ganja in the past 30 days?" were different. Male students were disproportionately associated with the response of using ganja for three or nine times in the past 30 days. Female students were disproportionately associated with the response of using ganja one or two times.

The graphical representation of the responses to the frequency of ganja use during past 30 days among male and female students is presented in figure 4.76.

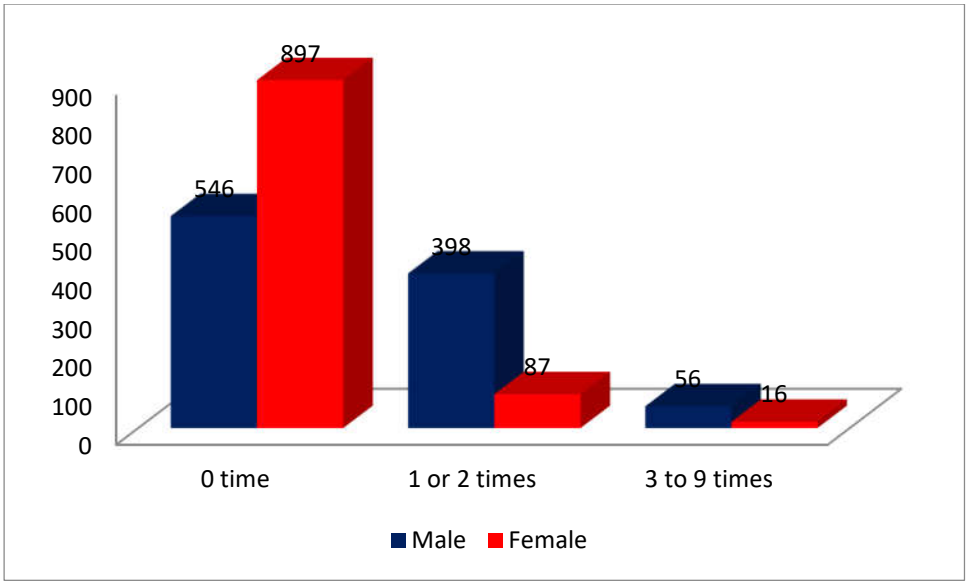

Figure 4.76: *"How many times did you use Ganja in the past 30 days?" among male and female students*

Table 4.106

Analysis on the question "How many times did you use Ganja in the past 30 days?" among government, aided and self-financing students

Category		0 times	1 or 2 times	3 to 9 times	Total	Chi-square & p-value
Government	Count	581	99	0	680	Chi- square = 80.065, p = .000
	Expected Count	609.96	64.26	5.78	680.0	
	% of Total	29.05%	4.95%	0.0%	34.0%	
Aided	Count	601	22	17	640	
	Expected Count	574.08	60.48	5.44	640.0	
	% of Total	30.05%	1.1%	0.85%	32.0%	
self-financing	Count	612	68	0	680	
	Expected Count	609.96	64.26	5.78	680.0	
	% of Total	30.6%	3.4%	0.0%	34.0%	
Total	Count	1794	189	17	2000	
	Expected Count	1794.0	189.0	17.0	2000.0	
	% of Total	89.7%	9.45%	0.85%	100.0%	

As shown in Table 4.106, 88.2% government, 93.8% aided, 88.2% self-financing students never used ganja. 11.8% government, 3.1% aided, 11.8% self-financing students used one or two times. 3.1% aided students used ganja for three or nine times in the past 30 days.

The obtained Chi-square for this group was 80.065 which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How many times did you use Ganja in the past 30 days?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many times did you use Ganja in the past 30 days?" were different. Government college students were disproportionately associated with the response of one or two times. Aided college students were disproportionately associated with the response of zero time and three to nine times. Self-financing college students were disproportionately associated with the response of one or two times.

The graphical representation of the responses to the frequency of ganjause during past 30 days among government, aided and self-financing students is presented in figure 4.77.

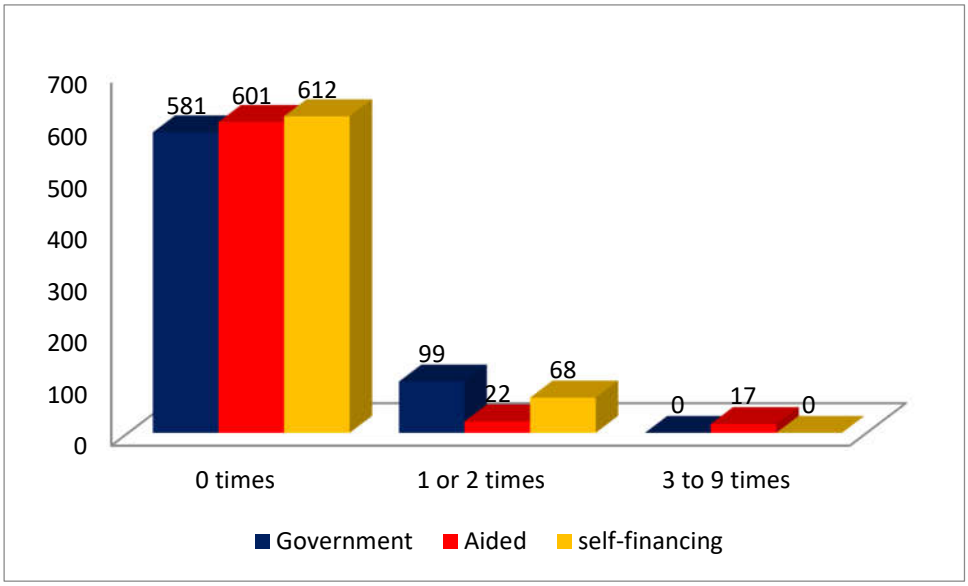

Figure 4.77: *"How many times did you use Ganja in the past 30 days?" among government, aided and self-financing students*

Table 4.107

Analysis on the question "What was your age when you first tried marijuana or ganja?" among urban and rural area students

		I have never tried marijuana or ganja	16 years old or younger	17 to 18 years old	Total	Chi-square & p- value
Urban	**Count**	920	60	20	1000	**Chi-square= 40.889, p= 0.000**
	Expected Count	900.0	90.0	10.0	1000.0	
	% Total	46.0%	3.0%	1.0%	50.0%	
Rural	**Count**	880	120	0	1000	
	Expected Count	900.0	90.0	10.0	1000.0	
	% Total	44.0%	6.0%	0.0%	50.0%	
Total	**Count**	1800	180	20	2000	
	Expected Count	1800.0	180.0	20.0	2000.0	
	% Total	90.0%	9.0%	1.0%	100.0%	

Area wise comparison of the age of first use of drug shows that 92.0% of urban engineering college students and 88.0% of rural engineering college students never tried marijuana or ganja. 6.0% of urban engineering students and 12.0% of rural engineering college students have used marijuana or ganja at the age of sixteen years or younger. 2.0% of urban engineering college students and 0.0% of rural engineering students have used marijuana or ganja at the age of seventeen to eighteen years.

The value of Chi-square obtained is 40.889, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural have not equally used marijuana or ganja and rural engineering college students are likely to have it than urban engineering students.

The graphical representation of the responses to what was your age when you first tried drug among urban and rural area students is presented in figure 4.78.

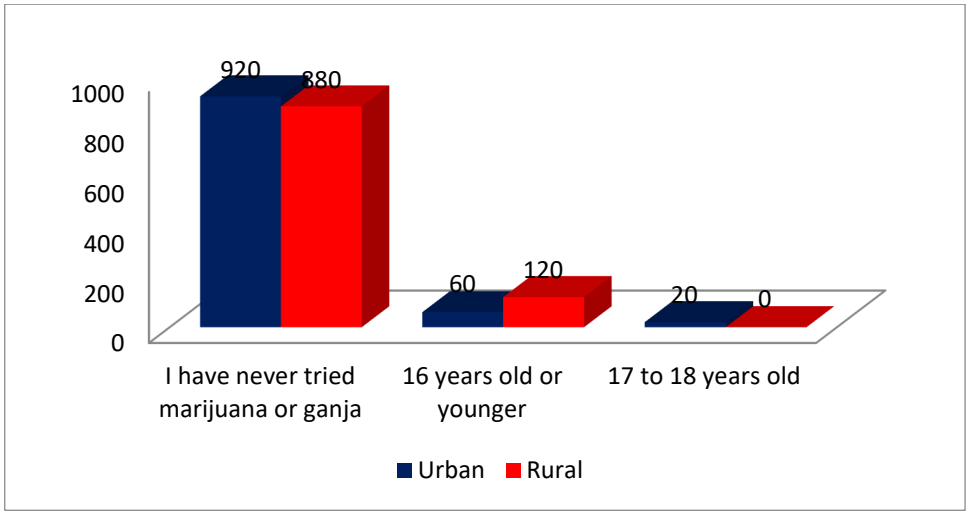

Figure 4.78: *"What was your age when you first tried marijuana or ganja?" among urban and rural area students*

Table 4.108

Analysis on the question "What was your age when you first tried marijuana or ganja?" among male and female students

		Never tried	16 years or younger	17 or 18 years	Total	Chi-square & P value
Male	**Count**	546	187	267	1000	Chi-square=376.71 P= 0.000
	Expected Count	721.5	145.0	133.5	1000.0	
	% Total	27.3%	9.35%	13.35%	50.0%	
Female	**Count**	897	103	0	1000	
	Expected Count	721.5	145.0	133.5	1000.0	
	% Total	44.85%	5.15%	0.0%	50.0%	
Total	**Count**	1443	290	267	2000	
	Expected Count	1443.0	290.0	267.0	2000.0	
	% Total	72.15%	14.5%	13.35%	100.0%	

As shown in Table 128,27.3% male students and 44.85% female students never tried marijuana or ganja. 9.35% male students and 5.15% female students tried ganja first time at the age of 16 years or before. 13.35% male students tried ganja first time at the age of 17 or 18years.

The obtained value of Chi-square for this group was 376.71 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "What was your age when you first tried marijuana or ganja?"It was noted that the response pattern of the male and female students on the issue "What was your age when you first tried marijuana or ganja?" were different. Male students were disproportionately associated with the response of tried marijuana or ganja first time at the age of 17 or 18 years. Female students were disproportionately associated with the response of tried marijuana or ganja first time at the age of 16 years or early.

The graphical representation of the responses to what was your age when you first tried drug among male and female students is presented in figure 4.79.

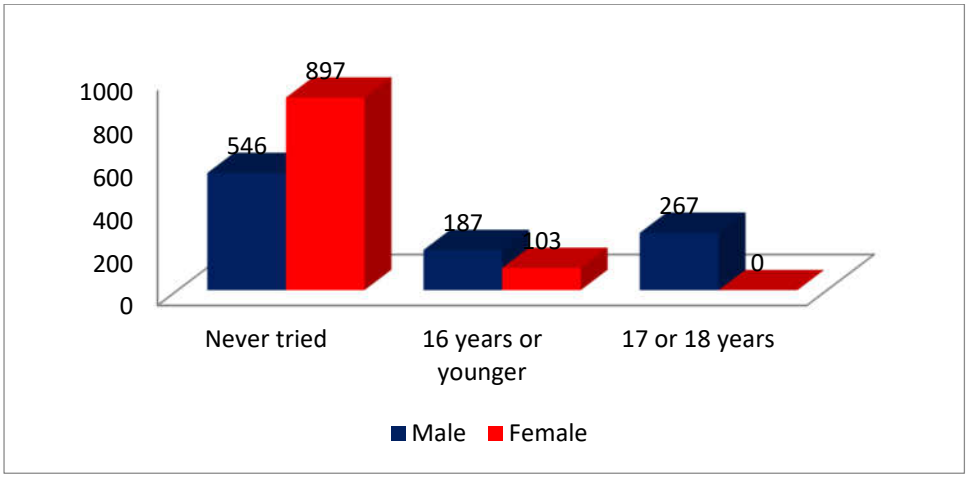

Figure 4.79: *"What was your age when you first tried marijuana or ganja?" among male and female students*

Table 4.109

Analysis on the question "What was your age when you first tried marijuana or ganja?" among government, aided and self-financing students

Category		I have never tried Marijuana or Ganja	16 years old or younger	17 to 18 years old	Total	Chi-square & p value
Government	**Count**	613	67	0	680	Chi-square = 64.065, p = .000
	Expected Count	618.46	55.08	6.46	680.0	
	% of Total	30.65%	3.35%	0.0%	34.0%	
Aided	**Count**	598	23	19	640	
	Expected Count	582.08	51.84	6.08	640.0	
	% of Total	29.9%	1.15%	0.95%	32.0%	
self-financing	**Count**	608	72	0	680	
	Expected Count	618.46	55.08	6.46	680.0	
	% of Total	30.4%	3.6%	0.0%	34.0%	
Total	**Count**	1819	162	19	2000	
	Expected Count	1819.0	162.0	19.0	2000.0	
	% of Total	90.95%	8.1%	0.95%	100.0%	

As shown in Table 4.108, 88.2% government, 93.8% aided, 88.2% self-financing students never used marijuana or ganja. 11.8% government, 3.1% aided, 11.8% self-financing students used ganja at the age of 16 years or younger. 3.1% aided students used ganja at the age of 17 to 18 years.

The obtained Chi-square for this group was 80.065 which were significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "What was your age when you first tried marijuana or ganja?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "What was your age when you first tried marijuana or ganja?" were different. Government college students were disproportionately associated with the response of 16 years or younger. Aided college students were disproportionately associated with the response of never used ganja. Self-financing college students were disproportionately associated with the response of 16 years or younger.

The graphical representation of the responses to what was your age when you first tried drug among government, aided and self-financing students is presented in figure 4.80.

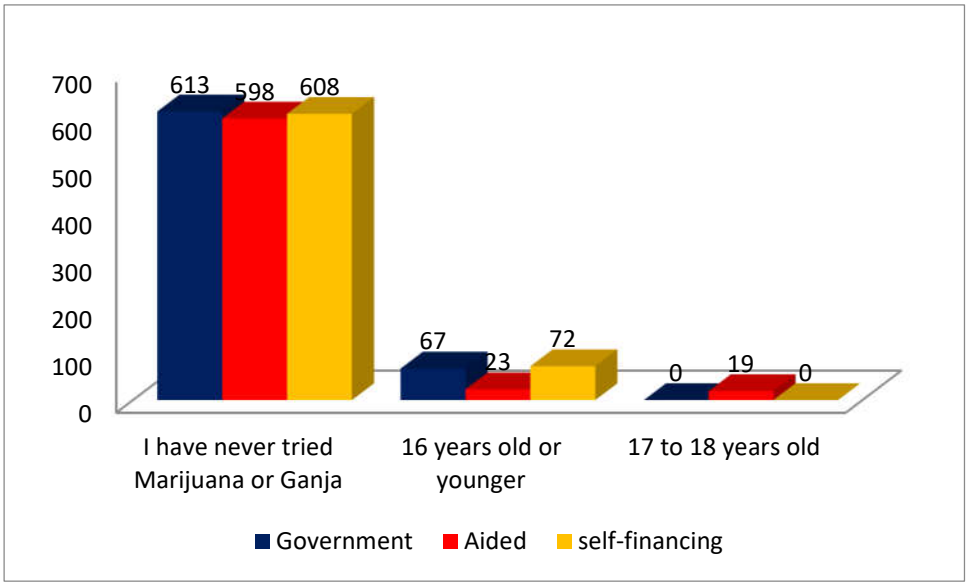

Figure 4.80: *"What was your age when you first tried marijuana or ganja?" among government, aided and self-financing students.*

Table 4.110

Analysis on the question "How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?" among urban and rural area students

		0 times	1 or 2 times	3 to 9 times	Total	Chi-square & p-value
Urban	**Count**	841	119	40	1000	
	Expected Count	800.0	148.5	51.5	1000.0	
	% Total	42.05%	5.95%	2.0%	50.0%	
Rural	**Count**	759	178	63	1000	Chi- square= 20.000,
	Expected Count	800.0	148.5	51.5	1000.0	
	% Total	37.95%	8.9%	3.15%	50.0%	p= 0.000
Total	**Count**	1600	297	103	2000	
	Expected Count	1600.0	297.0	103.0	2000.0	
	% Total	80.0%	14.85%	5.15%	100.0%	

Area wise comparison of the frequency of the drugs inject into their body by needles or syringes shows that 84.0% of urban engineering college students and 76.0% of rural engineering college students never used needles or syringes to inject drugs into their body. 12.0% of urban engineering

students and 18.0% of rural engineering college students have used needles or syringes to inject drugs into their body one or two times in their life time. 4.0% of urban engineering college students and 6.0% of rural engineering students have used needles or syringes to inject drugs into their body three to nine times in their life time.

The value of Chi-Square obtained is 20.000, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural area students have not equally used needles or syringes to inject drugs into their body. Rural engineering college students are more prone to use drugs many times than urban engineering college students.

The graphical representation of the responses to the frequency of use of needles or syringes to inject drugs into their body among urban and rural area students is presented in figure 4.81.

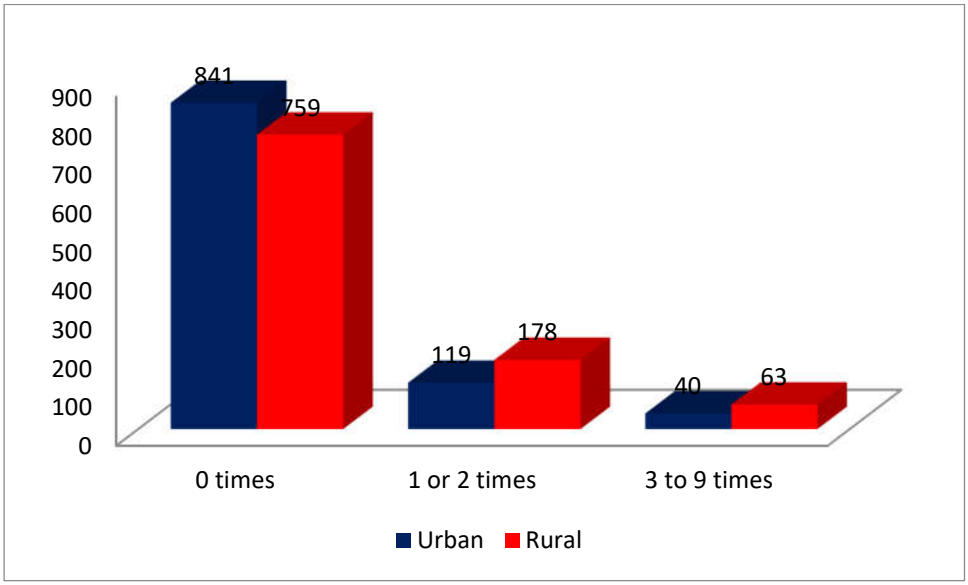

Figure 4.81: *"How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?" among urban and rural area students*

Table 4.111

Analysis on the question "How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?" among male and female students

		0 time	1 or 2 times	3 to 9 times	Total	Chi-square & p-value
Male	**Count**	766	187	47	1000	
	Expected Count	834.0	142.5	23.5	1000.0	
	% Total	38.3%	9.35%	2.35%	50.0%	
Female	**Count**	902	98	0	1000	Chi-square=85.88
	Expected Count	834.0	142.5	23.5	1000.0	
	% Total	45.1%	4.9%	0.0%	50.0%	p= 0.000
Total	**Count**	1668	285	47	2000	
	Expected Count	1668.0	285.0	47.0	2000.0	
	% Total	83.4%	14.25%	2.35%	100.0%	

As shown in Table 4.111, 38.3% male students and 45.1% female students never shared needles or syringes to inject drugs. 9.35% male students and 4.9% female students shared needles for one or two times. 2.35% male students shared needles for three or nine times.

Chi-square for the group was 85.88 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of " How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?"It was noted that the response pattern of the male and female students on the issue " How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?"were different. Male students were disproportionately associated

with the response of shared needles or syringes for one or two times and three or nine times, female students were disproportionately associated with the response of never shared needles or syringes to inject drugs.

The graphical representation of the responses to the frequency of use of needles or syringes to inject drugs into their body among male and female students is presented in figure 4.82.

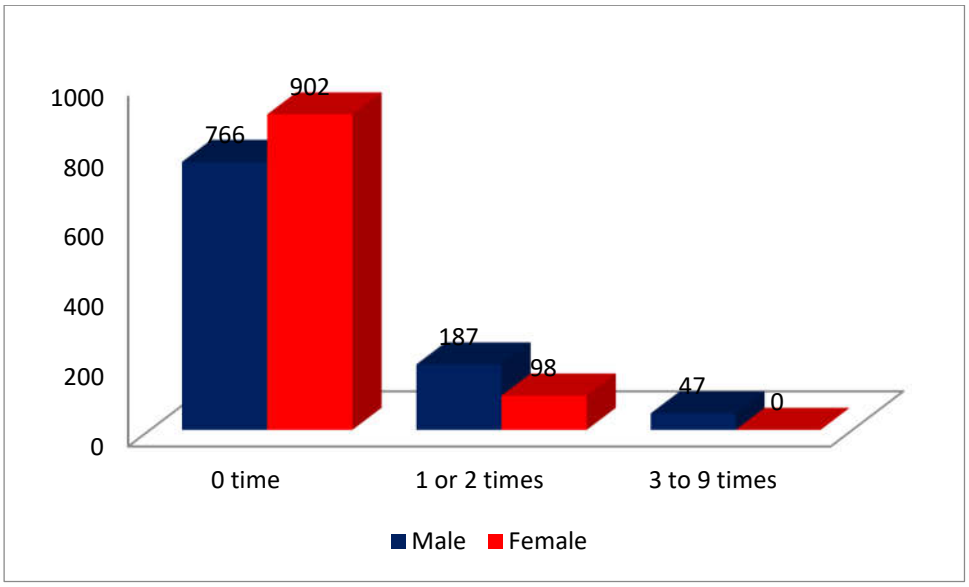

Figure 4.82: *"How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?" among male and female students*

Table 4.112

Analysis on the question "How many times have you shared needles or syringes to inject any drugs into your body during your life?" among government, aided and self-financing students

Category		0 times	1 or 2 times	3 to 9 times	Total	Chi-square &p-value
Government	Count	544	102	34	680	Chi- square = 15.119, p = 0.004
	Expected Count	544.34	103.7	31.96	680.0	
	% of Total	27.2%	5.1%	1.7%	34.0%	
Aided	Count	537	87	16	640	
	Expected Count	512.32	97.6	30.08	640.0	
	% of Total	26.85%	4.35%	0.8%	32.0%	
self-financing	Count	520	116	44	680	
	Expected Count	544.34	103.7	31.96	680.0	
	% of Total	26.0%	5.8%	2.2%	34.0%	
Total	Count	1601	305	94	2000	
	Expected Count	1601.0	305.0	94.0	2000.0	
	% of Total	80.05%	15.25%	4.7%	100.0%	

As shown in Table 112, 79.4% government, 84.4% aided, 76.5% self-financing students never shared needles or syringes. 14.7% government, 12.5% aided, 17.6% self-financing students shared one or two times. 5.9% government, 3.1% aided, 5.9% self-financing students shared needles or syringes to inject any drugs into the body during the life three to nine times.

The obtained value of Chi-square for this group was 15.119 which was significant at 0.05 level of significance, as the p-value obtained is 0.004 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college

and the response on the question of "How many times have you shared needles or syringes to inject any drugs into your body during your life?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many times have you shared needles or syringes to inject any drugs into your body during your life?" were different. Government college students were disproportionately associated with the response of three to nine times. Aided college students were disproportionately associated with the response of zero time. self-financing college students were disproportionately associated with the response of one or two times and three to nine times.

The graphical representation of the responses to the frequency of use of needles or syringes to inject drugs into their body among government, aided and self-financing students is presented in figure 4.83.

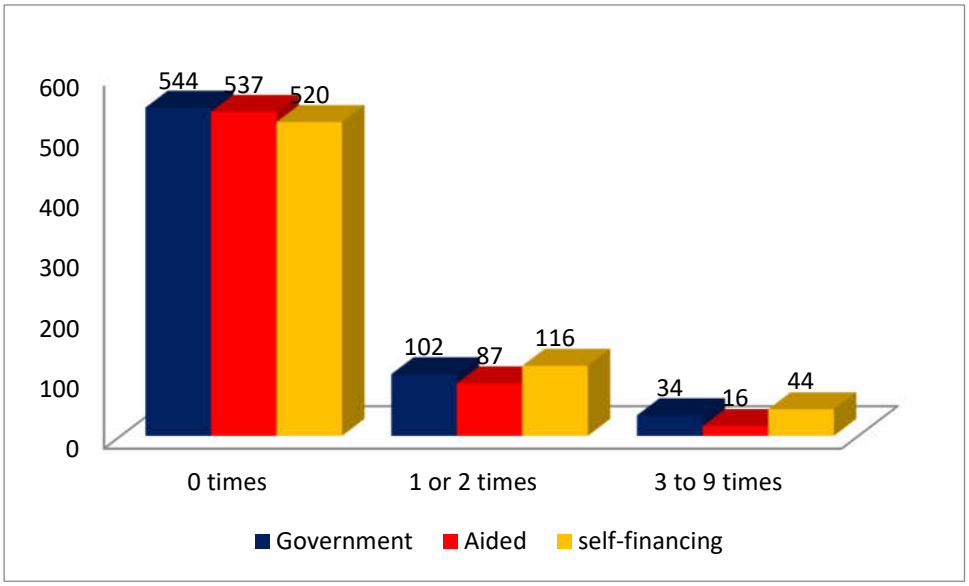

Figure 4.83: *"How many times have you shared needles or syringes to inject any drugs into your body in your lifetime?" among government, aided and self-financing students*

DESCRIPTIVE PROFILES OF HIV/AIDS RELATED KNOWLEDGE

The descriptive profiles of HIV/AIDS related knowledge such as age, gender, height and weight of male and female students are presented in table 4.113, government, aided and self-financing engineering college students in table 4.114, of rural and urban Engineering students in table 4.115 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.116.

Table 4.113

Descriptive		Male			Female		
		Q36	**Q37**	**Q38**	**Q36**	**Q37**	**Q38**
N	**Valid**	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0
Mean		3.99	2.95	1.24	1.10	1.40	1.00
Std. Error of Mean		.004	.009	.019	.009	.021	0.000
Median		4.00	3.00	1.00	1.00	1.00	1.00
Mode		4	3	1	1	1	1
Std. Deviation		.12	.30	.59	.30	.66	.00
Variance		.01	.09	.34	.09	.44	.00
Skewness		-13.52	-6.00	2.30	2.67	1.40	
Std. Error of Skewness		.08	.08	.08	.08	.08	.08
Kurtosis		223.16	35.25	3.82	5.14	.62	
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15
Range		3	2	2	1	2	0
Minimum		2	1	1	1	1	1
Maximum		5	3	3	2	3	1
Percentiles	**25**	4.00	3.00	1.00	1.00	1.00	1.00
	50	4.00	3.00	1.00	1.00	1.00	1.00
	75	4.00	3.00	1.00	1.00	2.00	1.00

The descriptive profiles on HIV and AIDS related knowledge of male and female engineering students

Question number 36,37&38 shown in Appendix II

Table 4.114

The descriptive profiles on HIV and AIDS Related Knowledge of government, aided and self-financing engineering students

Descriptive		Government			Aided			Un-Aided		
		Q36	**Q37**	**Q38**	**Q36**	**Q37**	**Q38**	**Q36**	**Q37**	**Q38**
N	**Valid**	680	680	680	640	640	640	680	680	680
	Missing	0	0	0	0	0	0	0	0	0
Mean		2.55	2.18	1.12	2.53	2.13	1.16	2.55	2.21	1.09
Std. Error of Mean		.056	.036	.015	.059	.037	.020	.056	.035	.014
Median		2.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
Mode		4	3	1	4	3	1	4	3	1
Std. Deviation		1.46	.93	.40	1.48	.94	.51	1.46	.91	.37
Variance		2.13	.87	.16	2.20	.89	.26	2.12	.83	.14
Skewness		-.05	-.37	3.59	-.03	-.26	3.13	-.05	-.42	4.38
Std. Error of Skewness		.09	.09	.09	.10	.10	.10	.09	.09	.09
Kurtosis		-1.95	-1.76	12.42	-1.97	-1.82	8.27	-1.95	-1.67	18.45
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		3	2	2	4	2	2	3	2	2
Minimum		1	1	1	1	1	1	1	1	1
Maximum		4	3	3	5	3	3	4	3	3
Percentiles	**25**	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	3.00	1.00	3.00	3.00	1.00	2.00	3.00	1.00
	75	4.00	3.00	1.00	4.00	3.00	1.00	4.00	3.00	1.00

Question number 36,37&38 shown in Appendix II

Table 4.115

The descriptive profiles on HIV and AIDS Related knowledge of Rural and Urban Engineering students

Descriptive		Urban			Rural		
		Q36	Q37	Q38	Q36	Q37	Q38
N	Valid	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0
Mean		2.56	2.20	1.12	2.54	2.15	1.12
Std. Error of Mean		0.05	0.03	0.01	0.05	0.03	0.01
Median		2.00	3.00	1.00	2.00	3.00	1.00
Mode		4	3	1	4	3	1
Std. Deviation		1.46	.91	.43	1.47	.95	.43
Variance		2.12	.83	.19	2.17	.90	.19
Skewness		-.05	-.41	3.65	-.04	-.29	3.65
Std. Error of Skewness		.08	.08	.08	.08	.08	.08
Kurtosis		-1.95	-1.67	12.27	-1.97	-1.83	12.27
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15
Range		3	2	2	4	2	2
Minimum		1	1	1	1	1	1
Maximum		4	3	3	5	3	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	3.00	1.00	2.00	3.00	1.00
	75	4.00	3.00	1.00	4.00	3.00	1.00

Question number 36,37&38 shown in Appendix II

Table 4.116

The descriptive profiles on HIV and AIDS Related Knowledge of Electronics and communication, Mechanical and Computer Science branch

Descriptive		Electronics and Communication			Mechanical			Computer Science		
		Q36	Q37	Q38	Q36	Q37	Q38	Q36	Q37	Q38
N	Valid	640	640	640	760	760	760	600	600	600
	Missing	0	0	0	0	0	0	0	0	0
Mean		2.53	2.13	1.13	2.58	2.23	1.13	2.53	2.14	1.10
Std. Error of Mean		.059	.037	.016	.052	.033	.017	.060	.038	.016
Median		3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
Mode		4	3	1	4	3	1	4	3	1
Std. Deviation		1.48	0.94	0.41	1.44	0.91	0.47	1.48	0.94	0.40
Variance		2.20	0.89	0.17	2.08	0.84	0.22	2.18	0.87	0.16
Skewness		-0.03	-0.27	3.46	-0.07	-0.48	3.49	-0.02	-0.29	4.07
Std. Error of Skewness		0.10	0.10	0.10	0.09	0.09	0.09	.100	.100	.100
Kurtosis		-1.97	-1.82	11.42	-1.93	-1.63	10.70	-1.97	-1.80	15.73
Std. Error of Kurtosis		0.19	0.19	0.19	0.18	0.18	0.18	.199	.199	.199
Range		4	2	2	3	2	2	3	2	2
Minimum		1	1	1	1	1	1	1	1	1
Maximum		5	3	3	4	3	3	4	3	3
Percentiles	25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	3.00	3.00	1.00	2.00	3.00	1.00	2.00	3.00	1.00
	75	4.00	3.00	1.00	4.00	3.00	1.00	4.00	3.00	1.00

Question number 36,37&38 shown in Appendix II, page

CHI- SQUARE ANALYSIS OF HIV/AIDS RELATED KNOWLEDGE

Table 4.117

Analysis on the question "Can people get HIV infection or AIDS from mosquito bites or by touching?" among urban and rural area students

		Yes	No	I do not know	Possibly	No Answer	Total	Chi-square & p-value
Urban	**Count**	41	460	1	497	1	1000	
	Expected Count	51.5	450.0	1.0	497.0	0.5	1000.0	
	% Total	2.1%	23.0%	0.1%	24.9%	0.1%	50.0%	
Rural	**Count**	62	440	1	497	0	1000	Chi-square= 5.726,
	Expected Count	51.5	450.0	1.0	497.0	0.5	1000.0	
	% Total	3.1%	22.0%	0.1%	24.9%	0.0%	50.0%	
Total	**Count**	103	900	2	994	1	2000	
	Expected Count	103.0	900.0	2.0	994.0	1.0	2000.0	p= 0.221
	% Total	5.2%	45.0%	0.1%	49.7%	0.1%	100.0%	

IN TABLE 4.117, area wise comparison of the study shows that, 4.1% of urban engineering college students and 6.2% of rural engineering college students have believed that HIV/AIDS may get from mosquito bites or by touching. 46% of urban engineering college students and 44% of rural engineering college students have stated that they did not get HIV/AIDS from mosquito bites or by touching. 0.1% of urban engineering college students and 0.1% of rural engineering college students are not aware about whether they get HIV/AIDS from mosquito bites or by touching. 49.7% of urban engineering college students and 49.7% of rural engineering college students have states that possibility is there to get HIV/AIDS infection from mosquito bites or by touching. Area wise comparison of the study proven that 0.1% of urban engineering college students and 0.0% of rural engineering college students did not reply for the said question.

The value of Chi-Square obtained is 5.726, p= 0.221, which is no significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is no statistically significant association between Area and response; that is, both urban and rural have equally states the response for the said question.

The graphical representation of the responses to get HIV/AIDS from mosquito bites or by touching among urban and rural area students is presented in figure 4.84.

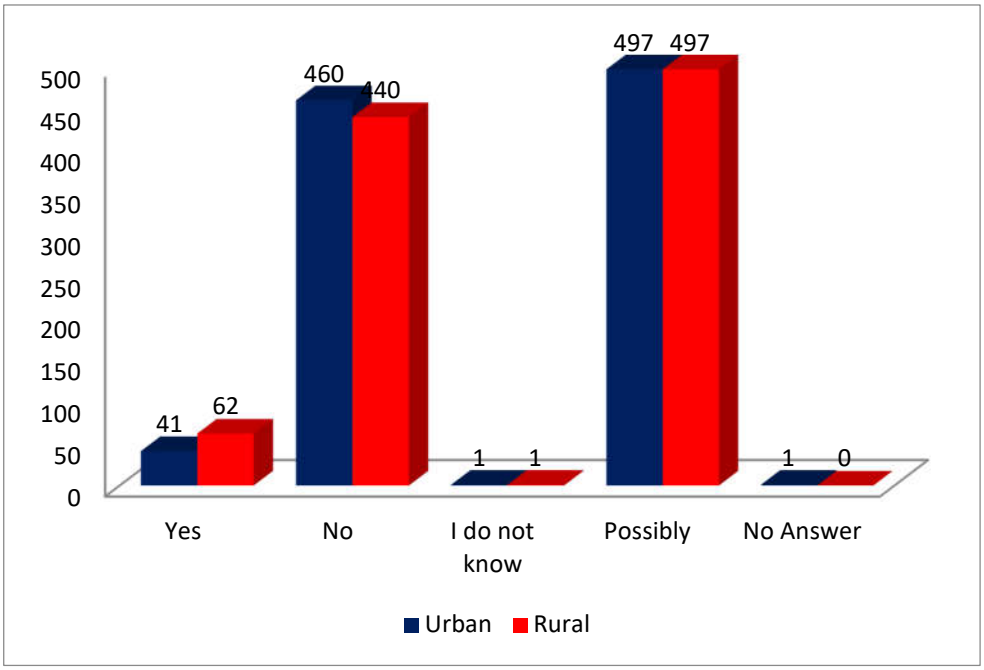

Figure 4.84: *"Can people get HIV infection or AIDS from mosquito bites or by touching?" among urban and rural area students*

Table 4.118

Analysis on the question "Can people get HIV infection or AIDS from mosquito bites or by touching?"

		only by mosquito bite	Only by touch	both by mosquito bite and touch	No	I dont know	Total	Chi-square & P value
Male	**Count**	0	3	2	994	1	1000	
	Expected Count	466.0	33.5	2.5	497.5	0.5	1000.0	
	% Total	.0%	0.15%	0.1%	49.7%	0.05%	50.0%	
Female	**Count**	932	64	3	1	0	1000	Chi-square=1978.74
	Expected Count	466.0	33.5	2.5	497.5	0.5	1000.0	
	% Total	46.6%	3.2%	0.15%	0.05%	0.0%	50.0%	P= 0.000
Total	**Count**	932	67	5	995	1	2000	
	Expected Count	932.0	67.0	5.0	995.0	1.0	2000.0	
	% Total	46.6%	3.35%	0.25%	49.75%	0.05%	100.0%	

As shown in Table 4.118, 46.6% female students answered that people get HIV infection or AIDS from mosquito bite. 0.15% male students and 3.2% female students answered that people get infected only by touching. 0.1% male students and 0.15% of female students answered that people get infected both by mosquito bite and by touch. 49.7% male students and 0.05% of female students answered people never get infected by mosquito bite and touching. 0.05% male students informed that they don't know.

The obtained Chi-square value for this group was 1978.74 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Can people get HIV infection or AIDS from mosquito bites or by touching?"It was noted that the response pattern of the

male and female students on the issue "Can people get HIV infection or AIDS from mosquito bites or by touching?" were different. Male students were disproportionately associated with the response of people get HIV or AIDS infection both by mosquito bite and touch, not by both and don't know. Female students were disproportionately associated with the response of only by mosquito bite and only by touch.

The graphical representation of the responses to get HIV/AIDS from mosquito bites or by touching among male and female students is presented in figure 4.85.

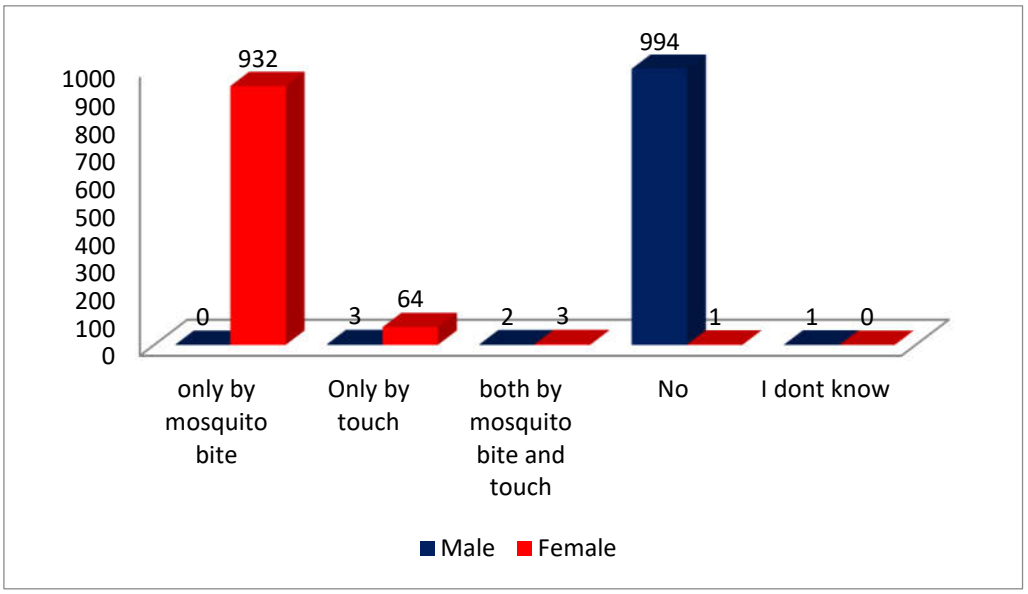

Figure 4.85 : *"Can people get HIV infection or AIDS from mosquito bites or by touching?" among urban and rural area students*

Table 4.121

Analysis on the question "Can people get HIV infection or AIDS from mosquito bites and by touching?" among government, aided and self-financing students

Category		Yes (Only Mosquito Bite)	Yes (Only touch)	Yes (both mosquito bite & touch)	No	I Do not know	Total	Chi-square& P-value
Government	Count	300	42	0	338	0	680	Chi-square = 14.256, p = 0.075
	Expected Count	306.0	35.0	.7	338.0	.3	680.0	
	% of Total	15.0%	2.1%	0.0%	16.9%	0.0%	34.0%	
Aided	Count	300	20	0	319	1	640	
	Expected Count	288.0	33.0	.6	318.1	.3	640.0	
	% of Total	15.0%	1.0%	0.0%	16.0%	.1%	32.0%	
self-financing	Count	300	41	2	337	0	680	
	Expected Count	306.0	35.0	.7	338.0	.3	680.0	
	% of Total	15.0%	2.1%	.1%	16.9%	0.0%	34.0%	
Total	Count	900	103	2	994	1	2000	
	Expected Count	900.0	103.0	2.0	994.0	1.0	2000.0	
	% of Total	45.0%	5.2%	.1%	49.7%	.1%	100.0%	

As shown in Table 4.119, 44.1% government, 46.9% aided, 44.1% self-financing students answered people get HIV or AIDS from mosquito bite only. 6.2% government, 3.1% aided, 6% self-financing students told only by touch. 0.3% self-financing students informed by both mosquito bite and touch. 49.7% government, 49.8% aided, 49.6% self-financing students told no. 0.2% aided students told that don't know.

Chi-square for the group obtained was 14.256 which was not significant at 0.05 level of significance, as the p-value obtained is 0.075 that was greater than 0.05 level. Thus, it may not be rejected the null hypothesis that there was no association between the category of college and response. It

may be concluded that there was significant association between type of college and the response on the question of "Can people get HIV infection or AIDS from mosquito bites and by touching?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Can people get HIV infection or AIDS from mosquito bites and by touching?" were not different.

The graphical representation of the responses to get HIV/AIDS from mosquito bites or by touching among government, aided and self-financing students is presented in figure 4.86.

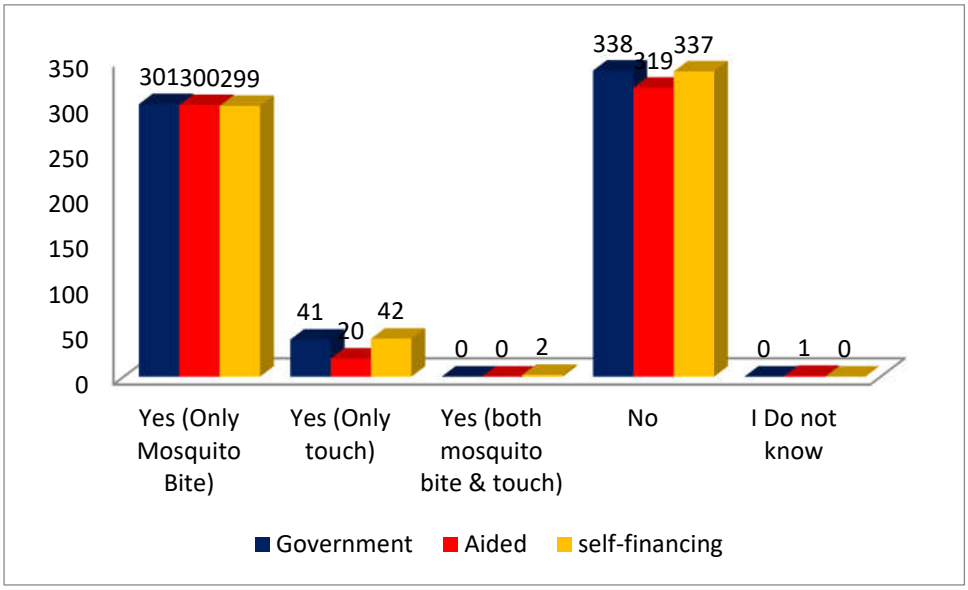

Figure 4.86: *"Can people get HIV infection or AIDS from mosquito bites or by touching?" among government, aided and self-financing students*

Table 4.120

Analysis on the question "Will people get infection of HIV by having sexual intercourse or through blood transfusion?" among urban and rural area students

		Yes	No	I do not know	Total	Chi-square & p value
Urban	**Count**	533	80	387	1000	Chi- square= 16.385, p= 0.000
	Expected Count	534.5	105.5	360.0	1000.0	
	% Total	26.7%	4.0%	19.4%	50.0%	
Rural	**Count**	536	131	333	1000	
	Expected Count	534.5	105.5	360.0	1000.0	
	% Total	26.8%	6.6%	16.7%	50.0%	
Total	**Count**	1069	211	720	2000	
	Expected Count	1069.0	211.0	720.0	2000.0	
	% Total/	53.5%	10.6%	36.0%	100.0%	

While making area wise comparison on HIV/AIDS getting by intercourse shows that, 53.3% of urban engineering college students and 53.6% of rural engineering college students stated that people will get infection of HIV by having sexual intercourse or through blood transfusion. 8.0% of urban engineering college students and 13.1% of rural engineering college students stated that, people will not get infection of HIV by having sexual intercourse or through blood transfusion. 38.7% of urban engineering college students and 33.3% of rural engineering college students do not know whether people get infection of HIV by having sexual intercourse or through blood transfusion.

The value of Chi-Square obtained is 16.385, which is significant at 0.05 levels of significance as the p-value obtained is 0.000. That means there is statistically significant association between Area and response; that is, both urban and rural area students have not equally aware of getting HIV/AIDS by sexual intercourse or by having blood transfusion.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among urban and rural area students is presented in figure 4.87.

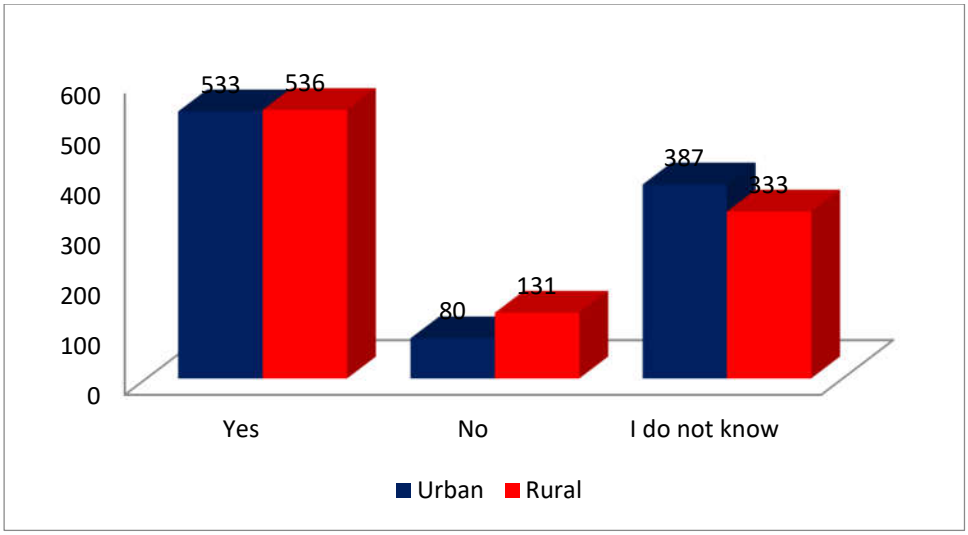

Figure 4.87: *"Will people get infection of HIV by having sexual intercourse or through blood transfusion?" among urban and rural area students*

Table 4.121

Analysis on the question "Will people get infection of HIV by having sexual intercourse or through blood transfusion?" among male and female students

		only sex	only blood transfusion	both sex and blood transfusion	Total	Chi-square &p-value
Male	**Count**	36	24	940	1000	Chi-square=1628.77 p= 0.000
	Expected Count	361.0	150.0	489.0	1000.0	
	% Total	1.8%	1.2%	47.0%	50.0%	
Female	**Count**	686	276	38	1000	
	Expected Count	361.0	150.0	489.0	1000.0	
	% Total	34.3%	13.8%	1.9%	50.0%	
Total	**Count**	722	300	978	2000	
	Expected Count	722.0	300.0	978.0	2000.0	
	% Total	36.1%	15.0%	48.9%	100.0%	

As shown in Table 4.121, 1.8% male students and 34.3% female students informed that people get infection of HIV by having sexual intercourse only. 1.2% male students and 13.8% female students answered that people get infection only by blood transfusion. 47% male students and 1.9% female students answered that sexual intercourse and blood transfusion both infected the people.

The value of Chi-square obtained is 1628.77 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Will people get infection of HIV by having sexual intercourse or through blood transfusion?"It was noted that the response pattern of the male and female students on the issue "Will people get infection of HIV by having sexual intercourse or through blood transfusion?" were different. Male students were disproportionately associated with the response of both by sexual intercourse and blood transfusion. Female students were disproportionately associated with the response of only by sexual intercourse and only by blood transfusion.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among male and female students is presented in figure 4.88.

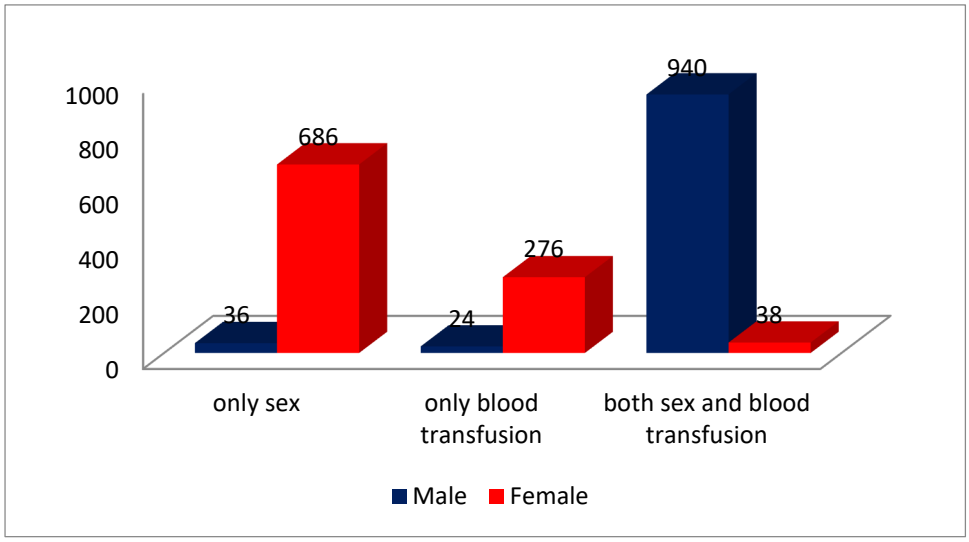

Figure 4.88: *"Will people get infection of HIV by having sexual intercourse or through blood transfusion?" among male and female students*

Table 122

Analysis on the question "Will people get infection of HIV by having sexual intercourse and through blood transfusion?" among government, aided and self-financing students

Category		Yes (Only Sexual Intercourse)	Yes (Only blood Transfusion)	Yes (Both Sexual I & Blood T.)	Total	Chi-square &p value
Government	Count	246	64	370	680	Chi-square = 6.358, p = 0.174
	Expected Count	244.8	71.7	363.5	680.0	
	% of Total	12.3%	3.2%	18.5%	34.0%	
Aided	Count	247	63	330	640	
	Expected Count	230.4	67.5	342.1	640.0	
	% of Total	12.4%	3.2%	16.5%	32.0%	
self-financing	Count	227	84	369	680	
	Expected Count	244.8	71.7	363.5	680.0	
	% of Total	11.4%	4.2%	18.5%	34.0%	
Total	Count	720	211	1069	2000	
	Expected Count	720.0	211.0	1069.0	2000.0	
	% of Total	36.0%	10.6%	53.5%	100.0%	

As shown in Table 4.122, 36.2% of government, 38.6% of aided, and 33.4% of self-financing students told that people get HIV infection through sexual intercourse. 9.4% of government, 9.8% of aided, and 12.4% of self-financing students told that people get HIV infection through blood transfusion. 54.4% of government, 51.6% of aided, and 54.3% of self-financing students told that, people get HIV infection through sexual intercourse and blood transfusion.

The value of Chi-square obtained is 6.358, which was not significant at 0.05 level of significance, as the p-value obtained is 0.174 that was greater than 0.05 level. Thus, it may be accepted the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "Will people get infection of HIV by having sexual intercourse and through blood transfusion?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Will people get infection of HIV by having sexual intercourse and through blood transfusion?" were same.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among government, aided and self-financing students is presented in figure 4.89.

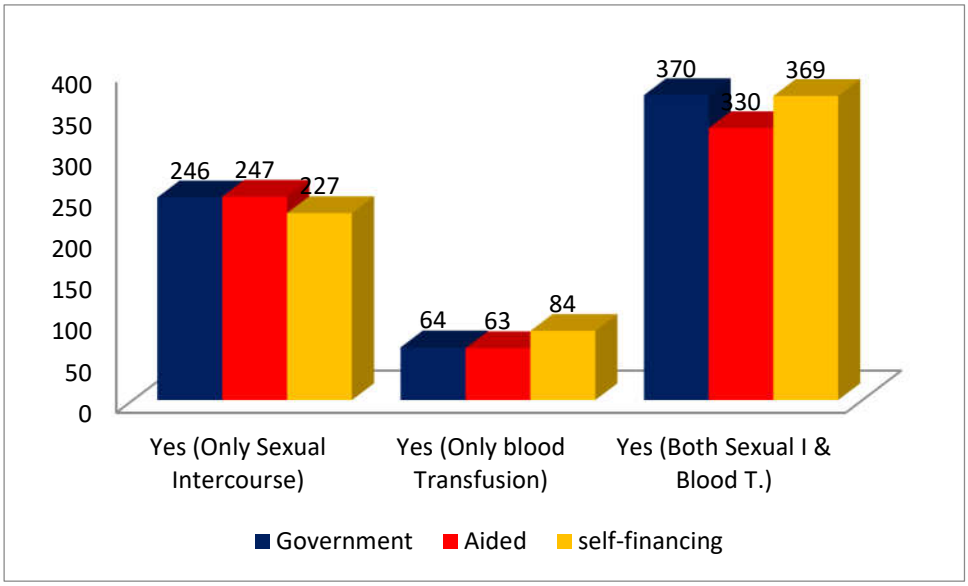

Figure 4.89: *"Will people get infection of HIV by having sexual intercourse or through blood transfusion?" among government, aided and self-financing students*

Table 4.123

Analysis on the question "Will people get infection of HIV by using common syringes of medical injection?" among urban and rural area students

		Yes	No	I do not know	Total	Chi-square & p -value
Urban	**Count**	925	35	40	1000	
	Expected Count	922.5	40.5	37.0	1000.0	
	% Total	46.0%	2.0%	2.0%	50.0%	
Rural	**Count**	920	46	34	1000	Chi-Square is 1.99
	Expected Count	922.5	40.5	37.0	1000.0	
	% Total	46.0%	2.3%	1.7%	50.0%	
Total	**Count**	1845	81	74	2000	p= 0.57
	Expected Count	1845.0	81.0	80.0	2000.0	
	% Total	92.25%	4.05%	3.7%	100.0%	

While making area wise comparison on HIV getting by using common syringes of medical injection showed that, both have the same response and 92.0% of both urban and rural engineering students are well aware that people

will get HIV by using common syringes of medical injection. 4.0% of both urban and rural engineering college students stated that, people will not get infection of HIV by common syringes of medical injection. 4.0% of urban and rural engineering students do not know whether people get HIV by using common syringes of medical injection.

The value of Chi-Square obtained is .000, which is significant at 0.05 levels of significance as the p-value obtained is 1.000. That means there is statistically significant association between Area and response; that is, both urban and rural have equally aware of getting HIV/AIDS by using common syringes and medical injection.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among urban and rural area students is presented in figure 4.90.

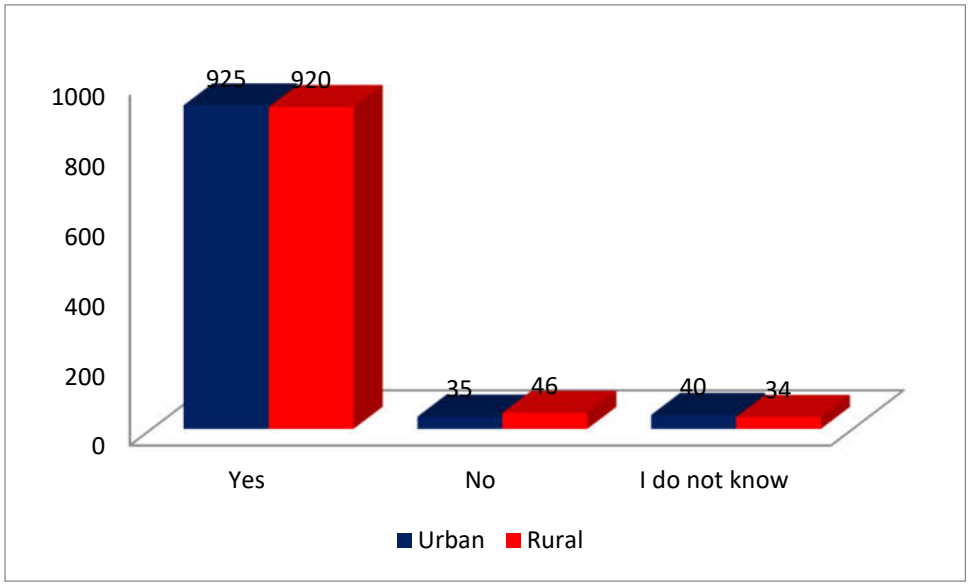

Figure 4.90: *"Will people get infection of HIV by using common syringes of medical injection?" among urban and rural area students*

Table 4.124

Analysis on the question "Will people get infection of HIV by using common syringes of medical injection?" among male and female students

		Yes	No	I dont know	Total	Chi-square & P value
Male	**Count**	845	79	76	1000	
	Expected Count	921.5	39.5	39.0	1000.0	
	% Total	42.25%	3.95%	3.8%	50.0%	
Female	**Count**	998	0	2	1000	Chi-square=161.91
	Expected Count	921.5	39.5	39.0	1000.0	
	% Total	49.9%	0.0%	0.1%	50.0%	P= 0.000
Total	**Count**	1843	79	78	2000	
	Expected Count	1843.0	79.0	78.0	2000.0	
	% Total	92.15%	3.95%	3.9%	100.0%	

As shown in Table 4.124, 42.25% male students and 49.9% female students answered that people get infection of HIV by using common syringes of medical injection. 3.95% male students informed that common syringes of medical injection never infects. 3.8% male students and 0.1% female students told don't know about the mode of HIV infection due to common syringes of medical injection.

The value of Chi-Square obtained is 161.91, which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Will people get infection of HIV by using common syringes of medical injection?"It was noted that the response pattern of the male and female students on the issue "Will people get infection of HIV by using common syringes of medical injection?" were different. Male students were disproportionately associated with the response of no and I don't know, female students were disproportionately associated with the response of yes.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among male and female students is presented in figure 4.91

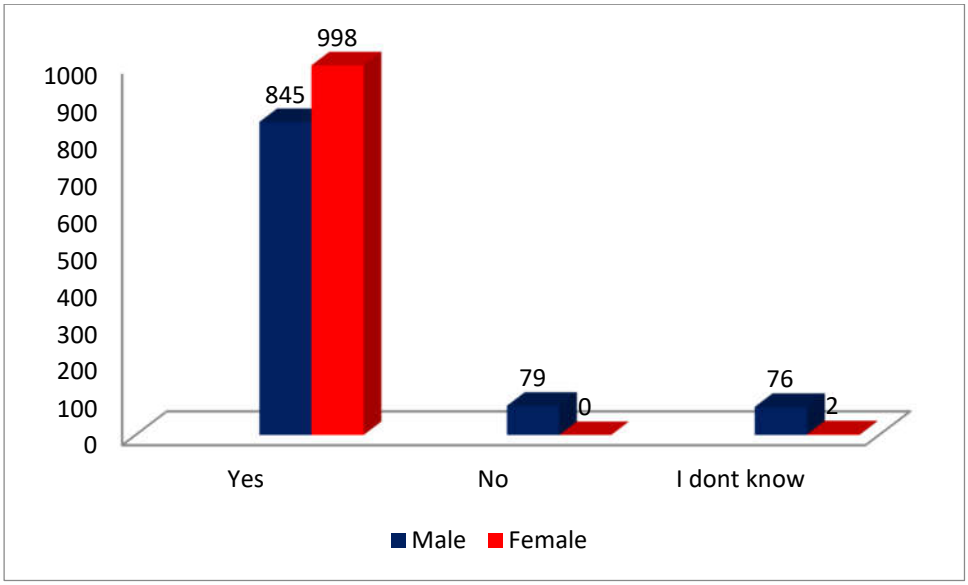

Figure 4.91**:** *"Will people get infection of HIV by using common syringes of medical injection?" among male and female students*

Table 4.125

Analysis on the question "Will people get infection of HIV by using common syringes of medical injection?" among government, aided and self-financing students

Category		Yes	No	I do not know	Total	Chi-square &p-value
Government	Count	617	42	21	680	Chi-square = 25.48, p = .000
	Expected Count	625.6	27.88	26.52	680.0	
	% of Total	30.85%	2.1%	1.05%	34.0%	
Aided	Count	579	21	40	640	
	Expected Count	588.8	26.24	24.96	640.0	
	% of Total	28.95%	1.05%	2.0%	32.0%	
Self-financing	Count	644	19	17	680	
	Expected Count	625.6	27.88	26.52	680.0	
	% of Total	32.2%	0.95%	0.85%	34.0%	
Total	Count	1840	82	78	2000	
	Expected Count	1840.0	80.0	78.0	2000.0	
	% of Total	92.0%	4.1%	3.9%	100.0%	

As shown in Table 4.125, 91.2% of government, 90.6% of aided, and 94.1% of self-financing students told that people get infection of HIV by using common syringes of medical injection. 5.9% of government, 3.1% of aided, and 2.9% of self-financing students told no. 2.9% of government, 6.3% of aided, and 2.9% of self-financing students told that don't know.

The value of Chi-Square obtained is21.579 which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "Will people get infection of HIV by using common syringes of medical injection?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "Will people get infection of HIV by using common syringes of medical injection?" were different. Government college students were disproportionately associated with the response of no. Aided college students were disproportionately associated with the response of I don't know. Self-financing college students were disproportionately associated with the response of yes.

The graphical representation of the responses to will people get infection of HIV by having sexual intercourse or by having blood transfusion among government, aided and self-financing students is presented in figure 4.92.

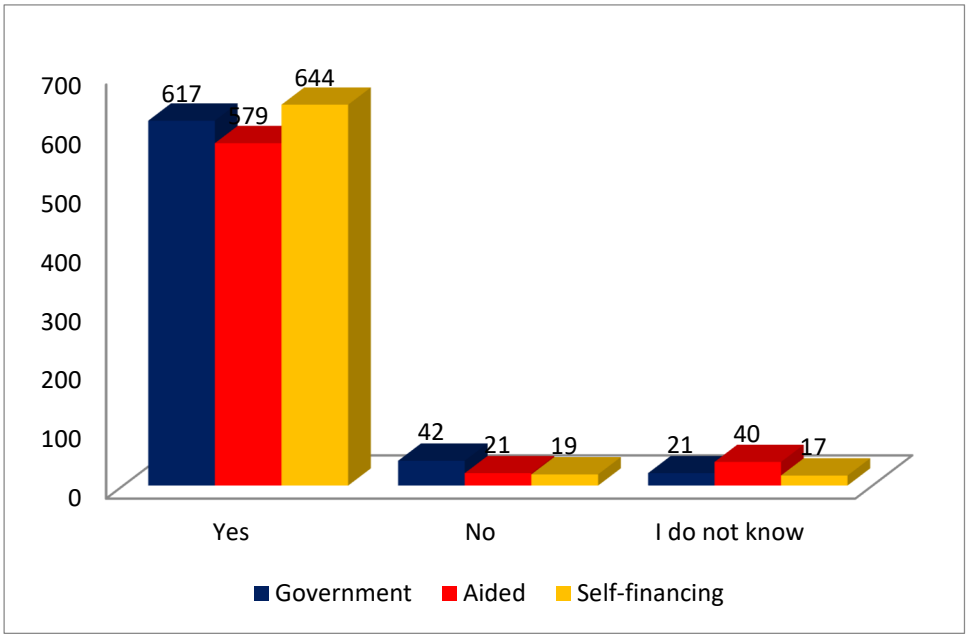

Figure 4.92: *"Will people get infection of HIV by using common syringes of medical injection?" among government, aided and self-financing students*

DESCRIPTIVE PROFILE OF ATTITUDE TOWARDS PHYSICAL ACTIVITY

The descriptive profiles of Attitude towards physical activity such as age, gender, height and weight of male and female students are presented in table 4.126, government, aided and self-financing engineering college students in table 4.127, of rural and urban Engineering students in table 4.128 and students of Electronics and Communication, Mechanical and Computer Science namely in table 4.129.

Table 4.126

The descriptive profiles on Attitude towards Physical activity of male and female engineering students

Descriptive		Male								Female							
		Q39	**Q40**	**Q41**	**Q42**	**Q43**	**Q44**	**Q45**	**Q46**	**Q39**	**Q40**	**Q41**	**Q42**	**Q43**	**Q44**	**Q45**	**Q46**
N	**Valid**	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.54	2.60	1.56	2.80	2.80	1.84	1.40	2.56	1.40	1.80	1.20	1.10	1.30	1.30	1.30	2.00
Std. Error of Mean		.049	.038	.041	.040	.040	.025	.021	.042	.021	.013	.013	.009	.020	.020	.020	.045
Median		2.00	2.50	1.00	3.00	3.00	2.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Mode		1	2a	1	3	3	2	1	1	1	2	1	1	1	1	1	1
Std. Deviation		1.54	1.20	1.30	1.25	1.25	.80	.66	1.33	.66	.40	.40	.30	.64	.64	.64	1.41
Variance		2.37	1.44	1.69	1.56	1.56	.63	.44	1.77	.44	.16	.16	.09	.41	.41	.41	2.00
Skewness		.53	.46	1.95	.07	.07	.51	1.40	.43	1.40	-1.50	1.50	2.67	1.92	1.92	1.92	1.06
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		-1.25	-.56	1.98	-.97	-.97	-.65	.62	-.93	.62	.26	.26	5.14	2.17	2.17	2.17	-.40
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		4	4	4	4	4	3	2	4	2	1	1	1	2	2	2	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	5	5	5	5	4	3	5	3	2	2	2	3	3	3	5
Percentiles	**25**	1.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	2.50	1.00	3.00	3.00	2.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	75	4.00	3.00	1.00	4.00	4.00	2.00	2.00	3.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	3.00

Question number 39,40,41,42,43,45 & 46 shown in Appendix II

Table 4.127

The descriptive profiles on Attitude towards Physical activity of government, aided and self-financing engineering students

Descriptive		Government								Aided								Self-financing							
		Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46
N	Valid	680	680	680	680	680	680	680	680	640	640	640	640	640	640	640	640	680	680	680	680	680	680	680	680
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		1.82	2.24	1.41	1.97	2.09	1.61	1.38	2.26	1.94	2.09	1.41	1.84	1.91	1.46	1.25	2.28	2.15	2.26	1.32	2.03	2.15	1.63	1.41	2.29
Std. Error of Mean		.041	.040	.037	.048	.048	.031	.026	.054	.056	.035	.043	.047	.047	.028	.022	.054	.054	.039	.033	.050	.049	.030	.027	.055
Median		1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.50	2.00	1.00	1.00	2.00	1.00	1.00	2.00
Mode		1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Std. Deviation		1.07	1.03	.97	1.25	1.25	.80	.69	1.40	1.41	.88	1.09	1.18	1.18	.71	.56	1.38	1.42	1.01	.87	1.30	1.29	.79	.69	1.43
Variance		1.15	1.06	.95	1.56	1.55	.64	.47	1.96	2.00	.77	1.18	1.38	1.40	.50	.31	1.89	2.01	1.02	.75	1.68	1.66	.62	.48	2.03
Skewness		1.08	1.13	2.55	1.06	.84	.94	1.52	.75	1.44	1.20	2.67	1.12	.98	1.39	2.15	.64	.98	1.17	3.15	.92	.72	.83	1.39	.69
Std. Error of Skewness		.09	.09	.09	.09	.09	.09	.09	.09	.10	.10	.10	.10	.10	.10	.10	.10	.09	.09	.09	.09	.09	.09	.09	.09
Kurtosis		-.21	1.04	5.45	-.07	-.41	-.43	.81	-.77	.58	2.16	5.60	.00	-.27	1.13	3.48	-.91	-.34	1.19	9.43	-.47	-.73	-.66	.48	-.92
Std. Error of Kurtosis		.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
Range		3	4	4	4	4	3	2	4	4	4	4	4	4	3	2	4	4	4	4	4	4	3	2	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		4	5	5	5	5	4	3	5	5	5	5	5	5	4	3	5	5	5	5	5	5	4	3	5
Percentiles	25	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.50	2.00	1.00	1.00	2.00	1.00	1.00	2.00
	75	2.00	3.00	1.00	3.00	3.00	2.00	2.00	3.00	2.00	2.00	1.00	3.00	3.00	2.00	1.00	3.00	3.00	3.00	1.00	3.00	3.00	2.00	2.00	3.00

Question number 39,40,41,42,43,45 & 46 shown in Appendix II

Table 4.128

The descriptive profiles on Attitude towards Physical activity of Urban and Rural engineering students

Descriptive		Urban								Rural							
		Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46
N	Valid	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.04	2.30	1.40	2.06	2.18	1.66	1.42	2.38	1.90	2.10	1.36	1.84	1.92	1.48	1.28	2.18
Std. Error of Mean		0.04	0.03	0.03	0.04	0.04	0.03	0.02	0.04	0.04	0.03	0.03	0.04	0.04	0.02	0.02	0.04
Median		1.50	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00
Mode		1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Std. Deviation		1.36	1.03	.98	1.30	1.29	.79	.70	1.41	1.27	.92	.98	1.17	1.18	.74	.60	1.38
Variance		1.84	1.05	.96	1.70	1.67	.63	.48	2.00	1.61	.85	.95	1.38	1.39	.54	.36	1.91
Skewness		1.18	1.05	2.71	.87	.67	.79	1.36	.59	1.31	1.33	2.86	1.21	1.03	1.31	2.00	.82
Std. Error of Skewness		.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
Kurtosis		.11	.87	6.35	-.58	-.80	-.66	.39	-1.00	.51	2.21	7.00	.33	-.04	.64	2.66	-.68
Std. Error of Kurtosis		.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
Range		4	4	4	4	4	3	2	4	4	4	4	4	4	3	2	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	5	5	5	5	4	3	5	5	5	5	5	5	4	3	5
Percentiles	25	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	1.50	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00
	75	3.00	3.00	1.00	3.00	3.00	2.00	2.00	3.00	2.00	2.00	1.00	3.00	3.00	2.00	1.00	3.00

Question number 39,40,41,42,43,45 & 46 shown in Appendix II

Table 4.129

The descriptive profiles on Attitude towards Physical activity of Electronics and Communication, mechanical and Computer Science engineering students

Descriptive		Electronics and Communication								Mechanical								Computer Science							
		Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46	Q39	Q40	Q41	Q42	Q43	Q44	Q45	Q46
N	**Valid**	640	640	640	640	640	640	640	640	760	760	760	760	760	760	760	760	600	600	600	600	600	600	600	600
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		2.22	2.03	1.38	1.84	1.91	1.46	1.25	2.41	1.82	2.32	1.45	2.05	2.21	1.73	1.50	2.16	1.90	2.23	1.30	1.93	2.00	1.49	1.27	2.30
Std. Error of Mean		.060	.035	.039	.047	.047	.028	.022	.062	.042	.041	.037	.049	.048	.031	.027	.047	.050	.034	.037	.048	.048	.029	.023	.053
Median		2.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.50	1.00	1.00	2.00
Mode		1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	2	1	1	1	1	1	1
Std. Deviation		1.52	0.88	0.99	1.18	1.18	0.70	0.56	1.58	1.17	1.13	1.02	1.34	1.32	0.85	0.75	1.31	1.22	0.84	0.90	1.18	1.18	0.70	0.57	1.30
Variance		2.30	0.78	0.99	1.38	1.40	0.50	0.31	2.50	1.36	1.27	1.04	1.79	1.75	0.72	0.57	1.71	1.49	0.71	0.81	1.40	1.40	0.49	0.33	1.68
Skewness		0.98	1.30	2.66	1.12	0.98	1.40	2.15	0.60	1.56	1.02	2.62	0.96	0.71	0.63	1.12	0.77	1.07	1.20	3.22	0.98	0.85	1.25	2.04	0.63
Std. Error of Skewness		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	.100	.100	.100	.100	.100	.100	.100	.100
Kurtosis		-0.61	2.43	5.71	0.00	-0.27	1.16	3.48	-1.24	1.67	0.36	5.93	-0.42	-0.73	-1.10	-0.33	-0.60	-0.20	2.27	9.34	-0.22	-0.44	0.70	2.99	-0.86
Std. Error of Kurtosis		0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	.199	.199	.199	.199	.199	.199	.199	.199
Range		4	4	4	4	4	3	2	4	4	4	4	4	4	3	2	4	4	4	4	4	4	3	2	4
Minimum		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum		5	5	5	5	5	4	3	5	5	5	5	5	5	4	3	5	5	5	5	5	5	4	3	5
Percentiles	**25**	1.00	1.25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
	50	2.00	2.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.50	1.00	1.00	2.00
	75	3.00	2.00	1.00	3.00	3.00	2.00	1.00	4.00	2.00	3.00	1.00	3.00	3.00	2.00	2.00	3.00	3.00	3.00	1.00	3.00	3.00	2.00	1.00	3.00

Question number 39,40,41,42,43,45 & 46 shown in Appendix II

CHI-SQUARE ANALYSIS OF ATTITUDE TOWARDS PHYSICAL ACTIVITY

Table 4.130

Analysis on the question "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among urban and rural area students

		0 day	1 or 2 days	3 or 4 days	5 or 6 days	7 days		Chi-square & p-value
Urban	**Count**	566	187	104	60	83	1000	Chi-square is 19.033 p= 0.001
	Expected Count	549.0	201.0	106.5	52.0	91.5	1000.0	
	% Total	28.3%	9.35%	5.2%	3.0%	4.15%	50.0%	
Rural	**Count**	532	215	109	44	100	1000	
	Expected Count	549.0	201.0	106.5	52.0	91.5	1000.0	
	% Total	26.6%	10.75%	5.45%	2.1%	5.0%	50.0%	
Total	**Count**	1098	402	213	104	183	2000	
	Expected Count	1098.0	402.0	213.0	104.0	183.0	2000.0	
	% Total	54.9%	20.1%	10.65%	5.2%	10.0%	100.0%	

As shown in Table 4.130, 28.3% of urban area students and 26.6% of rural area students were not physically active for 60 minutes in a day. 9.35% of urban area students and 10.75% of rural area students were physically active for one or two days. 5.2% of urban area students and 5.45% of rural area students were physically active for three or four days. 3.0% of urban area students and 2.1% of rural area students were physically active for five or six days. 4.15% of urban area students and 5.08% of rural area students were physically active for seven days.

The value of Chi-Square obtained is 19.033, which was significant at 0.05 level of significance, as the p-value was 0.001, that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no

association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?"It was noted that the response pattern of the urban and rural area students on the issue "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" were different. Urban area students were disproportionately associated with the response of one or two days, five or six days and seven days, rural area students were disproportionately associated with the response of not physically active for 60 minutes in a day.

The graphical representation of the responses to the question to "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among urban and rural area students is presented in figure 4.93.

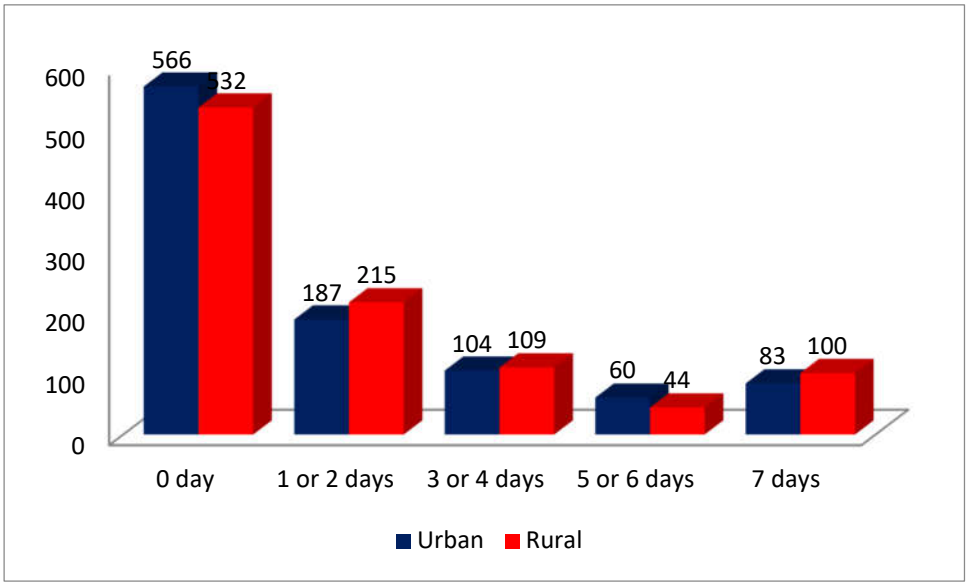

Figure 4.93: *"During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among urban and rural area students*

Table 4.131

Analysis on the question "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among male and female students

		0 day	1 or 2 days	3 or 4 days	5 or 6 days	7 days	Total	Chi-square & p-value
Male	**Count**	359	242	116	95	188	1000	Chi-square=202.48 p= 0.000
	Expected Count	521.0	244.5	92.0	48.5	94.0	1000.0	
	% Total	17.95%	12.1%	5.8%	4.75%	9.4%	50.0%	
Female	**Count**	683	247	68	2	0	1000	
	Expected Count	521.0	244.5	92.0	48.5	94.0	1000.0	
	% Total	34.15%	12.35%	3.4%	0.1%	0.0%	50.0%	
Total	**Count**	1042	489	184	97	188	2000	
	Expected Count	1042.0	489.0	184.0	97.0	188.0	2000.0	
	% Total	52.1%	24.45%	9.2%	4.85%	9.4%	100.0%	

As shown in Table 143, 17.95% male students and 34.15% of female students were not physically active for 60 minutes in a day. 12.1% of male and 12.35% of female students were physically active for one or two days. 5.8% of male and 3.4% of female students were physically active for three or four days. 4.75% of male and 0.1% of female students were physically active for five or six days. 9.4% of male students were physically active for seven days.

The value of Chi-Square obtained is202.48, which was significant at 0.05 level of significance, as the p-value was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?"It was noted that the response

pattern of the male and female students on the issue “During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?” were different. Male students were disproportionately associated with the response of one or two days, five or six days and seven days, female students were disproportionately associated with the response of not physically active for 60 minutes in a day.

The graphical representation of the responses to the question to “During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?” among male and female students is presented in figure 4.94.

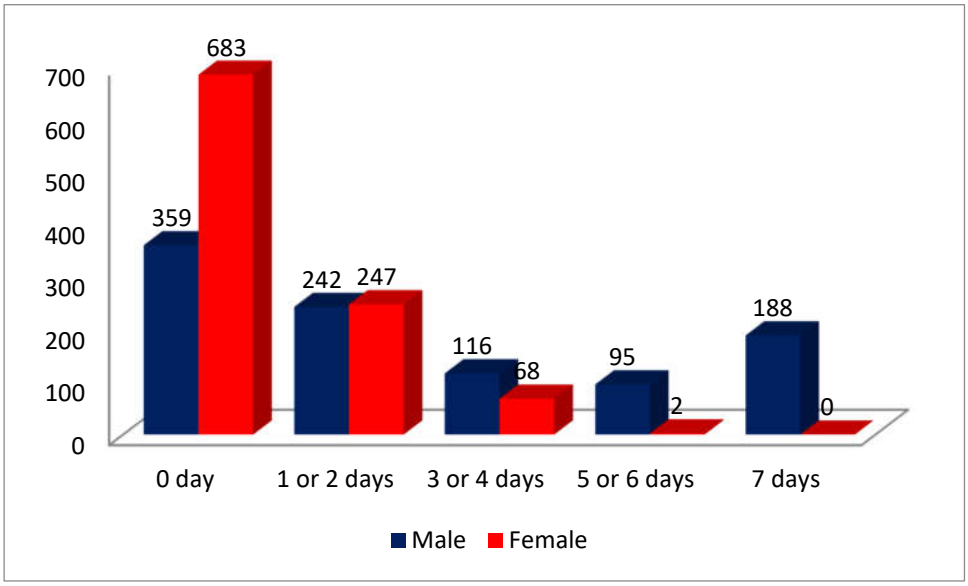

Figure 4.94: *“During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?” among male and female students*

Table 4.132

Analysis on the question "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among government, aided and self-financing students

Category		0 Days	1 or 2 days	3 or 4 days	5 or 6 days	7 days	Total	Chi-square & p-value
Government	**Count**	362	178	43	97	0	680	Chi-square = 316.30, p = .000
	Expected Count	364.48	149.26	67.32	32.98	65.96	680.0	
	% of Total	18.1%	8.9%	2.15%	4.85%	0.0%	34.0%	
Aided	**Count**	366	154	20	0	100	640	
	Expected Count	343.04	140.48	63.36	31.04	62.08	640.0	
	% of Total	18.3%	7.7%	1.0%	0.0%	5.0%	32.0%	
Self-financing	**Count**	344	107	135	0	94	680	
	Expected Count	364.48	149.26	67.32	32.98	65.96	680.0	
	% of Total	17.2%	5.35%	6.75%	0.0%	4.7%	34.0%	
Total	**Count**	1072	439	198	97	194	2000	
	Expected Count	1072.0	439.0	198.0	97.0	194.0	2000.0	
	% of Total	53.6%	21.95%	9.9%	4.85%	9.7%	100.0 %	

As shown in Table 144, 52.9% of government, 56.3% of aided, 50% of self-financing students were not physically active for a single day. 26.5% of government, 25% of aided, 14.7% of self-financing students were physically active for one or two days. 5.9% of government, 3.1% of aided, 20.6% of self-financing students were physically active for three or four days. 14.7% of government students were physically active for five or six days. 15.6% of aided, 14.7% of self-financing students were physically active for seven days for a total of at least 60 minutes per day.

The value of Chi-Square obtained is 443.112, which was significant at 0.05 level of significance, as the p-value obtained is 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" were different. Government college students were disproportionately associated with the response of one or two days and five or six days. Aided college students were disproportionately associated with the response of zero day, one or two days and 7 days. Self-financing college students were disproportionately associated with the response of three or four days and seven days.

The graphical representation of the responses to the question to "During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among government, aided and self-financing students is presented in figure 4.95.

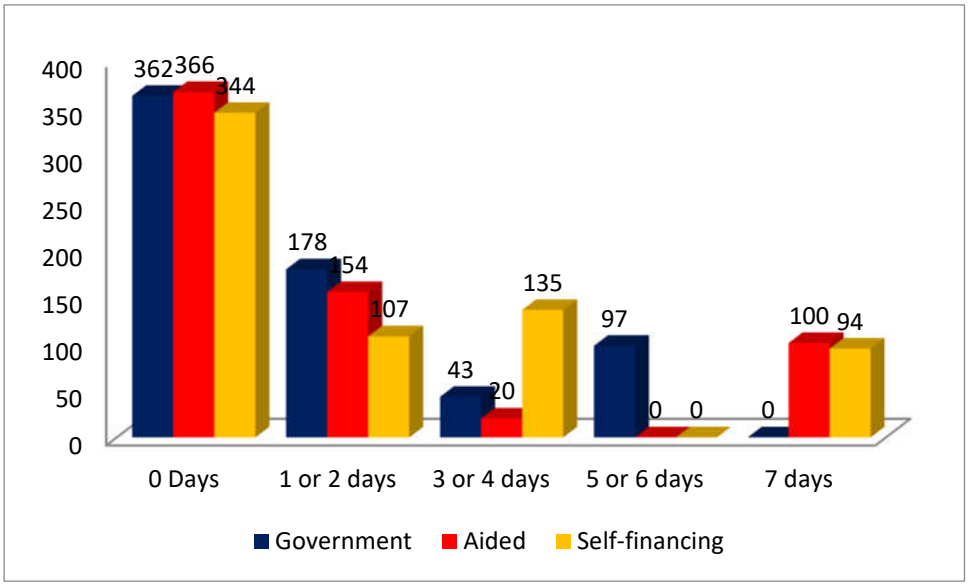

Figure 4.95: *"During a usual week, on how many days are you physically active for a total of at least 60 minutes per day?" among government, aided and self-financing students*

Table 4.133

Analysis on the question "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?" among urban and rural students

		Less than 1 hour per day	1 to 2 hours per day	3 to 4 hours per day	5 to 6 hours per day	More than 7 hours per day		chi square and p-value
Urban	**Count**	225	576	121	42	36	1000	chi square= 21.99 p=0.000
	Expected Count	204.0	546.0	149.5	51.5	49.0	1000.0	
	% Total	11.25%	28.8%	6.05%	2.1%	1.8%	50.0%	
Rural	**Count**	183	516	178	61	62	1000	
	Expected Count	204.0	546.0	149.5	51.5	49.0	1000.0	
	% Total	9.15%	25.8%	8.9%	3.05%	3.1%	50.0%	
Total	**Count**	408	1092	299	103	98	2000	
	Expected Count	408.0	1092.0	299.0	103.0	98.0	2000.0	
	% Total	20.4%	54.6%	14.95%	5.15%	4.9%	100.0%	

As shown in Table 4.133, 11.25% of urban and 9.15% of rural area students performed sitting activities for less than one hour. 28.8% urban and 25.8% rural area students done sitting activities for one to two hours. 6.05% urban and 8.9% rural area students performed sitting activities for three to four hours. 2.1% of urban and 3.05% of rural area students performed sitting activities for five to six hours. 1.8% of urban and 3.1% of rural area students performed sitting activities for more than seven hours.

The value of Chi-square obtained is21.99, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "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?"It was noted that the response pattern of the urban and rural area students on the issue "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?" were different. Urban area students and rural area students were disproportionately associated with the response of three to four hours, five to six hours and more than seven hours.

The graphical representation of the responses to the question to "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?" among urban and rural area students are presented in figure 4.96.

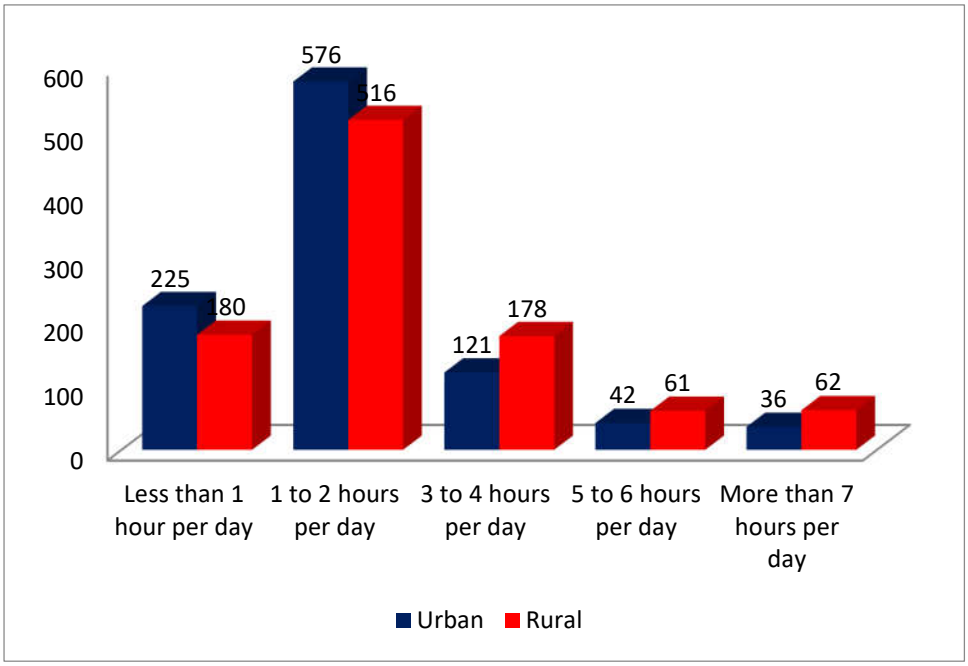

Figure 4.96: *"How much time do you spend during a usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities, such as reading books, playing chess, or playing scrabble?" among urban and rural area students*

Table 4.134

Analysis on the question "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?" among male and female students

		Less than one hour	1 to 2 hours	3 to 4 hours	5 to 6 hours	more than 7 hours	Total	Chi-square & p-value
Male	**Count**	234	285	307	116	58	1000	Chi-square=668.35 p= 0.000
	Expected Count	218.0	541.5	153.5	58.0	29.0	1000.0	
	% Total	11.7%	14.25%	15.35%	5.8%	2.9%	50.0%	
Female	**Count**	202	798	0	0	0	1000	
	Expected Count	218.0	541.5	153.5	58.0	29.0	1000.0	
	% Total	10.1%	39.9%	.0%	.0%	.0%	50.0%	
Total	**Count**	436	1083	307	116	58	2000	
	Expected Count	436.0	1083.0	307.0	116.0	58.0	2000.0	
	% Total	21.8%	54.15%	15.35%	5.8%	2.9%	100.0%	

As shown in Table 4.134, 11.7% of male and 10.1% of female students performed sitting activities for less than one hour. 14.25% of male and 39.9% of female students were done sitting activities for one to two hours. 15.35% of male students performed sitting activities for three to four hours, 5.8% male students performed sitting activities for five to six hours. 2.9% male students performed sitting activities for more than seven hours.

The value of Chi-square obtained is 668.35 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "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?"It was noted that the response pattern of the male and female students on the issue "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?" were different. Male students were disproportionately associated with the response of three to four hours, five to six hours and more than seven hours. Female students were disproportionately associated with the response of one to two hours.

The graphical representation of the responses to the question to "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?" among male and female students are presented in figure 4.97.

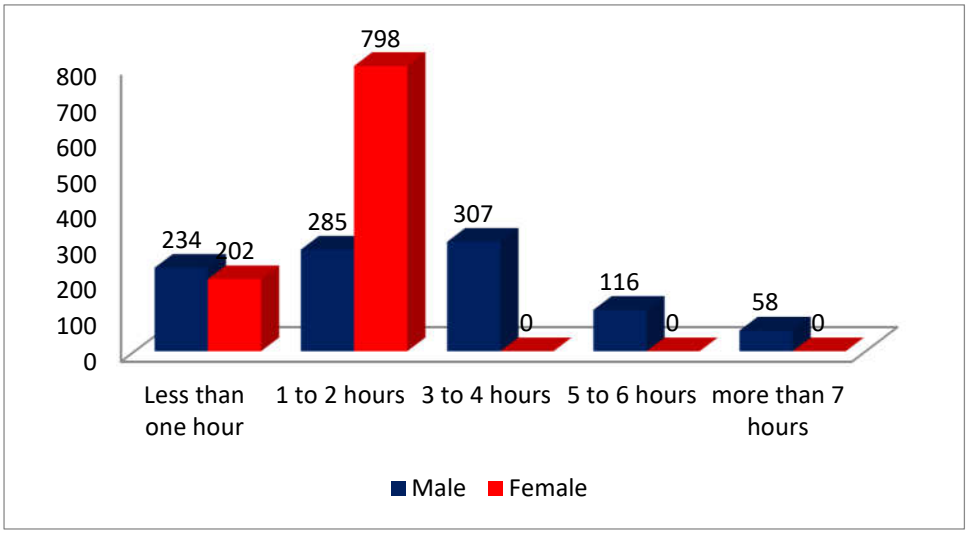

Figure 4.97: *"How much time do you spend during a usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities, such as reading books, playing chess, or playing scrabble?" among male and female students*

Table 4.135

Analysis on the question "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?" among government, aided and self-financing students

Category		Less the 1 hour per day	1 to 2 hours per day	3 to 4 hours per day	5 to 6 hours per day	More than 7 hours per day	Total	Chi-square & p-value
Government	**Count**	143	356	102	41	38	680	Chi-square = 11.81, p = 0.026
	Expected Count	139.06	374.0	99.96	32.64	34.34	680.0	
	% of Total	7.15%	17.8%	5.1%	2.05%	1.9%	34.0%	
Aided	**Count**	145	364	89	20	22	640	
	Expected Count	130.88	352.0	94.08	30.72	32.32	640.0	
	% of Total	7.25%	18.25%	4.45%	1.0%	1.1%	32.0%	
Self-financing	**Count**	121	380	103	35	41	680	
	Expected Count	139.06	374.0	99.96	32.64	34.34	680.0	
	% of Total	6.05%	19.0%	5.15%	1.75%	2.05%	34.0%	
Total	**Count**	409	1100	294	96	101	2000	
	Expected Count	409.0	1100.0	294.0	96.0	101.0	2000.0	
	% of Total	20.45%	55.0%	14.7%	4.8%	5.05%	100.0%	

As shown in Table 4.135, 20.6% of government, 21.9% of aided, and 17.6% of self-financing students spent less than one hour per day in sitting activities like watching television, playing computer games, etc. 52.9% of government, 56.3% of aided, and 55.9% of self-financing students spent one to two hours. 14.7% of government, 15.6% of aided, 14.7% of self-financing students spent three to four hours. 5.9% of government, 3.1% of aided, and 5.9% of self-financing students spent five to six hours per day. 5.9% of government, 3.1% of aided, and 5.9% of self-financing students spent more than seven hours per day in sitting activities.

The obtained Chi-square for this group was 17.408 which were significant at 0.05 level of significance, as the p-value obtained is 0.026 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "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?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "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?" were different. Government college students were disproportionately associated with the response of less than one hour per day, five to six hours, more than seven hours per day. Aided college students were disproportionately associated with the response of less than one hour per day, one or two hours and three or four hours. self-financing college students were disproportionately associated with the response of one or two hours, five or six hours and more than seven hours.

The graphical representation of the responses to the question to "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?" among government, aided and self-financing students are presented in figure 4.98.

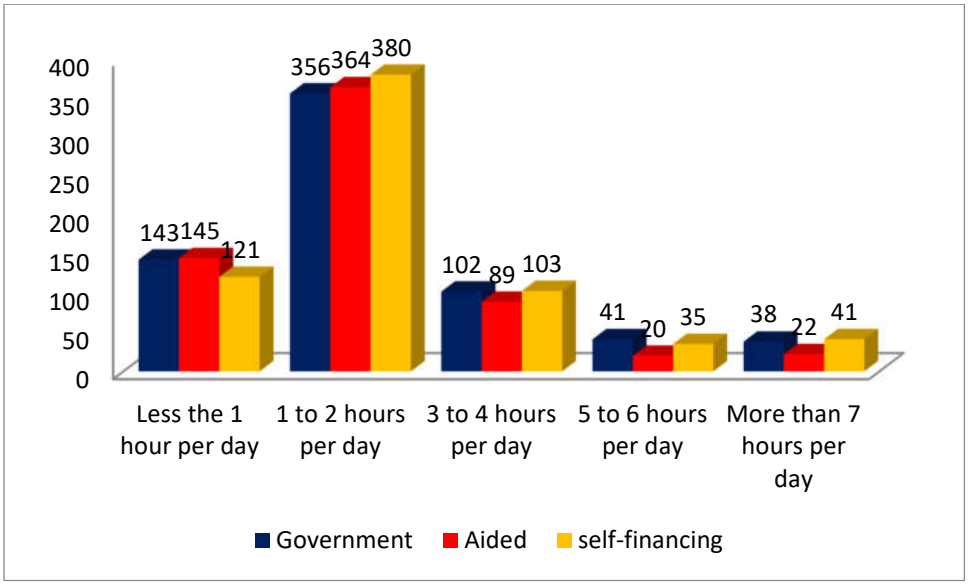

Figure 4.98: *"How much time do you spend during a usual day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities, such as reading books, playing chess, or playing scrabble?" among government, aided and self-financing students*

Table 4.136

Analysis on question "How many days did you walk or ride a bicycle to and from college in the past one week?" among urban and rural area students

		0 day	1 or 2 days	5 or 6 days	7 days		chi square & p-value
Urban	**Count**	840	80	40	40	1000	Chi square= 13.81 p=0.000
	Expected Count	820.0	100.0	40.0	40.0	1000.0	
	% Total	42.0%	4.0%	2.0%	2.0%	50.0%	
Rural	**Count**	800	120	40	40	1000	
	Expected Count	820.0	100.0	40.0	40.0	1000.0	
	% Total	40.0%	6.0%	2.0%	2.0%	50.0%	
Total	**Count**	1640	200	80	80	2000	
	Expected Count	1640.0	200.0	80.0	80.0	2000.0	
	% Total	82.0%	10.0%	4.0%	4.0%	100.0%	

As shown in Table 4.136, 42.0% urban and 40.0% rural area students didn't walk or ride a bicycle to and from college in the past one week. 4.0% urban and 6.0% rural area students walked or ride a bicycle for one or two days. 2.0% urban and 3.0% rural area students walked or ride a bicycle for five or six days. 2.0% of both urban and rural area students walked or ride a bicycle for seven days.

The value of Chi-square obtained is13.81, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "How many days did you walk or ride a bicycle to and from college in the past one week?"It was noted that the response pattern of the urban and rural area students on the issue "How many days did you walk or ride a bicycle to and from college in the past one week?" were different. Urban and rural area students were disproportionately associated with the response of never walk or ride a bicycle, past one week, five or six days, seven days,and one or two days.

The graphical representation of the responses to the question to"How many days did you walk or ride a bicycle to and from college in the past one week?" among urban and rural area students are presented in figure 4.99.

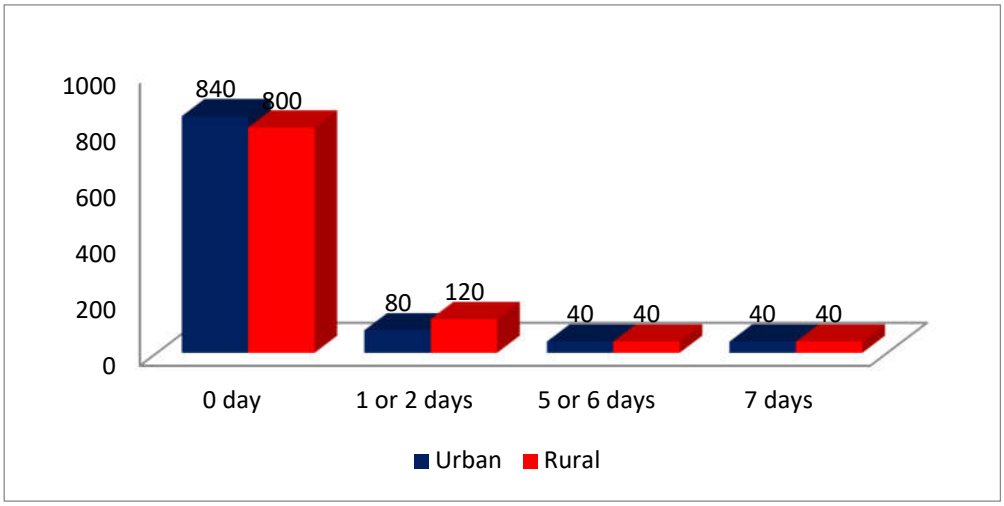

Figure 4.99: *"How many days did you walk or ride a bicycle to and from college in the past one week?" among urban and rural area students*

Table 137

Analysis on the question "How many days did you walk or ride a bicycle to and from college in the past one week?" among male and female students

		0 day	1 or 2 days	5 or 6 days	7 days	Total	Chi-square & p- value
Male	**Count**	836	4	93	67	1000	Chi-square=241.64 p= 0.000
	Expected Count	815.0	84.5	67.0	33.5	1000.0	
	% Total	41.8%	0.2%	4.65%	3.35%	50.0%	
Female	**Count**	794	165	41	0	1000	
	Expected Count	815.0	84.5	67.0	33.5	1000.0	
	% Total	39.7%	8.25%	2.05%	0.0%	50.0%	
Total	**Count**	1630	169	134	67	2000	
	Expected Count	1630.0	169.0	134.0	67.0	2000.0	
	% Total	81.5%	8.45%	6.7%	3.35%	100.0%	

As shown in Table 149, 41.8% of male and 39.7% of female students didn't walk or ride a bicycle to and from college in the past one week. 0.2% of male and 8.25% of female students walked or rides a bicycle for one or two days. 4.65% male and 2.05% female students walked or ride a bicycle for five or six days. 3.35% male students walked or ride a bicycle for seven days.

The value of Chi-square obtained is 241.64 which were significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many days did you walk or ride a bicycle to and from college in the past one week?"It was noted that the response pattern of the male and female on the issue "How many days did you walk or ride a bicycle to and from college in the past one week?" were different. Male was disproportionately associated with the response of never walk or ride a bicycle, five or six days, seven days. Female was disproportionately associated with the response of one or two days.

The graphical representation of the responses to the question to"How many days did you walk or ride a bicycle to and from college in the past one week?" among male and female students is presented in figure 4.100.

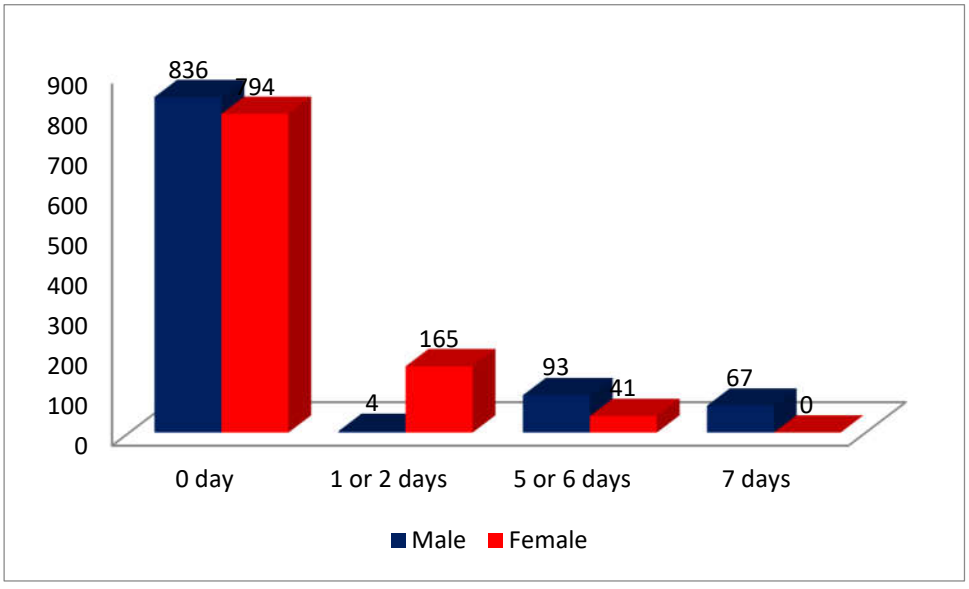

Figure 4.100: *"How many days did you walk or ride a bicycle to and from college in the past one week?" among male and female students*

Table 4.138

Analysis on the question "How many days did you walk or ride a bicycle to and from college in the past one week?" among government, aided and self-financing students

Category		0 days	1 or 2 days	5 or 6 days	7 days	Total	Chi-square & P value
Government	**Count**	545	81	29	25	680	Chi-square = 15.85, P = .000
	Expected Count	556.92	66.64	25.84	30.6	680.0	
	% of Total	27.25%	4.05%	1.45%	1.25%	34.0%	
Aided	**Count**	526	47	30	37	640	
	Expected Count	524.16	62.72	24.32	28.8	640.0	
	% of Total	26.3%	2.35%	1.5%	1.85%	32.0%	
self-financing	**Count**	567	68	17	28	680	
	Expected Count	556.92	66.64	25.84	30.6	680.0	
	% of Total	28.35%	3.4%	0.85%	1.4%	34.0%	
Total	**Count**	1638	196	76	90	2000	
	Expected Count	1638.0	196.0	76.0	90.0	2000.0	
	% of Total	81.9%	9.8%	3.8%	4.5%	100.0%	

As shown in Table 4.137, 79.4% of government, 84.4% of aided, and 82.4% of self-financing students never walk or ride bicycle to and from college in the past one week. 11.8% of government, 6.3% of aided, and 11.8% of self-financing students walk or ride bicycle for one or two days. 5.9% of government, 3.1% of aided, and 2.9% of self-financing students walk or ride bicycle for five or six days. 2.9% of government, 6.3% of aided, and 2.9% of self-financing students walk or ride bicycle for seven days.

The obtained Chi-square for this group was 35.308, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It

may be concluded that there was no significant association between type of college and the response on the question of "How many days did you walk or ride a bicycle to and from college in the past one week?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many days did you walk or ride a bicycle to and from college in the past one week?" were different. Government college students were disproportionately associated with the response of one or two days and five or six days. Aided college students were disproportionately associated with the response of zero day and seven days. Self-financing college students were disproportionately associated with the response of zero day and one or two days.

The graphical representation of the responses to the question to "How many days did you walk or ride a bicycle to and from college in the past one week?" among government, aided and self-financing students are presented in figure 4.101.

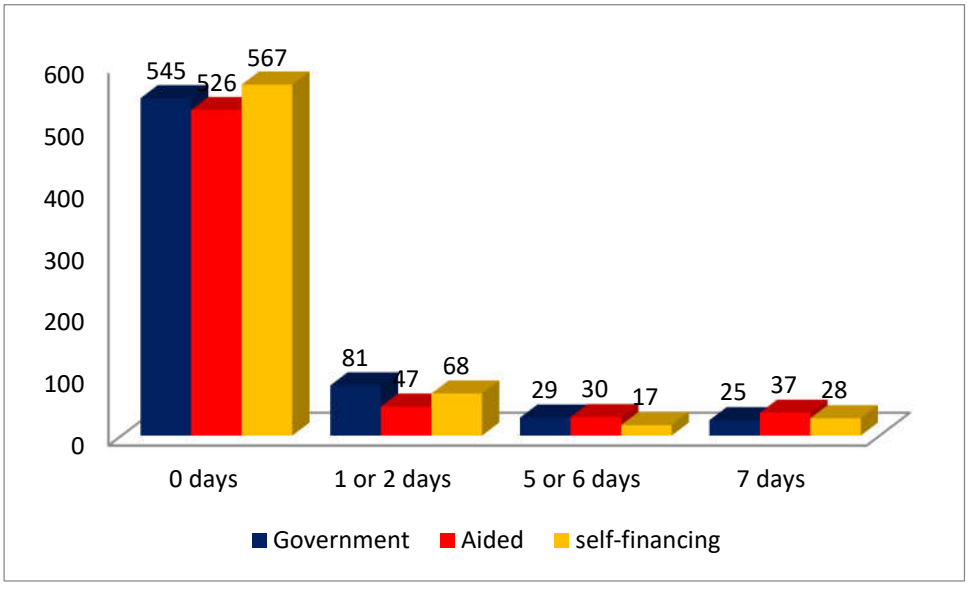

Figure 4.101: *"How many days did you walk or ride a bicycle to and from college in the past one week?" among government, aided and self-financing students*

Table 4.139

Analysis on question "How often did your parents or guardian understand your problems and worries for the past 30 days?" among urban and rural area students

		Never	Rarely	Sometimes	Most of the time	Always		Chi-square &p- value
Urban	**Count**	584	161	136	80	39	1000	Chi-square=15.30 p= 0.000
	Expected Count	552.0	150.5	151.5	98.5	47.5	1000.0	
	% Total	29.2%	8.05%	6.8%	4.0%	1.95%	50.0%	
Rural	**Count**	520	140	167	117	56	1000	
	Expected Count	552.0	150.5	151.5	98.5	47.5	1000.0	
	% Total	26.0%	7.0%	8.35%	5.85%	2.8%	50.0%	
Total	**Count**	1104	301	303	197	95	2000	
	Expected Count	1100.0	301.0	303.0	197.0	95.0	2000.0	
	% Total	55.2%	15.05%	15.15%	9.85%	4.75%	100.0%	

As shown in Table 4.139, 29.2% of urban and 26.0% of rural area students told that parents or guardians never understand their problem and worries for the past 30 days.. 8.05% of urban and 7.06% of rural area students told that rarely their parents or guardians never understand their problems and worries for the past 30 days. 6.8% of urban and 8.35% of rural area students told sometimes. 4.0%urban and 5.85% of rural area students told most of the time and1.95% urban and 2.8% of rural area students told always their parents or guardian understand the problems and worries for the past 30 days.

The value of Chi-square obtained is15.30, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "How often did your parents or guardian understand your problems and worries for the past 30 days?"It was noted that the response pattern of the

urban and rural area students on the issue "How often did your parents or guardian understand your problems and worries for the past 30 days?"were different. Urban and rural area students were disproportionately associated with the response of never, rarely, sometimes, most of the time and always.

The graphical representation of the responses to the question to "How often did your parents or guardian understand your problems and worries for the past 30 days?" among urban and rural area students are presented in figure 4.102.

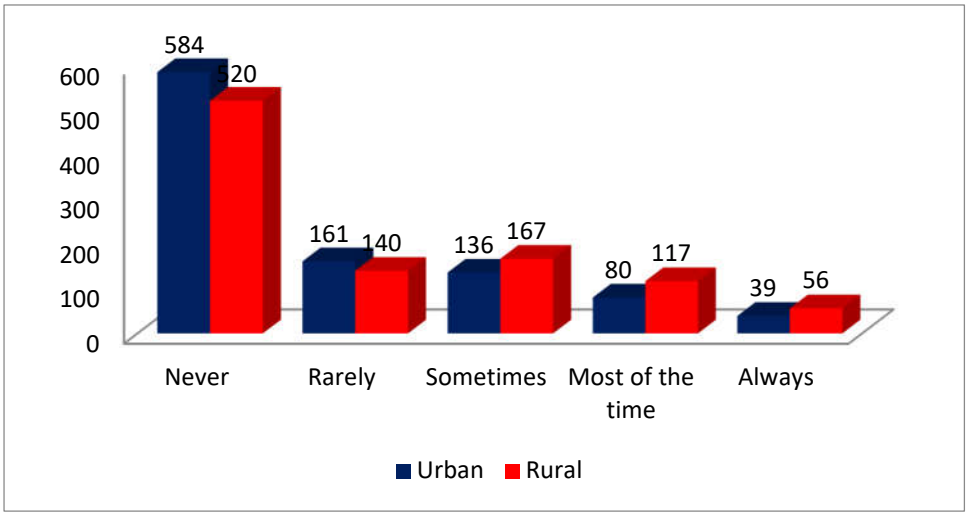

Figure 4.102: *"How often did your parents or guardian understand your problems and worries for the past 30 days?" among urban and rural area students*

Table 4.140

Analysis on the question "How often did your parents or guardian understand your problems and worries for the past 30 days?" among male and female students

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square &p-value
Male	**Count**	167	173	312	199	149	1000	Chi-square=1001.04 p= 0.000
	Expected Count	522.0	148.5	156.0	99.5	74.5	1000.0	
	% Total	8.35%	8.65%	15.6%	9.95 %	7.45%	50.0%	
Female	**Count**	876	124	0	0	0	1000	
	Expected Count	522.0	148.5	156.0	99.5	74.5	1000.0	
	% Total	43.8%	6.2%	.0%	.0%	.0%	50.0%	
Total	**Count**	1043	297	312	199	149	2000	
	Expected Count	1043.0	297.0	312.0	199.0	149.0	2000.0	
	% Total	52.2%	14.85 %	15.6%	9.95 %	7.45%	100.0 %	

As shown in Table 4.140, 8.35% of male and 43.8% of female told that parents or guardians never understand their problem and worries for the last 30 days. 8.65% of male and 6.2% of female told rarely. 15.6% of male told sometimes. 9.95% of male told most of the time and 7.45% of male told always their parents or guardian understand the problems and worries for the past 30 days.

Chi-square for the group obtained was 1001.04 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How often did your parents or guardian understand your problems and worries for the past 30 days?"It was noted that the response pattern of the male and female students on the issue "How often did your

parents or guardian understand your problems and worries for the past 30 days?"were different. Male students were disproportionately associated with the response of rarely, sometimes, most of the time and always. Female students were disproportionately associated with the response of never.

The graphical representations of the responses to the question to "How often did your parents or guardian understand your problems and worries for the past 30 days?" among male and female students are presented in figure 4.103.

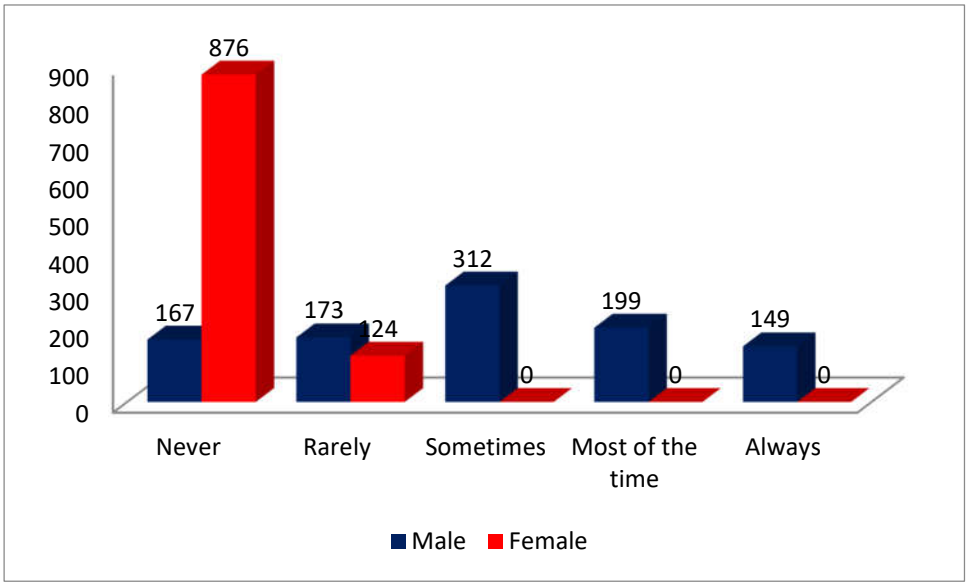

Figure 4.103: *"How often did your parents or guardian understand your problems and worries for the past 30 days?" among male and female students*

Table 4.141

Analysis on the question "How often did your parents or guardian understand your problems and worries for the past 30 days?" among government, aided and self-financing students

Category		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & p-value
Government	Count	367	120	99	60	34	680	Chi-square = 12.248, p = .000
	Expected Count	375.02	103.36	102.0	70.38	29.24	680.0	
	% of Total	18.35%	6.0%	4.95%	3.0%	2.2%	34.0%	
Aided	Count	380	84	89	67	20	640	
	Expected Count	352.96	97.28	96.0	66.24	27.52	640.0	
	% of Total	19.0%	4.2%	4.45%	3.35%	1.0%	32.0%	
self-financing	Count	356	100	112	80	32	680	
	Expected Count	375.02	103.36	102.0	70.38	29.24	680.0	
	% of Total	17.8%	5.0%	5.1%	4.0%	1.6%	34.0%	
Total	Count	1103	304	300	207	86	2000	
	Expected Count	1103.0	300.0	300.0	200.0	100.0	2000.0	
	% of Total	55.15%	15.2%	15.0%	10.35%	4.3%	100.0%	

As shown in Table 4.141, 52.9% of government, 59.4% of aided, and 52.9% of self-financing students told that parents or guardian never understood their problems and worries for the past 30 days. 17.6% of government, 12.5% of aided, and 14.7% of self-financing students told that parents or guardians rarely understood. 14.7% of government, 15.6% of aided, and 14.7% of self-financing students told that parents or guardians sometimes understood. 8.8% of government, 9.4% of aided, and 11.8% of self-financing students told that parents or guardians most of the time understood. 5.9% government, 3.1% aided, and 5.9% of self-financing students told that their parents or guardians always understood the problems and worries of their wards.

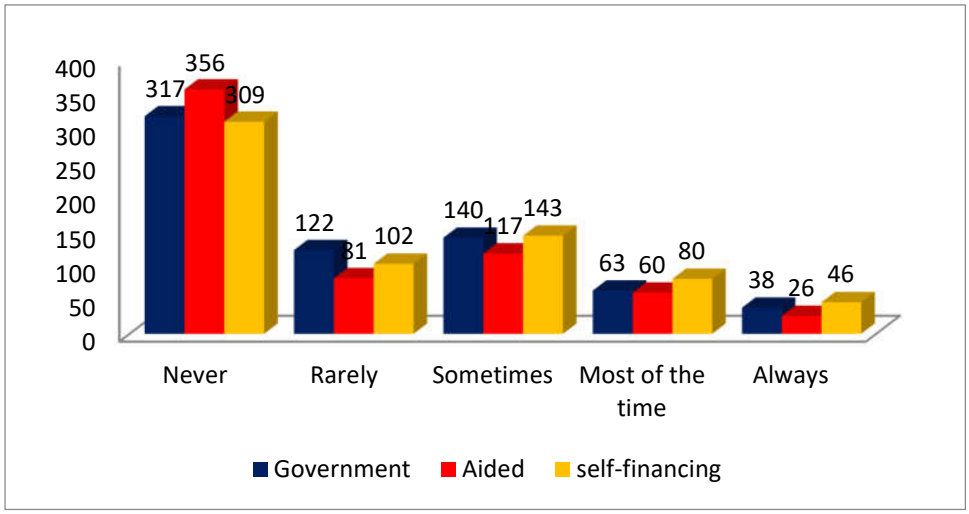

Figure 4.104: *"How often did your parents or guardian understand your problems and worries for the past 30 days?*

The value of Chi-square obtained was 35.308, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How often did your parents or guardian understand your problems and worries for the past 30 days?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How often did your parents or guardian understand your problems and worries for the past 30 days?" were different. Government college students were disproportionately associated with the response of rarely and always. Aided college students were disproportionately associated with the response of never and sometimes. Self-financing college students were disproportionately associated with the response of most of the time and always.

The graphical representations of the responses to the question to "How often did your parents or guardian understand your problems and worries for the past 30 days?" among government, aided and self-financing college students are presented in figure 4.104.

Table 4.142

Analysis on the question "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among urban and rural area students

		Never	rarely	sometimes	Most of the time	Always		chi square and p-value
Urban	**Count**	546	162	176	80	36	1000	Chi square= 20.68 p=0.000
	Expected Count	503.0	153.0	199.0	98.5	46.5	1000.0	
	% Total	27.3%	8.1%	8.8%	4.0%	1.8%	50.0%	
Rural	**Count**	460	144	222	117	57	1000	
	Expected Count	503.0	153.0	199.0	98.5	46.5	1000.0	
	% Total	23.0%	7.65%	11.1%	5.85%	3.0%	50.0%	
Total	**Count**	1006	306	398	197	93	2000	
	Expected Count	1006.0	306.0	398.0	197.0	93.0	2000.0	
	% Total	50.3%	15.3%	19.9%	9.85%	4.65%	100.0%	

As shown in Table 4.142, 27.3% of urban and 23.0%of rural told that parents or guardians never know what they were doing at free time. 8.1% of urban and 7.6% of rural area students told rarely. 8.8% of urban and 11.1% of rural area students told sometimes. 4.0% of urban and 5.85% of rural area students told most of the time. 1.8% of urban and 3.0% of rural area students told always parents or guardians know what they were doing with free time for the past 30 days.

The Chi-square value obtained was 646.68, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"It was noted that the response

pattern of the urban and rural area students on the issue "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" were different. Urban area students were disproportionately associated with the response of never and rarely. Rural area students were disproportionately associated with the response of sometimes, most of the times and always.

The graphical representations of the responses to the question to "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among urban and rural area students are presented in figure 4.105.

Figure 4.105

"How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among male and female students

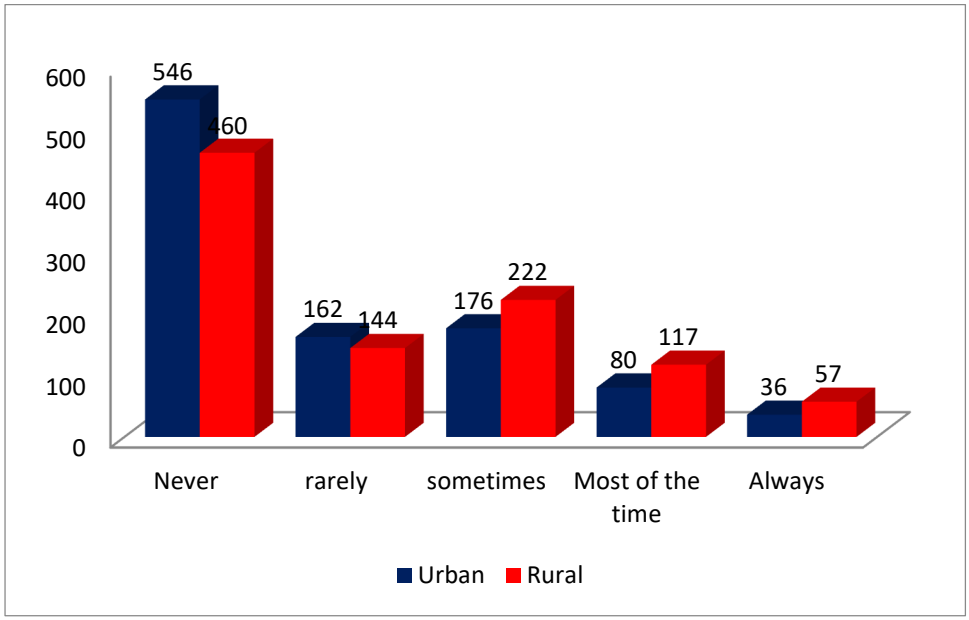

Table 4.143

Analysis on the question "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"

		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square &p-value
Male	**Count**	213	238	287	185	77	1000	Chi-square= 646.68 p= 0.000
	Expected Count	500.0	174.5	195.0	92.5	38.5	1000.0	
	% Total	10.65%	11.9%	14.35%	9.25%	3.85%	50.0%	
Female	**Count**	786	111	103	0	0	1000	
	Expected Count	500.0	174.0	195.0	92.5	38.5	1000.0	
	% Total	39.3%	5.55%	5.15%	.0%	.0%	50.0%	
Total	**Count**	999	349	390	185	77	2000	
	Expected Count	999.0	349.0	390.0	185.0	77.0	2000.0	
	% Total	49.95%	17.45%	19.5%	9.25%	3.85%	100.0%	

As shown in Table 4.143, 10.65% of male and 29.3% of female students told that parents or guardians never know what they were doing at free time. 11.9% of male and 5.55% of female students told rarely. 14.35%of male and 5.15% of female students told sometimes. 9.25% of male and 0% female students told most of the time. 3.85% of male and 0% of female students told always parents or guardians know what they were doing with free time for the past 30 days.

The value of Chi-square obtained was 646.68 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"It was noted that the response pattern of the male and female students on the issue "How often did

your parents or guardians really know what you were doing with your free time for the past 30 days?" were different. Male students were disproportionately associated with the response of rarely, sometimes, most of the time and always. Female students were disproportionately associated with the response of never.

The graphical representations of the responses to the question to "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"among male and female students are presented in figure 4.106.

Figure 4.106: *"How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among male and female students*

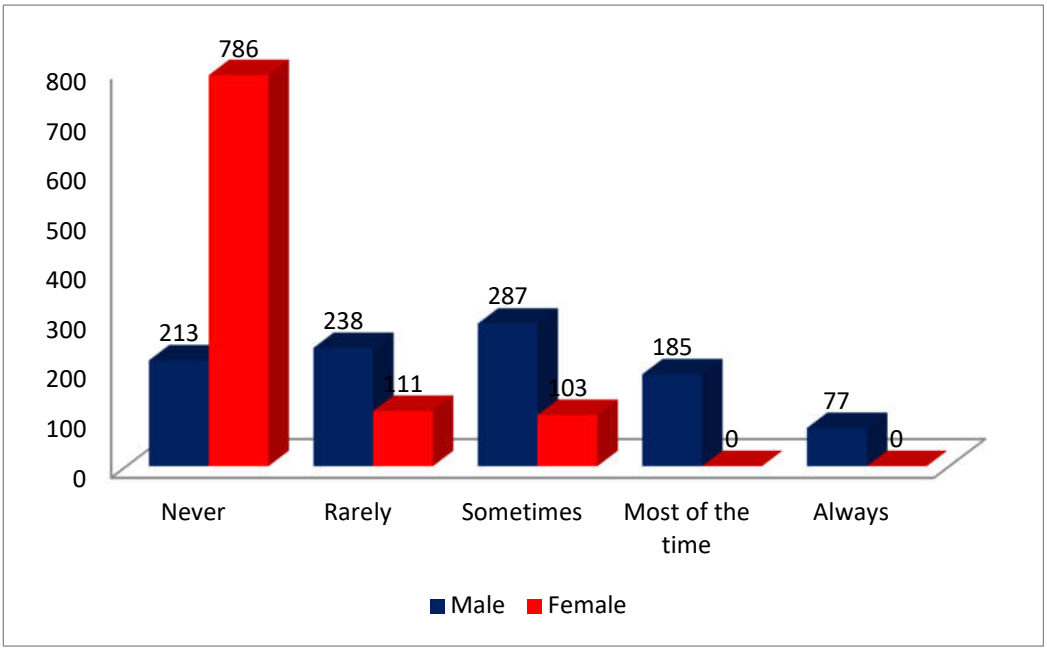

Table 4.144

Analysis on the question "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among government, aided and self-financing students

Category		Never	Rarely	Sometimes	Most of the time	Always	Total	Chi-square & p-value
Government	Count	317	122	140	63	38	680	Chi-square = 23.897, P = 0.002
	Expected Count	333.88	103.7	136.0	69.02	37.4	680.0	
	% of Total	15.85%	6.1%	7.0%	3.15%	1.9%	34.0%	
Aided	Count	356	81	117	60	26	640	
	Expected Count	314.24	97.6	128.0	64.96	35.2	640.0	
	% of Total	17.8%	4.05%	5.85%	3.0%	1.3%	32.0%	
self-financing	Count	309	102	143	80	46	680	
	Expected Count	333.88	103.7	136.0	69.02	37.4	680.0	
	% of Total	15.45%	5.1%	7.15%	4.0%	2.3%	34.0%	
Total	Count	982	305	400	203	110	2000	
	Expected Count	982.0	305.0	400.0	203.0	110.0	2000.0	
	% of Total	49.1%	15.25%	20.0%	10.15%	5.5%	100.0%	

As shown in Table 4.144, 47.1% of government, 56.3% of aided, and 47.1% of self-financing students informed that parents or guardians really never know what their wards were doing with their free time for the past 30 days. 17.6% of government, 12.5% of aided, and 14.7% of self-financing students told rarely. 20.6% of government, 18.8% of aided, and 20.6% of self-financing students told sometimes. 8.8% of government, 9.4% of aided, and 11.8% of self-financing students told most of the time. 5.9% of government, 3.1% of aided, and 5.9% of self-financing students informed that always parents or guardians knew what their wards were doing during free time for the past 30 days.

The value of Chi-square obtained was 23.897, which was significant at 0.05 level of significance, as the p-value obtained 0.002 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" were different. Government college students were disproportionately associated with the response of rarely, sometimes and always. Aided college students were disproportionately associated with the response of never. Self-financing college students were disproportionately associated with the response of sometimes, most of the time and always.

The graphical representations of the responses to the question to "How often did your parents or guardians really know what you were doing with your free time for the past 30 days?"among government, aided and self-financing college students are presented in figure 4.107.

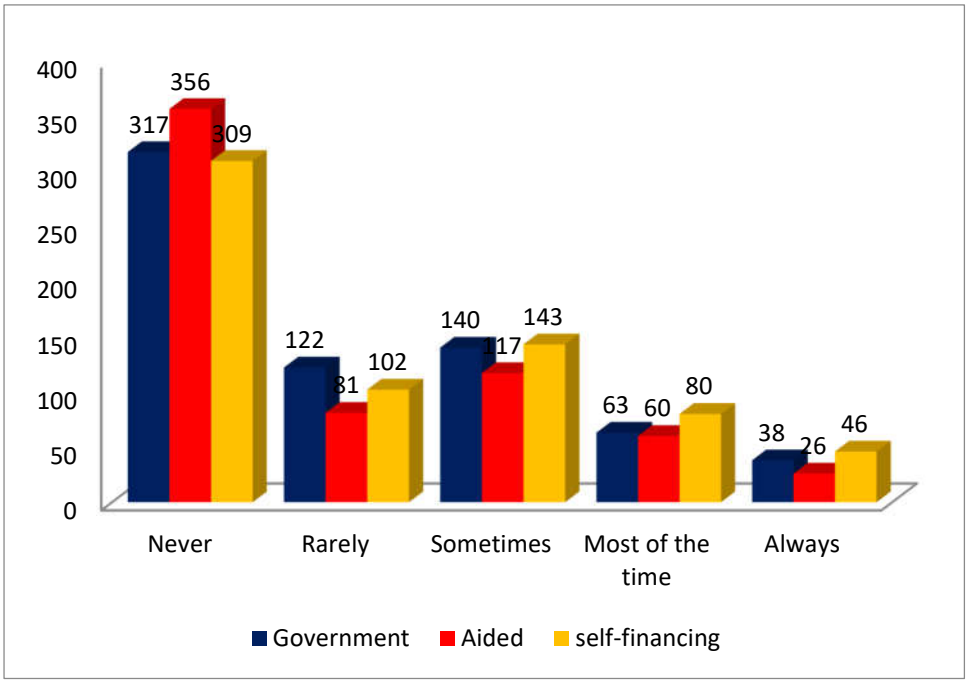

Figure 4.107: *"How often did your parents or guardians really know what you were doing with your free time for the past 30 days?" among government, aided and self-financing students*

Table 4.145

Analysis on the question "In how many sports teams did you play during past 12 months?" among urban and rural area students

		0 team	1 team	2 teams	3 or more teams		chi square and p-value
Urban	**Count**	655	218	117	10	1000	chi square= 31.55 p=0.000
	Expected Count	596.0	247.5	147.5	9.0	1000.0	
	% Total	32.8%	10.9%	5.9%	0.5%	50.0%	
Rural	**Count**	537	277	178	8	1000	
	Expected Count	596.0	247.5	147.5	9.0	1000.0	
	% Total	26.9%	13.9%	8.9%	0.4%	50.0%	
Total	**Count**	1192	495	295	18	2000	
	Expected Count	1192.0	495.0	295.0	18.0	2000.0	
	% Total	59.6%	24.8%	14.8%	0.9%	100.0%	

As shown in Table 4.145, 32.8% urban and 26.9% rural area students never played in sport teams during past 12 months. 10.9% of urban and 13.9% of rural area students played in one team. 5.9% of urban and 8.9% of rural area students played in two teams. 0.5% of urban and 0.4% of rural area students played in three or more teams.

The value of Chi-square obtained was 31.55, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "In how many sports teams did you play during past 12 months?"It was noted that the response pattern of the urban and rural area students on the issue "In how many sports teams did you play during past 12 months?" were different. Urban area students were disproportionately associated with the response of zero team and three or more teams. Rural area students were disproportionately associated with the response of one team and two teams.

The graphical representations of the responses to the question to "In how many sports teams did you play during past 12 months?" among urban and rural area students are presented in figure 4.108.

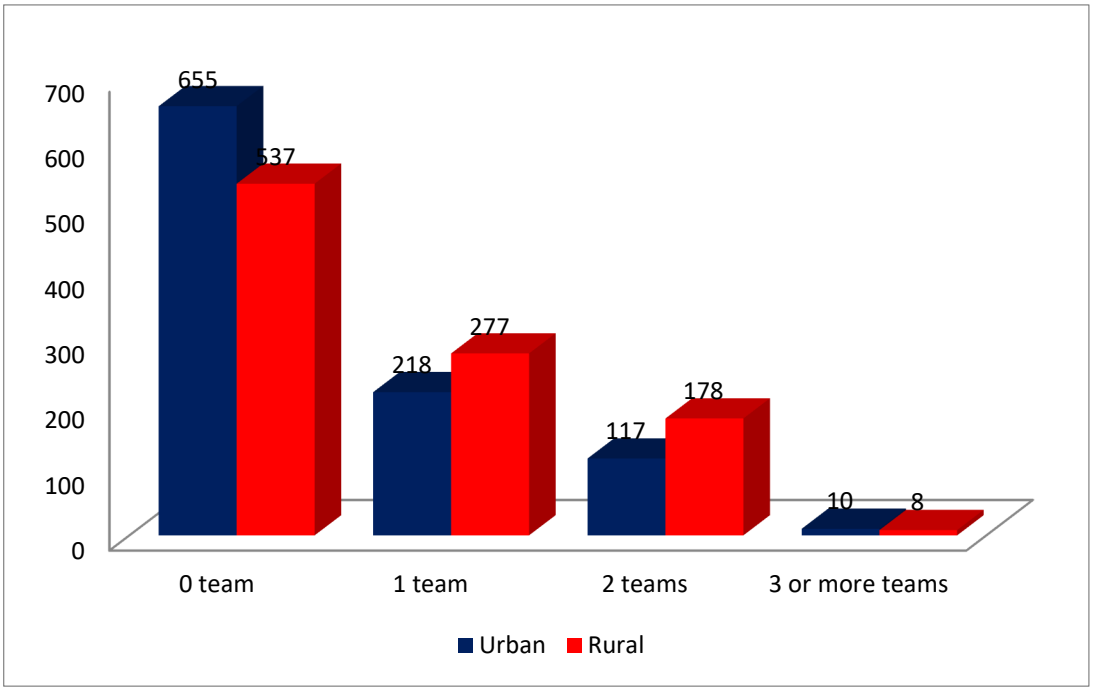

Figure 4.108: *"In how many sports teams did you play during past 12 months?" among urban and rural area students*

Table 4.146

Analysis on the question "In how many sports teams did you play during past 12 months?" among male and female students

		0 team	1 team	2 teams	3 or more teams	Total	Chi-square & p- value
Male	**Count**	392	395	195	18	1000	Chi-square=351.16 P= 0.000
	Expected Count	593.0	246.0	149.0	12.0	1000.0	
	% Total	19.6%	19.75%	9.75%	0.9%	50.0%	
Female	**Count**	794	97	103	6	1000	
	Expected Count	593.0	246.0	149.0	12.0	1000.0	
	% Total	39.7%	4.85%	5.15%	0.3%	50.0%	
Total	**Count**	1186	492	298	24	2000	
	Expected Count	1186.0	492.0	298.0	24.0	2000.0	
	% Total	59.3%	24.6%	14.9%	1.2%	100.0%	

As shown in Table 4.146, 19.6% of male and 39.7% of female students never played in sport teams during past 12 months. 19.75% of male and 4.85% female students played in one team. 9.75% male and 5.15% female students played in two teams. 0.9% male played in three or more teams.

The value of Chi-square obtained was 364.1, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "In how many sports teams did you play during past 12 months?"It was noted that the response pattern of the male and female students on the issue "In how many sports teams did you play during past 12 months?" were different. Male was disproportionately associated with the response of one team, two teams and three or more teams. Female was disproportionately associated with the response of zero team.

The graphical representations of the responses to the question to "In how many sports teams did you play during past 12 months?" among male and female students are presented in figure 4.109.

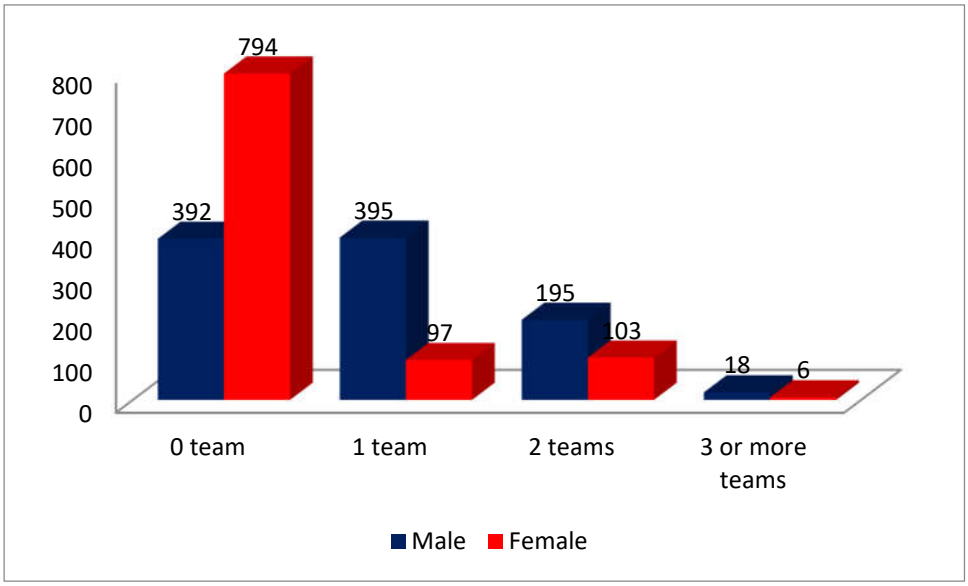

Figure 4.109: *"In how many sports teams did you play during past 12 months?" among male and female students*

Table 4.147

Analysis on the question "how many sports teams did you play during the past 12 months?" among government, aided and self-financing students

Category		0 team	1 team	2 teams	3 or more teams	Total	Chi-square & P value
Government	Count	396	160	117	7	680	Chi-square = 27.349, P = .000
	Expected Count	405.3	168.3	100.3	6.1	680.0	
	% of Total	19.8%	8.0%	5.9%	.4%	34.0%	
Aided	Count	418	156	59	7	640	
	Expected Count	381.4	158.4	94.4	5.8	640.0	
	% of Total	20.9%	7.8%	3.0%	.4%	32.0%	
self-financing	Count	378	179	119	4	680	
	Expected Count	405.3	168.3	100.3	6.1	680.0	
	% of Total	18.9%	9.0%	6.0%	.2%	34.0%	
Total	Count	1192	495	295	18	2000	
	Expected Count	1192.0	495.0	295.0	18.0	2000.0	
	% of Total	59.6%	24.8%	14.8%	.9%	100.0%	

As shown in Table 4.147, 58.2% government, 65.3% aided, 55.6% self-financing students never played in a sports team during the past 12 months. 23.5% government, 24.4% aided, 26.3% self-financing students played in one sport team. 17.2% government, 9.2% aided, 17.5% self-financing students played in two teams. 1% government, 1.1% aided, 0.6% self-financing students played in three or more teams.

Chi-square obtained for the group was 27.349 which were significant at 0.05 level of significance, as the p-value 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It may be concluded that there was no significant association between type of college and the response on the question of "How many sports teams did you play during the past 12 months?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many sports teams did you play during the past 12 months?" were different. Government college students were disproportionately associated with the response of two teams and three or more teams. Aided college students were disproportionately associated with the response of zero team and three or more teams. Self-financing college students were disproportionately associated with the response of one team and two teams.

The graphical representations of the responses to the question to "In how many sports teams did you play during past 12 months?" among government, aided and self-financing college students are presented in figure 4.110

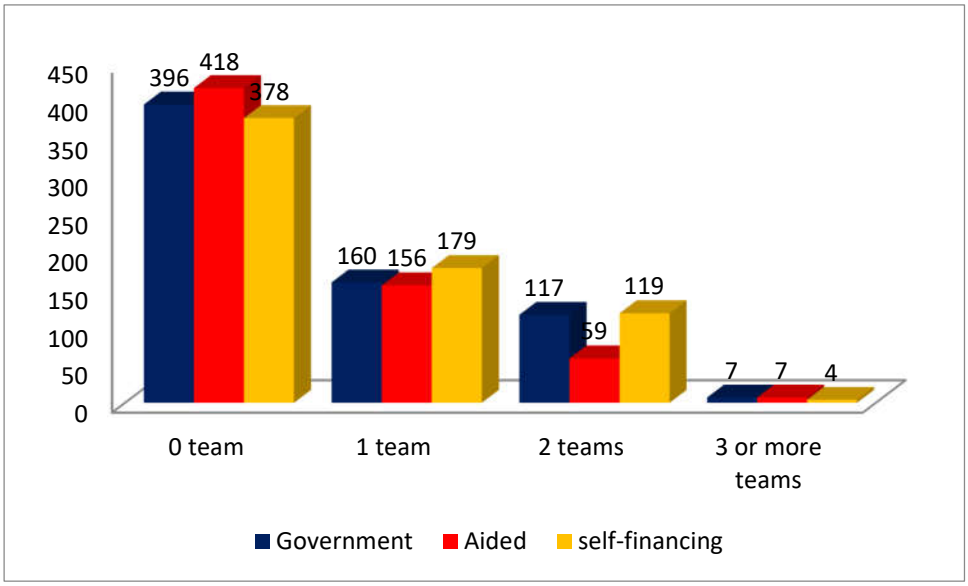

Figure 4.110: *"In how many sports teams did you play during past 12 months?" among government, aided and self-financing students*

Table 4.148

Analysis on the question "Have you been taught during this college year in any of your classes the benefits of physical activity?" among urban and rural area students

		Yes	No	I do not know		chi square and p-value
Urban	Count	798	121	81	1000	chi square=24.59 p=0.00
	Expected Count	750.0	150.5	99.5	1000.0	
	% Total	39.9%	6.05%	4.05%	50.0%	
Rural	Count	702	180	118	1000	
	Expected Count	750.0	150.5	99.5	1000.0	
	% Total	35.1%	9.0%	5.9%	50.0%	
Total	Count	1500	301	199	2000	
	Expected Count	1500.0	301.0	199.0	2000.0	
	% Total	75.0%	15.05%	9.95%	100.0%	

As shown in Table 4.148, 39.9% urban and 35.1% rural area students informed that they were taught about physical activity at the college. 6.5% urban and 9.0% rural area students told no. 4.05% urban and 5.9% rural area students told that they don't know.

The value of Chi-square obtained was 24.59, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "Have you been taught during this college year in any of your classes the benefits of physical activity?"It was noted that the response pattern of the urban and rural area students on the issue "Have you been taught during this college year in any of your classes the benefits of physical activity?" were different. Urban area students were disproportionately associated with the response yes, and rural area students were disproportionately associated with the response of no.

The graphical representations of the responses to the question to "Have you been taught during this college year in any of your classes the benefits of physical activity?" among urban and rural area students are presented in figure 4.111.

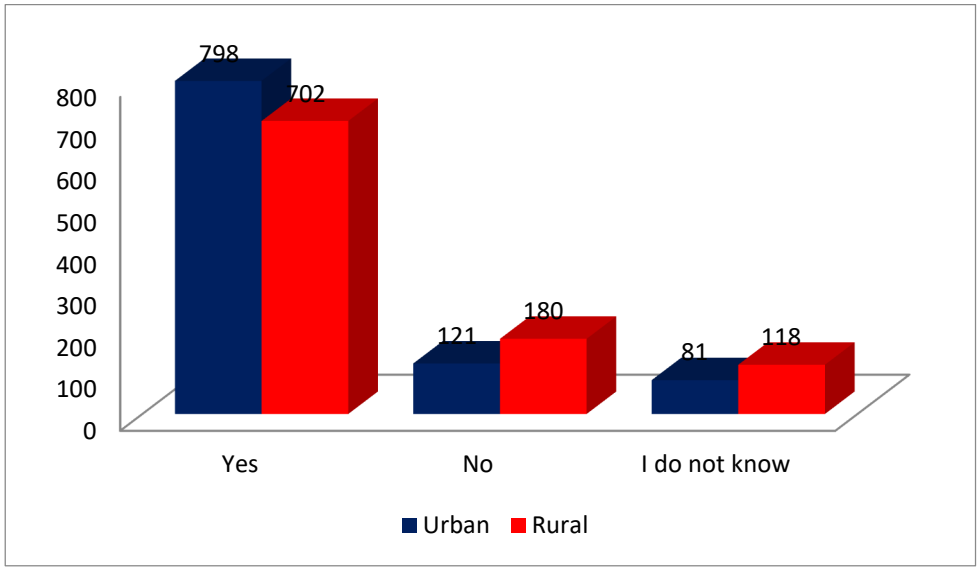

Figure 4.111: *"Have you been taught during this college year in any of your classes the benefits of physical activity?" among urban and rural area students*

Table 4.149

Analysis on the question "Have you been taught during this college year in any of your classes the benefits of physical activity?" among male and female students

		Yes	No	I don't know	Total	Chi-square & P value
Male	**Count**	687	235	78	1000	Chi-square=56.94 P= 0.000
	Expected Count	736.0	172.0	92.0	1000.0	
	% Total	35.0%	11.75%	3.9%	50.0%	
Female	**Count**	785	109	106	1000	
	Expected Count	736.0	172.0	92.0	1000.0	
	% Total	39.25%	5.45%	5.3%	50.0%	
Total	**Count**	1472	344	184	2000	
	Expected Count	1472.0	344.0	184.0	2000.0	
	% Total	73.6%	17.2%	9.2%	100.0%	

As shown in Table 4.149, 35% male and 39.25% female students informed that they were taught about physical activity at the college. 11.75% male and 5.45% female students told no. 3.9% male and 5.3% female students told that they don't know.

The value of Chi-square obtained was 56.94 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "Have you been taught during this college year in any of your classes the benefits of physical activity?"It was noted that the response pattern of the male and female students on the issue "Have you been taught during this college year in any of your classes the benefits of physical activity?" were different. Male students were disproportionately associated with the response

no, female students were disproportionately associated with the response of yes.

The graphical representations of the responses to the question to "Have you been taught during this college year in any of your classes the benefits of physical activity?" among male and female students are presented in figure 4.112.

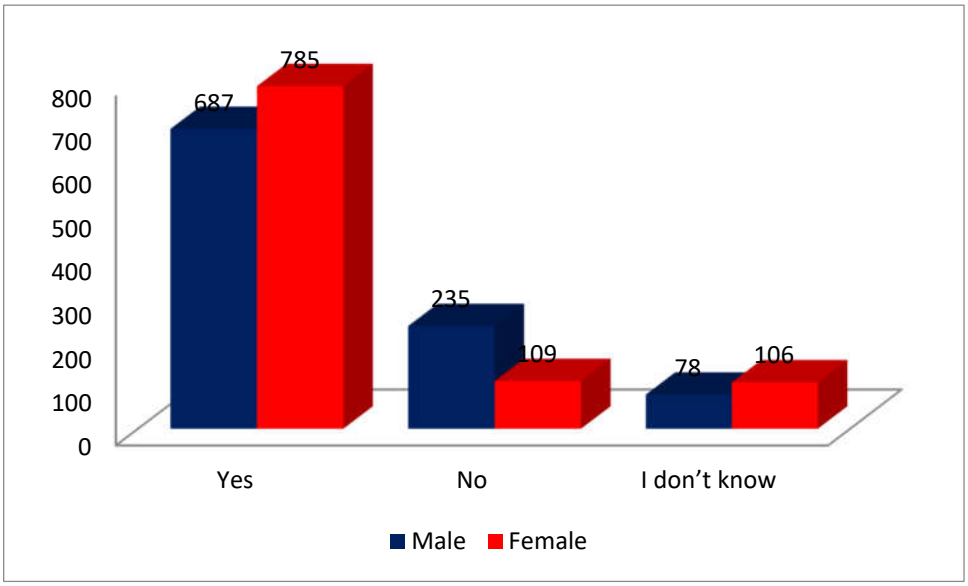

Figure 4.112: *"Have you been taught during this college year in any of your classes the benefits of physical activity?" among male and female students*

Table 4.150

Analysis on the question "This college year, have you been taught in any of your classes about the benefits of physical activity?" among government, aided and self-financing students

Category		Yes	No	I do not know	Total	Chi-square & P value
Government	**Count**	508	100	72	680	Chi-square = 28.46, P = .000
	Expected Count	515.44	101.66	62.9	680.0	
	% of Total	25.4%	5.0%	3.6%	34.0%	
Aided	**Count**	528	76	36	640	
	Expected Count	485.12	95.68	59.2	640.0	
	% of Total	26.4%	3.8%	1.8%	32.0%	
Self-financing	**Count**	480	123	77	680	
	Expected Count	515.44	101.66	62.9	680.0	
	% of Total	24.0%	6.15%	3.85%	34.0%	
Total	**Count**	1516	299	185	2000	
	Expected Count	1516.0	299.0	185.0	2000.0	
	% of Total	75.8%	14.95%	9.25%	100.0%	

As shown in Table 4.150, 73.5% government, 81.3% aided, and 70.6% Self-financing students told that college taught about the benefits of physical activity. 14.7% government, 12.5% aided, and 17.6% Self-financing students said no. 1.8% government, 6.3% aided, and 11.8% Self-financing students told that I don't know.

The obtained Chi-square for this group was 24.412 which were significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the category of college and response. It

may be concluded that there was no significant association between type of college and the response on the question of "This college year, have you been taught in any of your classes about the benefits of physical activity?"It was noted that the response pattern of the government, aided and Self-financing college students on the issue "This college year, have you been taught in any of your classes about the benefits of physical activity?" were different. Government college students were disproportionately associated with the response of I don't know. Aided college students were disproportionately associated with the response of yes. Self-financing college students were disproportionately associated with the response of no and I don't know.

The graphical representations of the responses to the question to "Have you been taught during this college year in any of your classes the benefits of physical activity?" among government, aided and self-financing college students are presented in figure 4.113.

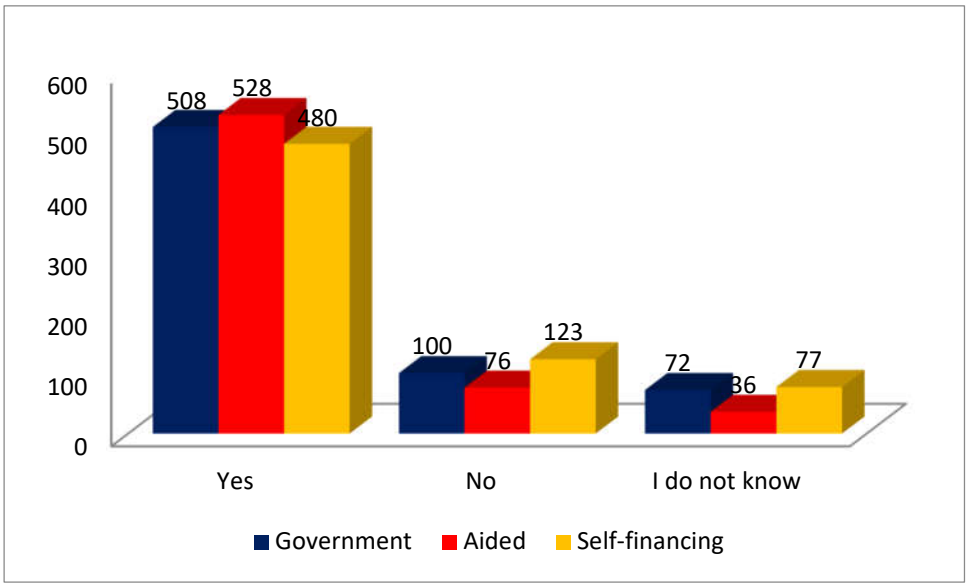

Figure 4.113: *"Have you been taught during this college year in any of your classes the benefits of physical activity?" among government, aided and self-financing students*

Table 4.151

Analysis on the question "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among urban and rural area students

		0 day	1 or 2 days	3 or 4 days	5 or 6 days	7 days		chi square and p-value
Urban	**Count**	481	161	170	78	104	1000	chi square=16.74 p=0.000
	Expected Count	465.0	174.38	183.1	103.4	74.59	1000.0	
	% Total	24.05%	8.05%	8.0%	3.9%	5.2%	50.0%	
Rural	**Count**	422	178	180	123	41	1000	
	Expected Count	465.0	174.38	183.1	103.4	74.59	1000.0	
	% Total	21.1%	8.9%	9.0%	6.15%	2.05%	50.0%	
Total	**Count**	903	339	356	201	145	2000	
	Expected Count	903.0	339.0	356.0	201.0	145.0	2000.0	
	% Total	46.5%	16.95	17.8%	10.05%	7.25%	100.0%	

As shown in Table 4.151, 24.05% urban and 21.1% rural area students never did exercise. 8.05% of urban and 8.9% of rural area students has done exercise for one or two days. 8.0%of urban and 9.0% of rural area students done exercise for three or four days. 3.9% of urban and 6.15% of rural area students done exercise for five or six days. 5.2% of urban and 2.05% of rural area students done exercise for seven days.

The value of Chi-square obtained is16.74, which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the area and response. It may be concluded that there was a significant association between area and their response on the question of "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?"It was noted that the response pattern of the urban and rural students on the issue "How many days did you do exercises such as push-ups, sit-ups, toe touch,

knee bending, leg stretching or weight training in the last one week?" were different. Urban area students were disproportionately associated with the response of zero days and seven days of doing exercise and training. Rural area students were disproportionately associated with the response of one or two, three or four and five or six days of exercise in the last one week.

The graphical representations of the responses to the question to "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among urban and rural area students are presented in figure 4.114.

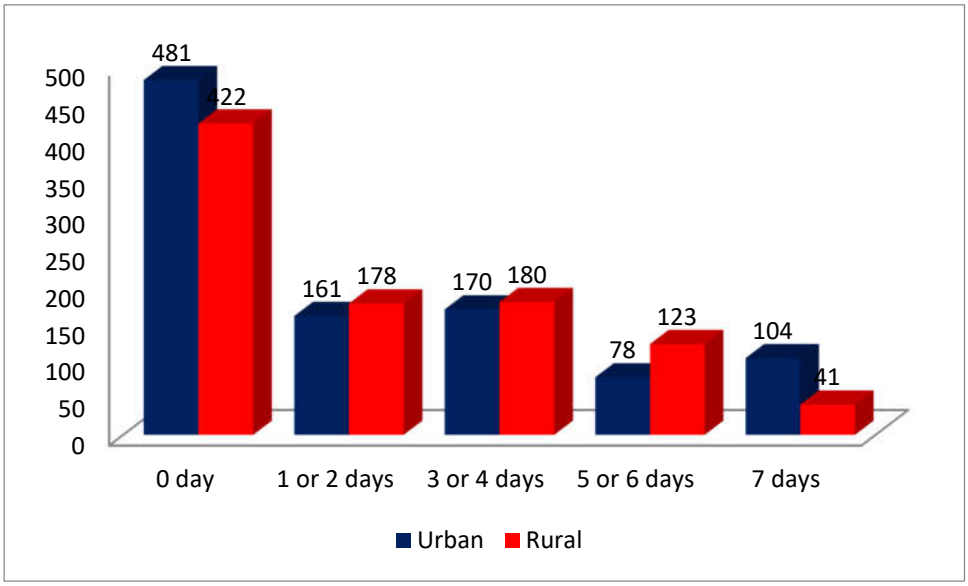

Figure 4.114: *"How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among urban and rural area students*

Table 4.152

Analysis on the question "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?"

		0 day	1 or 2 days	3 or 4 days	5 or 6 days	7 days	Total	Chi-square & P value
Male	**Count**	285	243	239	127	106	1000	Chi-square=188.40 P= 0.000
	Expected Count	436.0	183.5	176.5	117.5	87.0	1000.0	
	% Total	14.25%	12.15%	11.95%	6.35%	5.3%	50.0%	
Female	**Count**	586	124	114	108	68	1000	
	Expected Count	436.0	183.5	176.5	117.5	87.0	1000.0	
	% Total	29.3%	6.2%	5.7%	5.4%	3.4%	50.0%	
Total	**Count**	871	367	353	235	174	2000	
	Expected Count	871.0	367.0	353.0	235.0	174.0	2000.0	
	% Total	43.55%	18.35%	17.65%	11.75%	8.7%	100.0%	

As shown in Table 4.152,14.25% male and 29.3% female students never did exercise. 12.15% male and 6.2% female students have done exercise for one or two days. 11.95% male and 5.7% female students have done exercise for three or four days. 6.35% male and 5.4% female students have done exercise for five or six days. 5.3% male and 3.4% female done exercise for seven days.

The value of Chi-square obtained is 188.40 which was significant at 0.05 level of significance, as the p-value obtained was 0.000 that was lesser than 0.05 level. Thus, it may be rejected the null hypothesis that there was no association between the gender and response. It may be concluded that there was a significant association between gender and their response on the question of "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?"It was noted that the response pattern of the male and female students on the issue "How many days did you do exercises such as push-ups, sit-ups,

toe touch, knee bending, leg stretching or weight training in the last one week?" were different. Male students were disproportionately associated with the response of one or two days, three or four days, five or six days and seven days of doing exercise and training. Female students were disproportionately associated with the response of never did exercise in the last one week.

The graphical representations of the responses to the question to "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among male and female students are presented in figure 4.115.

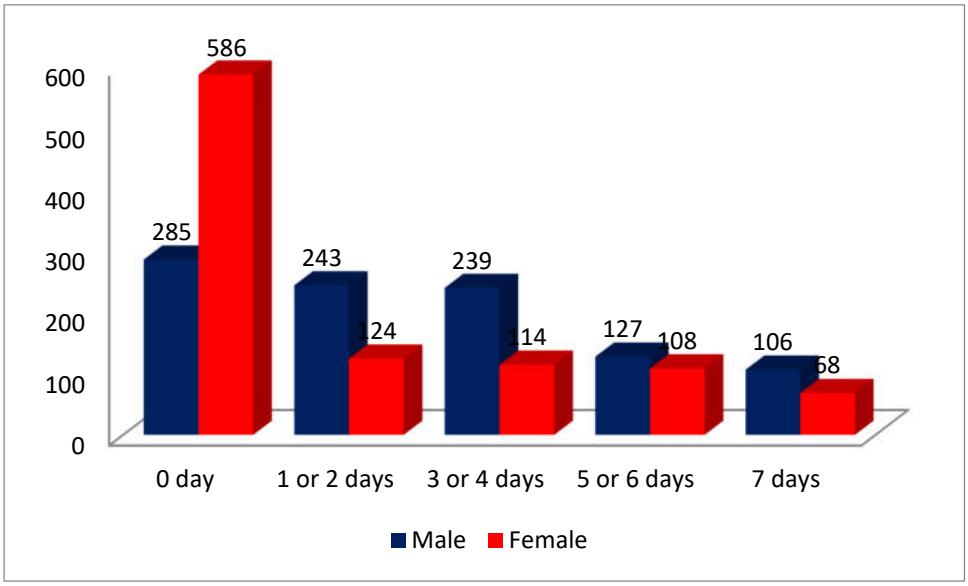

Figure 4.115: *"How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among male and female students*

Table 4.153

Analysis on the question "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among government, aided and self-financing students

Category		0 days	1 or 2 days	3 or 4 days	5 or 6 days	7 days	Total	Chi-square & P value
Government	Count	300	120	120	60	80	680	Chi-square = 11.344, P = 0.183
	Expected Count	299.2	115.6	115.6	74.8	74.8	680.0	
	% of Total	15.0%	6.0%	6.0%	3.0%	4.0%	34.0%	
Aided	Count	280	100	120	80	60	640	
	Expected Count	281.6	108.8	108.8	70.4	70.4	640.0	
	% of Total	14.0%	5.0%	6.0%	4.0%	3.0%	32.0%	
self-financing	Count	300	120	100	80	80	680	
	Expected Count	299.2	115.6	115.6	74.8	74.8	680.0	
	% of Total	15.0%	6.0%	5.0%	4.0%	4.0%	34.0%	
Total	Count	880	340	340	220	220	2000	
	Expected Count	880.0	340.0	340.0	220.0	220.0	2000.0	
	% of Total	44.0%	17.0%	17.0%	11.0%	11.0%	100.0%	

As shown in Table 4.153, 44.1% government, 43.8% aided, and 44.1% self-financing students didn't do any exercise in the last one week. 17.6% government, 15.6% aided, and 6% self-financing students did exercise for one or two days. 17.6% government, 18.8% aided, and 14.7% self-financing students did exercise for three or four days. 8.8% government, 12.5% aided, and 11.8% self-financing students did exercise for five or six days. 11.8% government, 9.4% aided, and 11.8% self-financing students did exercise for seven days in the last one week.

The value of Chi-square obtained is 11.344, which was not significant at 0.05 level of significance, as the p-value obtained is 0.183 that was greater than 0.05 level. Thus it may be accepted the null hypothesis that there was no association between the category of college and response. It may be concluded that there was significant association between type of college and the response on the question of "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?"It was noted that the response pattern of the government, aided and self-financing college students on the issue "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" were same.

The graphical representations of the responses to the question to "How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among government, aided and self-financing college students are presented in figure 4.116.

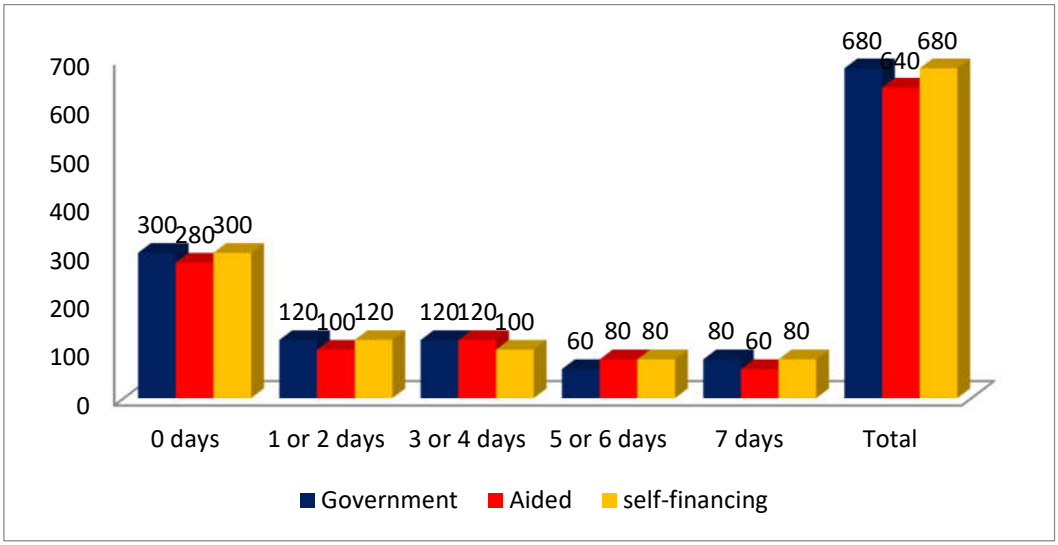

Figure 4.116: *"How many days did you do exercises such as push-ups, sit-ups, toe touch, knee bending, leg stretching or weight training in the last one week?" among government, aided and self-financing students*

DISCUSSION ON FINDINGS

Strong intentions to do exercise, was not associated with actual behaviour. Interactive discussion through focus groups unraveled attitudes and barriers influence physical activity behaviour. Doing physical activity to feel good and to enjoy themselves was more important for young people than the common assumptions of 'winning' and pleasing others. Further this age group, 17-25 saw traditional health promotion messages as 'empty' and 'fear of their future health' was not a motivating factor to change current behaviour.

Similar studies were conducted in the field of health risk behaviour and attitude towards physical activity on different subjects but the results were in connection with the findings of this study and are as follows. According to Francois Trudeau & Roy J. Stephard (2005), children and youth currently form the most active segments of the population in developed societies, there is a marked trend toward an increase in sedentary lifestyle among school- age children. They were conducted a study on 'Contribution of school programmes to physical activity levels and attitudes in children and adults'. The purpose of this review is to analyse the effects of school Physical Education programmes on: (i) the physical activity levels of participants as children and adults: and (ii) attitude towards physical activity and Physical Education in the same groups. Based on the literature analysed, it can be suggested that a sufficient quantity of a quality Physical Education programcan contribute significantly to the overall amount of moderate to intense physical activity of school- age child.

Joly Thomas & PT Joseph (2019), conducted a study on construction and standardization of physical activity attitude scale for professional college students on social factors. The purpose of this study was to construct and standardize physical activity attitude scale for professional college students.

They are one of the highly stressed student communities due to high academic pressure. The main objectives of this study were to improve their attitudes towards physical activity and motivate them to use their leisure time properly by involving in various physical activities. The scale consists of four dimensions, such as physical, academic, psychological and social. The present study is limited to only on social factors. The population for this study consisted of engineering colleges from all the fourteen districts of Kerala.

Babu D Thattil (2007) conducted a study on "health Risk Behaviour and Attitude Towards physical Activity among Higher Secondary School Students in Kerala". 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 behavior, 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 .

Wan-Chen Hsu &Cehia-Hsun Chiang (2020) conducted a cross-Sectional study on "Effects of BMI and perceived importance of health on the health behaviour of college students". This study investigates the effects of BMI and the perceived importance of health-on-health behaviours among college students on Taiwan. The result showed a significant difference between genders in health behaviours among college students. Moreover, there was an interaction between BMI and perception for exercise behaviours.

Discussion on urban and rural students on their health risk behaviour

In the questions under dietary behaviour, maximum number of urban and rural area students was within the healthy height and weight ratio. Few students were in the border line obesity. More number of urban and rural students never felt hungry because of not having food at home in the past 30

days. More number of urban and rural students usually eat fruits at least one time in a day whereas few students ate rarely. More number of students ate vegetables at least one time in a day. Results proved that maximum number of urban and rural students had no health risk behaviour based on the questions on dietary behaviour. According to New England journal of Medicine (2017), among adults U. S Has topped with 79.4 million people having obesity and China with 57.3 million people.

In the questions under hygienic behaviour a greater number of urban and rural students washed the hands under running water or tap. Very few students had unhygienic behaviour. More number of colleges maintained the toilets and latrines safe and hygienic. Few urban and rural students always washed the hands after the use of toilet or latrine. Students have to be educated and informed about the hygienic behaviour on this issue.

In the questions related to violence related behaviour maximum number of urban and rural students never had physical fight during the past one year. There were few students who fought at least one or two times. Such students had to be addressed about the cooperation, adjustment and control the emotion, anger.

In the questions of mental health a greater number of urban and rural students rarely felt loneliness in the past 30 days. Few urban and rural students considered attempting suicide during the past one year. More number of urban and rural students had minimum three or more friends. Results proved that mental health of urban and rural students were strong enough to cope up with the issues around them.

Depression, anxiety, loneliness are peaking in college students, nationwide study, conducted by Boston University researcher Sarah Ketchen Lipson (2021) reveals a majority of students say mental health has impacted

their academic performance. The prevalence of depression and anxiety in young people continues to increase, now reaching its highest levels, a sign of mounting stress factors due to the pandemic, political unrest and systematic racism and inequality.

In the questions tobacco use a greater number of urban and rural students never had cigarette and never used any other form of tobacco such as gudgka, hans, panparag. Few urban and rural students who smoked cigarette and used tobacco tried to leave the habit in the past 30 days. Maximum number of students informed that neither parents nor guardians used cigarette or tobacco. Results proved that the parents or guardians who smoked cigarette and used tobacco their children also learnt from them. Parents or guardians had to inculcate the good behaviour. Children had to be informed about the dangers and side effects of smoking cigarette and using tobacco.

In the questions under alcohol and other drug use a greater number of urban and rural students never tasted alcohol. Few students had one drink of alcohol or less than 3 pegs in the last 30 days and troubled the family. Few students drank with friends and family. Few parents or guardians didn't know whether their children drink alcohol. Maximum parents or guardians never drink except few fathers and male guardian. More number of urban and rural students never used drugs like marijuana and ganja. Students started using drugs after 16 years. More number of students never injected drugs into the body. Results proved that a greater number of urban and rural students never used alcohol. Few students and their father or male guardian used alcohol and drugs. The students those who were taking alcohol and drugs may be given sufficient advice to leave the bad habit. Same time awareness about the healthy life and side effect of alcohol and drugs can be given to the students who used drugs.

Few students thought consuming tobacco, alcohol and drugs were the norms of college students. Techniques found by Haines and Spear (1996) drinking prevention program, using media campaigns, policies, and awareness events, to a program aimed at changing the perceptions of the norm in the curriculum can be adapted to change the perception of college students about the use of tobacco, alcohol and drugs.

In the questions about HIV/AIDS related knowledge few students reported that mosquito bite and touch cannot transmit HIV/AIDS. Maximum number of urban and rural students had the knowledge of mode of transmission of HIV/AIDS. Few students didn't know the mode of transmission. According to the Centres for Disease Control and Prevention (CDC, 2017) 21% of the adults newly HIV diagnosed patients in the US and nearby areas.

Discussion on rural and urban student's attitude toward physical activity

More number of urban and rural students never stayed physically active for at least 60 minutes in a day. More number of urban and rural students spent one to two hours daily watching television and other sitting activities. Urban and rural students were not going to colleges by bicycle. More number of urban and rural students reported that parents never understood their problem and parents also didn't know what their children are doing during free time. More number of urban and rural students didn't play in team games. Maximum number of urban and rural students was taught about physical activity at colleges which motivated the urban and rural students to perform some stretching and weight training exercises in the last one week.

Loss of locus of control, attitude towards health, risky behaviour tendency and perceived stress may be the reasons for not actively taking part

in daily physical activity. Engineering college students may be provided with sufficient awareness programs on the following health aspect to maintain good health. (Erika Melonashi&FleuraShkembi, 2015).

Discussion on the male and female students on their health risk behaviour

In the questions under dietary behaviour maximum male and female engineering college students never felt hungry because of not having enough food at home in the past 30 days. Three percentages of male students always felt hungry but there was no female. More number of male and female students ate fruits at least one serving in a day. Maximum number of male and female students ate vegetables minimum one time to maximum three times per day. Results proved that few male and female engineering students were not taking fruits and vegetables on their daily diet. It is necessary for the youth male and female to have adequate fruits and vegetables in the daily diet schedule. Various vitamins present in the fruits and vegetables enhance the metabolic activity of body organs to stay healthy and active. Research studies found that (Schwitzer et al., 1998; Springer, Winzelberg, Perkins & Taylor, 1999) consciousness about the body image and eating attitude will bring the awareness about healthy eating behaviour among college students. Prevention strategies for eating disorders include educational information, attitude identification, and promotion of healthier behaviors and lifestyle problems has to be addressed to bring good eating behaviours among college students.

In the questions under hygienic behavior a greater number of male and female students washed the hands before eating with running water or tap water. Female students were so hygienic than male students on washing the hands before eating. Engineering colleges had safe and hygienic toilets or latrines for male students. There was no toilet or latrine for female students at

engineering colleges. Female students were more cautious than male students in washing the hands after using toilet or latrine. Marina (2004)revealed that students those who are using tobacco, alcohol and other drugs are not washing the hands and rarely brush the teeth. To bring the hygienic behaviour among the engineering college students depends on eliminating the use of alcohol and other drugs. The reason beyond female students were more hygienic than male is, our society expects girls to be neater and tidier. Female students tend to be dressed more in clothing that is not supposed to get dirty. Female students tend to play indoors more than boys, and female students play time is more often supervised by parents, guardians or teachers than boys. (Sharyn Clough, 2011).

In the question violence related behaviour a greater number of male students involved in physical fight for one to five times. Maximum female students never involved in fight. Because of jealousy students starting fights by developing bitterness towards classmates who perform better in academics or sports. If the student hears or sees the parents or guardians fighting regularly at home, may vent frustration and anger. Some students feel shy and stay alone. Other students fail to understand the reserved nature of such students and end up thinking that they are being unfriendly and rude. Which automatically end up in fight? Few students have the habit of bullying and harassing others to seek attention. Feel that such asserting dominance would make them more popular with opposite gender. Students may be counselled on the issue to avoid physical fight. Counselling center at college may address the above-mentioned issues to the students to get out of frustration, anger and stress.

In the questions under mental health a greater number of male and female students rarely felt loneliness in the past 30 days. More number of male and female students never considered attempting suicide. More number

of male and female students had three or more friends. All the above said behaviour made the male and female students so stronger in mind. Good mental health results in good physical health. The results proved that there was no health risk behaviour involved due to mental health behaviour.

In the questions under tobacco use a greater number of male and female students never smoked a cigarette never consumed any type of tobacco. Few students those who were using cigarette tried to stop smoking in the past 12 months. More number of male and female students reported that neither parents nor guardians' smoke. Thus, behavioural influence of parent or guardian is more on the male and female students. To develop healthy behaviour among children's parents also should follow good and healthy behaviour to avoid the use of tobacco.

In the questions under alcohol and other drug use a greater number of male and female students never drank any form of alcohol. More number of male students consumed alcohol for three to fifteen days in the past 30 days. Female students never drank alcohol and never missed any classes at the college. More male students also never missed the classes and didn't create problem to family and friends after drinking alcohol. Male students started drinking alcohol after seventeen years. Few male students drank one to three pegs of alcohol with friends and family members. More number of male and female students informed that father or male guardian drank alcohol. Few drinking students reported that their parents or guardians didn't know about they drink. Few males and female used marijuana, ganga for one time at 16 to 18 years and shared syringes to inject drugs.

Diane & Jones-Palm (2015) found that participation in sports activity reduces the use of tobacco, alcohol and drugs. Engineering college curriculum may include few compulsory Physical Education and sports programmes to reduce the health risk behaviour of the students.

In the questions under HIV/AIDS related knowledge male students were very much aware of mode of transmission of HIV/AIDS than female students. A greater number of female students understood that people get infection of HIV/AIDS by using common medical injection.

Discussion on the male and female student's attitude toward physical activity

More number of male and female students never stayed physically active for at least 60 minutes in a day. More number of male and female students spent one to four houses in sitting activities. Few numbers of female students never spent more than two hours in sitting activities. More number of male and female students never ride bicycle to the college. Parents understood male student's problem sometimes but never understood female students. In the team games male participated in at least one team game whereas more female didn't participate in team games. Both male and female students admitted that colleges taught about benefits of physical activity. More number of female never did exercise. Few male students did exercise for at least one day.

The results highlighted the need for effective college health program that combines education, counselling and behavioural skill building along with environmental support to enhance students' efforts, intentions, and strategies to overcome Health-risk behaviours and to develop physical health. In addition, the findings could help policy makers to strengthen strategies and policies to maintain healthy adolescents at engineering colleges. (Malakeh Z. Malak, 2015).

To make all the students to participate in physical activity engineering college students may be offered sport events consistently with sports trends,

followed by the interest of specific groups with regard to gender (Zoran Milanovic et al., 2013).

Discussion on various categories engineering college students on their health risk behaviour

In the questions under dietary behaviuor a greater number of government, aided and self-financing college students never felt hungry because of not having food at home. A greater number of governments, aided and self-financing college students had fruits and vegetables at least one or two times in day.

In the questions under hygienic behaviour most of the government, aided and self-financing college students had the habit of washing the hands in running water or tap water before eating. Few governments, aided and self-financing colleges didn't have safe and hygienic toilets or latrines. Most of the colleges didn't have toilet or latrines. Sometimes government, aided and self-financing college students washed the hands after using toilet or latrine not always.

In the question violence related behaviour few governments, aided and self-financing college students fought in the past one-year, maximum students didn't fight. To earn good name from the department faculties, students try to put each other down in front of the teacher, which can lead to a verbal and eventually physical fight. Engineering college students have become pretty aggressive and get provoked easily nowadays. Students have begun to demand respect, attention and authority from fellow students, which can often result in clash of ego and interests. When student surrounded with bad company, with people who are aggressive and rude, also behaves like them, which will provoke physical fight with others.

Sikazwe et al., (2004) found that bad friendship, alcohol and drug abuse, wrong utilization of leisure time, lack of monitoring and guidance by the parents or guardians, illegal sexual behaviour leads to physical fight with others. Engineering college students may be addressed on the violent behaviour and policies can be drawn on teaching of values by including in the curriculum.

In the questions under mental health most of the government, aided and self-financing college students rarely felt loneliness in the past 30 days and they didn't consider suicide attempt. Most of the government, aided and self-financing college students had three or more number of friends.

In the questions under tobacco use most of the government, aided and self-financing college students never smoked a cigarette and used tobacco items. Few students those who were smoking since the parents or guardians were smoking tried to stop smoking. Most of the parents or guardians never smoked.

In the questions under alcohol and other drug use most of the government, aided and self-financing college students never had a drink of alcohol except few. Most of the government, aided and self-financing college students never troubled the family, friends and missed the college. Few governments, aided and self-financing college students started drinking few pegs of alcohol after 16 years with friends and family. Most of the parents or guardians never drank. Most of the government, aided and self-financing college students never used drugs such as marijuana, ganja. Few governments, aided and self-financing college students used drugs after the age of 16 years and shared the syringes to inject drug.

In the questions under HIV/AIDS related knowledge a greater number of governments, aided and self-financing college students understood the

mode of transmission of HIV/AIDS. Students must be taught about the mode of transmission of HIV/AID and sexually transmitted diseases. The students exposed to such diseases will bring negative effect on their education. To avoid such behaviour among college students they must be taught about the values, moral of life. Students must be addressed on the spiritual wellbeing and Indian traditional values of being disciplined citizen of this country.

Discussion on various category engineering college students attitude toward physical activity

A greater number of governments, aided and self-financing engineering college students never stayed physically active for at least 60 minutes in a day. Only few students were physically active. A greater number of governments, aided and self-financing college students spent one to two hours daily on sitting activities like watching television, etc. Most of the government, aided and self-financing college students never ride bicycle to college in the past one week. Most of the parents or guardian never understand the problems and worries of their children and didn't know what they are doing in the free time in the past 30 days. More government, aided and self-financing college students never played team games in the past 12 months. Most of the government, aided and self-financing colleges taught the benefits of physical activity in the classes. Few governments, aided and self-financing college students performed stretching and weight training in the last one week. The results revealed that few governments, aided and self-financing college students were physically active. Maximum government, aided and self-financing college students never bother about their health. Attitude towards the physical activity was not healthy.

DISCUSSION ON HYPOTHESES

1. First hypotheses stated that there would be no significant association between urban and rural engineering students of Kerala on their health risk behaviour. The obtained chi square value was higher ($p>0.05$) than the required table value at 0.05 level of significance except few responses. There was significant association between urban and rural engineering college students on dietary, violence related behaviour and tobacco use, except hygienic behaviour, mental health, alcohol and other drug use, HIV/AIDS related knowledge. Hence, the first hypothesis on health risk behaviour of urban and rural engineering college student was partially accepted.

2. Second hypothesis state that there would be no significant association between urban and rural engineering students of Kerala on their attitude toward physical activity. The obtained chi square value was higher ($p>0.05$) than the required table value at 0.05 level of significance. There was significant association between urban and rural engineering college students on attitude towards physical activity. Hence, the second hypothesis was rejected at 0. 05 level of significance.

3. Third hypothesis stated that there would be no significant association between male and female engineering students of Kerala on their health risk behaviour. The obtained Chi-square value was higher ($p>0.05$) than the required table value at 0.05 level of significance except few responses. There was significant association between male and female engineering college students on hygienic, violence related behaviour, tobacco use, mental health, alcohol and other drug use, HIV/AIDS related knowledge except dietary behaviour, Hence, the

third hypothesis on health risk behaviour of male and female engineering college student was partially accepted.

4. Fourth hypothesis state that there would be no significant association between male and female engineering students of Kerala on their attitude toward physical activity. The obtained chi square value was higher ($p>0.05$) than the required table value at 0.05 level of significance. There was significant association between male and female engineering college students on attitude towards physical activity. Hence, the fourth hypothesis was rejected at 0. 05 level of significance.

5. Fifth hypothesis stated that there would be no significant association among various category engineering college students of Kerala on their health risk behaviour. The obtained chi square value was higher ($p>0.05$) than the required table value at 0.05 level of significance except few responses. There was significant association between government, aided and self-financing engineering college students on violence related behaviour and tobacco use except dietary, hygienic behaviour, mental health, alcohol and other drug use, HIV/AIDS related knowledge. Hence, the fifth hypothesis on health risk behaviour of government, aided and self-financing engineering college students engineering college student was partially accepted.

6. Sixth hypothesis stated that there would be no significant association among various category engineering college students of Kerala on their physical activity. The obtained chi square value was higher ($p>0.05$) than the required table value at 0.05 level of significance except yearly weight training and stretching response. There was significant association between government, aided and self-financing engineering college students on attitude towards physical activity in few responses. Hence, the sixth hypothesis was partially accepted at 0. 05 level of significance.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The purpose of the study was to assess the Health-risk behaviour and attitude towards physical activity among engineering college students in Kerala.

The sub purpose of the study was to construct and standardize a tool for assessing the Health-risk behaviour and attitude towards physical activity for engineering college students in Kerala.

To fulfil the purpose of the study, 1000 boys and 1000 girls of age group 17 to 25 years were randomly selected from 28 different category of engineering colleges in Kerala, such as, government, aided, self-financing belonging to rural and urban areas as per the available strength of the students from each college.

To access the Health-risk behaviour among engineering students in Kerala the following 8 dimensions were measured, they were dietary behaviour and overweight, hygienic behaviour, violence related behaviour, mental health, tobacco use, alcohol and other drug use, HIV/AIDS related knowledge and attitude towards physical activity. In order to access the various dimensions of Health-risk behaviour and Attitude towards Physical activity, standardised tool was developed by following all procedure for construction and standardisation of a questionnaire, there by 46 items were extracted in the final blue print of the questionnaire. The validity of the questionnaire is 0.76 and reliability of the questionnaire is 0.82.

Various descriptive profiles like mean, median, mode, standard deviation, variance, skewness, standard error of skewness, kurtosis, standard error of Kurtosis, range minimum, maximum 25^{th} percentile, 50^{th} percentile 75^{th} percentile of two genders (male and female), descriptive profiles for three college types (Government, aided and self financing), descriptive profiles for two environments (urban and rural) and descriptive profiles for three department types (Electronics, Mechanical and Computer Science) were statistically analyzed on all questions including demographic factors like age, gender, year which they are studying, category of colleges, and height and weight. The chi-square test for independence, also called as Pearson's chi-square test or the chi-square test of association, was done to discover if there is relationship between two categorical variables for which the level of significance was at 0.05.

Conclusions

Within the limitations of the research study, the following conclusions were drawn,

1. It was concluded that 4.7% of rural and urban engineering college students were found to have underweight with the BMI ranged below 18.5 kg/m^2. And 11.5% of urban and rural engineering college students were found to have overweight with the BMI ranged above 24.9 kg/m^2.

2. It was concluded that 3.95% of rural and 1.9% of urban, 2.9% of male and 3.05% of female and various category engineering college students most of the time felt hungry because of not having enough food at home during the past 30 days.

3. It was concluded that 15.4% of rural and 15.8% of urban, 11.3% of male and 5.1% of female and 16.25% of various category engineering college students rarely ate fruits in a day.

4. It was concluded that 18.6% of rural and urban, male and female and various category engineering college students ate vegetables one or two times per day.

5. It was concluded that overall rural and urban, male and female and various category engineering college students had healthy dietary behavior.

6. It was concluded that 33% of rural and urban, male and female and various category engineering college students never washed the hands with running or tap water before eating during the past seven days.

7. It was concluded that 50% of various category engineering college students didn't have safe and hygienic toilets or latrines for female at the college.

8. It was concluded that more than 50% of rural and urban engineering college toilets and latrines weren't safe and hygienic.

9. It was concluded that 65% of rural and urban, male and female and various category engineering college students washed the hands sometimes after using toilet or latrine.

10. It was concluded that 49% of rural and urban, male and female and various category engineering college student's hygienic behavior like washing hands before eating and after using toilets was poor.

11. It was concluded that 40% of rural and urban, male and female and various category engineering college students never fought in the past one year. Violence related behavior of the engineering college students were minimal in the past one year.

12. It was concluded that 75% of rural and urban, male and female and various category engineering college students felt loneliness, 10% of students seriously consider attempting suicide during the past 12 months, 65% of students had more than three friends. Mental health of the engineering college students were strong enough.

13. It was concluded that 20% of rural and urban, male and female and various category engineering college students smoked cigarette. Tobacco use was not familiar among engineering college student.

14. It was concluded that 40% of rural and urban, male and female and various category engineering college student parents were smoked.

15. It was concluded that 82% of rural and urban, male and female and various category engineering college students never consumed alcohol or any other form of drugs.

16. It was concluded that 35% of engineering college student father or male guardian consumed alcohol.

17. It was concluded that 18% of rural and urban, male and female and various category engineering college students consumed alcohol or any other form of drugs.

18. It was concluded that almost all the rural and urban, male and female and various category engineering college students knew the mode transmission and infection of HIV/AIDS.

19. It was concluded that rural and urban, male and female and various category engineering college students didn't have health risk behavior except very minimal percentage of students.

20. It was concluded that 53% of rural and urban, male and female and various category engineering college students were not physically active at least for 60 minutes per day.

21. It was concluded that 45% of rural and urban, male and female and various category engineering college students never 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.

22. It was concluded that 82% of rural and urban, male and female and various category engineering college students never walked or ride a bicycle to and from college in the past one week.

23. It was concluded that more than 50% of rural and urban, male and female and various category engineering college students parents didn't know what their children are doing during the free hours and never understand their problems.

24. It was concluded that 59.6% of rural and urban, male and female and various category engineering college students never participated in any sport team in the past 12 months.

25. It was concluded that 25% of rural and urban, male and female and various category engineering college students were never taught about training and stretching in the last one week but 44% of students never did any form of training or exercise.

26. It was concluded that attitude towards physical activity of rural and urban, male and female and various category engineering college students were very poor.

Recommendations

1. The data obtained regarding health-risk behaviour and attitude towards physical activity will help to know the health status. It can be used for better co-ordination of policies concerning Physical Education, sport, health, recreation and health education programmes at the college level.

2. The results will alert besides Physical Education teachers, the students themselves, parents, colleges, sport clubs, etc., about their several and mutual responsibilities in maintaining a reasonable standard of health and physical fitness among those pupil.

3. The Health-risk behavior and attitude towards physical activity questionnaire developed in the research study will be an excellent tool for educationists, social and health workers, so as to gather data regarding health-risk behaviours and attitude towards physical activity among college students.

4. The developed tool can also be used nationwide by health and education officials to improve and modify nationwide, state-wise policies and programs to design and to reduce risks associated with leading causes of mortality and morbidity.

5. The findings of the study will enlighten the authorities of engineering colleges to implement new educational policies regarding physical activity in the engineering curriculum.

6. The results of the study will help the authorities to identify the mental health status of the students and will create the way to provide remedy.

7. The results of the study will help the college to implement health programs to reduce alcohol and drug use by implementing policies to

prevent alcohol and drug use among students, faculty, staff, and others connected to them.

8. The findings of the study will provide additional knowledge to create awareness programs and education to prevent tobacco by offering tobacco cessation programs for faculty, staff, and students will be more effective in creating a tobacco free campus.

9. The findings of the study will give interest and knowledge to organize various awareness program to prevent the infection of HIV/AIDS.

10. A surveillance system should be maintained and should be continued to help monitor and to ensure the effectiveness of such systems and also other public and college health programs for youth.

11. The students should be taught to realise their rights for a healthy and safe learning environment in colleges.

12. Institutions should help to improve student and youngsters health by providing and maintaining sanitary conditions, such as hand washing, other sanitation facilities and safe drinking water .

13. College health programmes should be implemented in colleges, which will help to reduce violence and unintentional injuries by establishing social and healthy environment that promote safety, prevent injuries and violence.

14. Programmes should be charted and implemented to identify the students with emotional, social, environmental and physical problems.

15. Community based health programs should be arranged for the students by including social services, by making a rapport between students and

society, which gives them the chances to identify problems faced by society and thereafter its prevention.

16. The help of voluntary organisations should be detected to provide training and support for peer- facilitated prevention activities, usually related to alcohol consumption, drug use and sexual responsibility.

17. Daily physical activity for engineering college students should be made compulsory.

18. College authorities should address the health-risk behaviours among their students, teachers and parents by increasing access to health-related information, and policies implemented by the government.

19. . Further, the type of study should be carried out periodically in order to identify how results change over a period of time.

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