A Study On Knowledge, Awareness and Attitude of AIDS Among Students In Bangladesh

A Dissertation submitted to the Department of Pharmacy, East West University, Bangladesh, in partial fulfillment of the requirements for the Degree of Bachelor of Pharmacy

Submitted by

Nasrin Sultana Nipa

ID: 2013-1-70-029

Department of Pharmacy

East West University

Department of Pharmacy

East West University

Declaration by the Research Candidate

I, Nasrin Sultana Nipa, ID: 2013-1-70-029, hereby declare that the dissertation entitled **"A Study on knowledge, awareness and attitude of AIDS among students in Bangladesh"** submitted by me to the Department of Pharmacy, East West University in partial fulfillment of the requirement for the award of the degree Bachelor of Pharmacy is a trustworthy record of original and genuine research work carried out by me.

Nasrin Sultana Nipa
ID: 2013-1-70-029
Department of Pharmacy
East West University

Certificate by the Supervisor

This is to that the dissertation entitled **"A Study on knowledge, awareness and attitude of AIDS among students in Bangladesh"** submitted to the Department of Pharmacy, East West University for the partial fulfillment of the requirement for the award of the degree Bachelor of Pharmacy is a trustworthy record of original and genuine research work carried out by Nasrin Sultana Nipa, ID: 2013-1-70-029 under my supervision and guidance.

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Nigar Sultana Tithi

Senior Lecturer and Supervisor

Department of Pharmacy

East West University

Certificate by the Chairperson

This is to certify that the dissertation entitled **"A Study on knowledge, awareness and attitude of AIDS among students"** submitted to the Department of Pharmacy, East West University for the partial fulfillment of the requirement for the award of the degree Bachelor of Pharmacy is a trustworthy record of original and genuine research work carried out by Nasrin Sultana Nipa, ID: 2013-1-70-029.

Dr. Shamsun Nahar Khan

Associate Professor & Chairperson

Department of Pharmacy

East West University

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Dedication

My beloved parents; **MD. Nur Uddin Molla and Nargis Akter** and also **my brothers and sisters.**

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List of Abbreviation

HIV- Human Immunodeficiency Virus

AIDS - Acquired immunodeficiency syndrome

RNA - Ribonucleic acid

ART- Antiretroviral Therapy

CD4 - Cluster of differentiation 4

ELISA - Enzyme-linked immunosorbent assay

NRTIs - Nucleoside/nucleotide reverse transcriptase inhibitors

NNRTIs - Non-nucleoside reverse transcriptase inhibitors

CYPs - Cytochromes P450

WHO - World Health Organization

SIV - Simian immunodeficiency virus

NIH- National Institutes of Health

NCBI- National Center for Biotechnology Information

UNAIDS - United Nations Programme on HIV/AIDS

HSRC - Human Sciences Research Council

Abstract

This study was aimed to evaluate student's knowledge, awareness and attitude about HIV/ AIDS. It was a survey based study where 380 students studying in class Eight- Twelve from different areas of Dhaka, Munshigonj and Brahmanbaria were interviewed with a structured questionnaire. Majority of the respondent were female. From the study about 100% respondents heard about HIV/AIDS. In this study, 88.16% of the respondent knew that HIV/AIDS can transmit through sharing infected needle or injection. They have knowledge about blood transfusion (77.1%), unprotected sex (75%) is responsible to have this disease. But they had misconception about something like eating or drinking from same glass or plate (38.42%), mosquito bite (31.84%), wearing same dress (35.26%) can be mode of transmission of HIV/AIDS. Among 80.26% respondent told that avoiding needle share, condom use (46.84%), remaining faithful to single partner (46.84%) can be mode of prevention for AIDS. From the study 43.17% participants mentioned that they would like to take care patient in home or community, 39.47% showed positive attitude to the thing that they would like to continue relation with the patient. From the study it can be concluded that it is important to increase the knowledge, awareness level of AIDS so that misconception don't occur among the people.

Key Words: HIV, AIDS, knowledge, Mode of transmission, Misconception, Attitude.

CHAPTER 1

INTRODUCTION

1.1 Human Immunodeficiency Virus (HIV)

HIV stands for human immunodeficiency virus. If it is not treated, then it can lead to acquired immunodeficiency syndrome or AIDS. HIV attacks the body's immune system, specifically the CD4 cells (T cells). CD4 cells help the immune system fight off infections. If HIV remains untreated, then it reduces the number of CD4 cells (T cells) in the body. As a result it is making the person more likely to get other infections or infection-related cancers. HIV can destroy so many of these cells that the body can't fight off infections and disease. These opportunistic infections or cancers take advantage of a very weak immune system and signal that the person has AIDS which is the last stage of HIV infection. The human body can't get rid of HIV completely, even with treatment. (Cdc.gov, 2016)

HIV virus belongs to a class of viruses named retroviruses. Retroviruses are RNA (ribonucleic acid) viruses. In order to replicate, they must make a DNA copy of their RNA. It is the DNA genes that allow the virus to replicate. This virus can replicate only inside cells. HIV virus and other retroviruses use an enzyme called reverse transcriptase to convert their RNA into DNA inside the cells. The DNA can then be incorporated into the host cell's genes. (Clinaero, 2016)

1.1.1 HIV structure

The HIV virus is spherical in shape and has a diameter of 1/10,000 of a millimeter. The HIV virus may enter and exit cells through special areas of the cell membrane which is known as "lipid rafts." These rafts are high in cholesterol and glycolipids and can provide a new target for blocking HIV. The genome of retroviruses is made of RNA (ribonucleic acid). Each virus has two single chains of RNA.

For replication, the virus needs a host cell and the RNA must be transcribed into DNA (deoxyribonucleic acid). This is done with the help of reverse transcriptase. (Anon, 2016)

HIV infects mainly the CD4+ lymphocytes (T cells), but also to a lesser degree monocytes, macrophages, and dendritic cells (these cells are also CD4+ cells). Once infected, the cell turns into an HIV-replicating cell and loses its function in the human immune system. (Slideplayer.com, 2016)

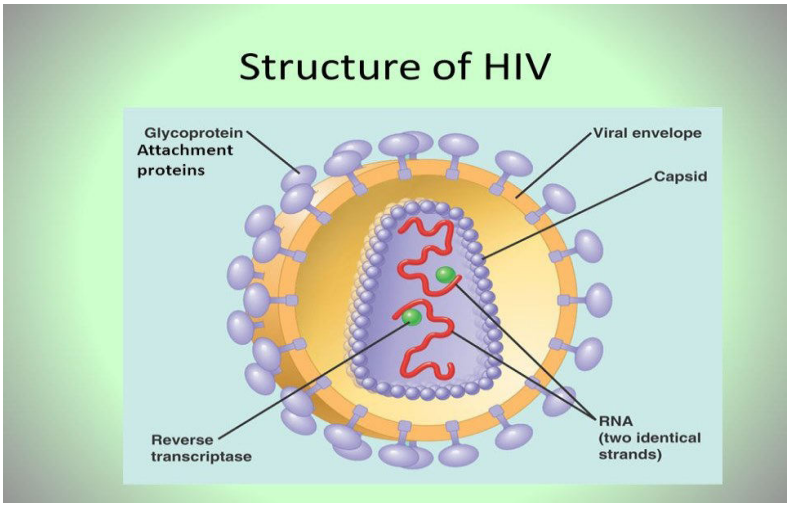


Fig1.1: HIV structure (Slideplayer.com, 2016)

1.1.2 The basic structure of HIV is as follows

1.1.2.1 Viral envelope

The outer coat of the virus consists of two layers of lipids, different proteins are surrounded in the viral envelope. Thus it is forming "spikes" consisting of the outer glycoprotein (gp) 120 and the trans-membrane gp41. These gp120 is desired to attach to the host cell and gp41 is critical for the cell fusion process.

1.1.2.2 HIV matrix proteins

It is consisting of p17 protein which is lie between the envelope and core.

1.1.2.3 Viral core

It contains the viral capsule protein p24 which surrounds two single strands of HIV RNA and the enzymes needed for HIV replication. Those enzymes are reverse transcriptase, protease, ribonuclease, and integrase. There are three virus genes namely gag, pol and env that contain the information needed to make structural proteins for new virus particles. (Anon, 2016)

1.1.3 Life cycle of HIV

When HIV binds to a host cell, the viral envelope fuses with the cell membrane and the virus's RNA and enzymes enter the cytoplasm. HIV contains an enzyme called reverse transcriptase which allows the single-stranded RNA of the virus to be copied and double-stranded DNA (dsDNA) to be generated. The enzyme integrase then helps the integration of this viral DNA into the cellular chromosome.

During cell division, provirus (HIV DNA) is replicated along with the chromosome The incorporation of provirus into the host DNA provides the latency that enables the virus to avoid host responses so effectively. (Learner.org, 2016)

When the provirus is transcribed, production of viral proteins and RNA takes place. Viral proteins are then collected using the host cell's protein-making machinery. The virus's protease enzyme allows for the processing of newly translated polypeptides into the proteins. The virus eventually buds out of the cell. Many viral particles can bud out of a cell over the course of time. (Learner.org, 2016)

The seven stages of the HIV life cycle are:

1) Binding,

2) Fusion,

3) Reverse transcription,

4) Integration,

5) Replication,

6) Assembly,

7) Budding. (AIDSinfo, 2016)

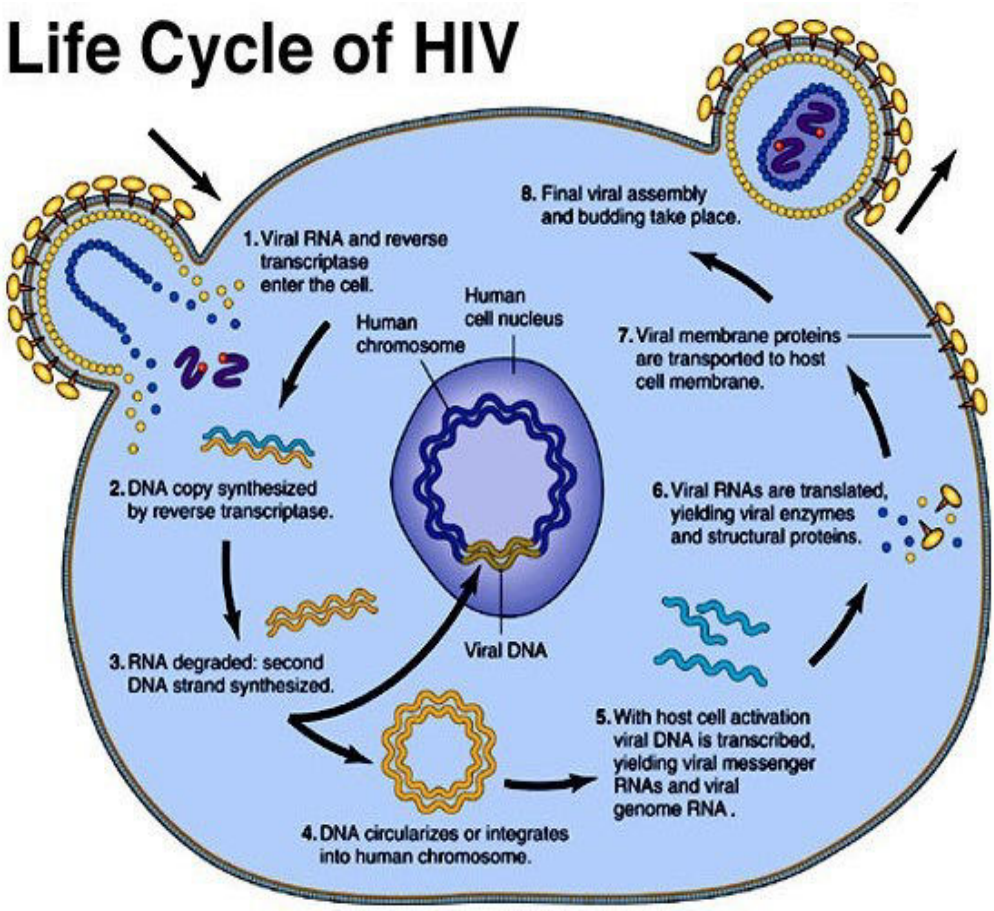


Fig 1.2: Life cycle of HIV (Mhhe.com, 2016)

1.2 Source of HIV infection

In human, scientists identified a type of chimpanzee in Central Africa as the source of HIV infection. They believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus, or SIV) was transmitted to humans and mutated into HIV. When humans hunted these chimpanzees for meat and came into contact with their infected blood, this thing was happened. Studies show that HIV can have jumped from apes to humans as far back as the late 1800s. The virus slowly spread across Africa and later into other parts of the world over decades. It is known that the virus has existed in the United States since at least the mid to late 1970s. (Cdc.gov, 2016)

1.3 Stages of HIV

There are basically three stages of HIV. When people get HIV and don't receive treatment, they will typically progress through these steps. HIV treatment with medicine is known as antiretroviral therapy (ART). It helps people at all stages of the disease if taken the right

way, every day. Treatment can slow or prevent progression from one stage to the next. It may also radically reduce the chance of transmitting HIV to someone else.

1.3.1 Stage 1: Acute HIV infection

Within 2 to 4 weeks after infection with HIV, people can experience a flu-like illness, which can last for a few weeks. This is the body's natural response to infection. When people have acute HIV infection, they have a large amount of virus in their blood and are very infectious. People with acute infection are often unaware that they're infected because they may not feel sick right away or at all.

A fourth-generation antibody/antigen test or a nucleic acid (NAT) test is necessary to know whether someone has acute infection. If one think he/ she has been exposed to HIV through sex or drug use and has flu-like symptoms, then medical care is necessary and a test to diagnose acute infection is mandatory. (Cdc.gov, 2016)

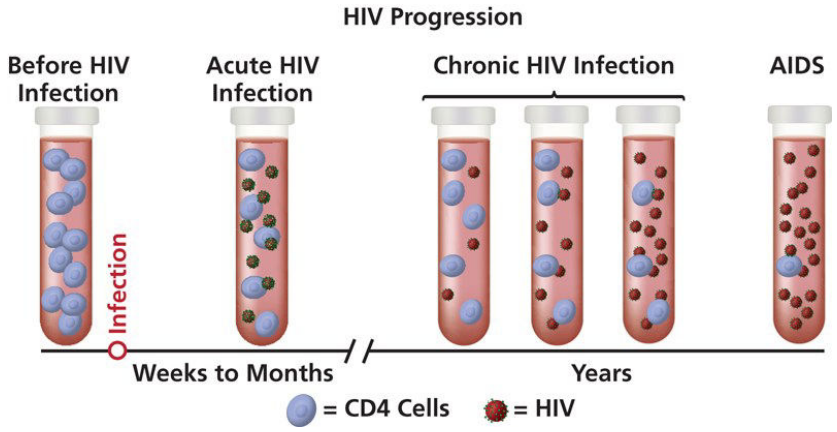


Fig 1.3: Different stages of HIV (Wiercińska-Drapało et al., 2007)

1.3.2 Stage 2: Clinical latency (HIV inactivity or dormancy)

Sometimes this period is called asymptomatic HIV infection or chronic HIV infection. During this phase, HIV is still active but reproduces at very low levels. People may not have any symptoms or get sick during this time.

Those people who aren't taking medicine to treat HIV, this period can last a decade or longer, but some may progress through this phase faster. This stage may be for several decades for who are taking medicine to treat HIV (ART) the right way, every day. It's important to remember that people can still transmit HIV to others during this phase. People

who are on ART and stay virally suppressed (having a very low level of virus in their blood) are much less likely to transmit HIV than those who are not virally suppressed.

At the end of this phase, a person's viral load starts to go up and the CD4 cell count begins to go down. Thus the person may begin to have symptoms as the virus levels increase in the body and the person moves into Stage 3. (Cdc.gov, 2016)

1.3.3 Stage 3: Acquired immunodeficiency syndrome (AIDS)

AIDS is the most dangerous phase of HIV infection. AIDS infected people have such badly damaged immune systems that they get an increasing number of severe illnesses, called opportunistic illnesses.

People with AIDS typically survive about 3 years without treatment. There are some common symptoms of AIDS which include chills, fever, sweats, swollen lymph glands, weakness, and weight loss.

People are diagnosed with AIDS when their CD4 cell count drops below 200 cells/mm or if they develop certain opportunistic illnesses. During this phase, viral load can be high and very infectious. (Cdc.gov, 2016)

1.4 Global AIDS update

The southern part, Sub-Saharan Africa has the greatest number of people who are infected. The World Health Organization and the United Nations' UNAIDS office estimate that more than a third of adults are infected with HIV in some areas of Africa. The number of people in Eastern Europe and Asia who have HIV is growing quickly.

There are two main types of the virus: HIV-1 and HIV-2. HIV-2 is most commonly found in West Africa. HIV tests usually look for both kinds.

UNAIDS report highlights both the huge gains already made and what can be achieved in the coming years through an advance approach. The last two years the number of people living with HIV on antiretroviral therapy has increased by about a third. It is reaching 17.0 million people—2 million more than the 15 million by 2015 target set by the United Nations General Assembly in 2011. This means 46% people need ART, with additional 2 million people starting treatment during last year. (World Health Organization, 2016)

HIV becomes a major global public health issue. An estimated value of 2015, about 36.7 million people were living with HIV, here also included 1.8 million children – a global HIV

prevalence of 0.8%. In the same year, 1.1 million people died of AIDS-related illnesses. The huge majority of this number live in low- and middle- income countries. In 2015, globally the vast majority of them (about 19 million) live in east and southern Africa which saw 46% of new HIV infections. Around 40% of all people living with HIV do not know that they have the virus. (Avert.org, 2016)

In 1981, the first documented AIDS case was found. Since then, about 35 million people have died from illnesses related to the disease. Millions of children have been orphaned because of it.

Now, combination treatments have turned AIDS into a long-term disease that people can manage. At the end of 2015, about 37 million people were living with HIV including almost 2 million kids. (Avert.org, 2016)

1.4.1 New headline statistics for 2015:

• 36.7 million people living with HIV

• 2.1 million New HIV infections

• 1.1 million AIDS-related deaths

• 17 million people on antiretroviral treatment

Source: UNAIDS (2016) 'Global AIDS Update 2016'

1.4.2 HIV Prevalence Rates in South Africa

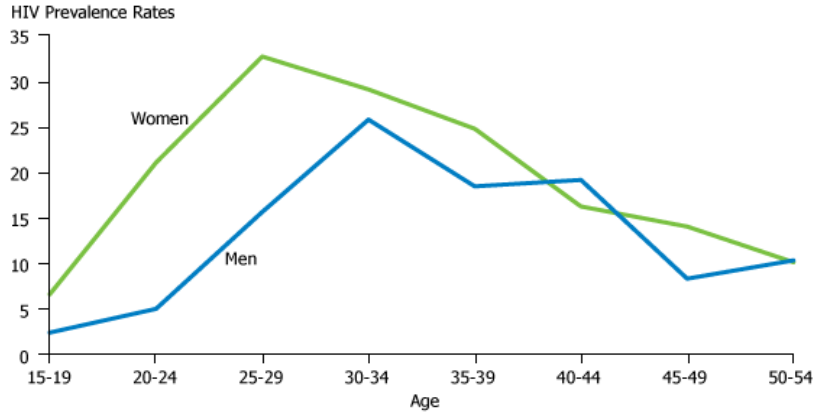


Fig 1.4: HIV Prevalence Rates

Source: Human Sciences Research Council, South African National HIV Prevalence, Incidence, Behaviour and Communication Survey (Cape Town, South Africa: HSRC, 2008). (Prb.org, 2016)

Worldwide approximately, 68% people infected with HIV live in sub-Saharan Africa, where the virus excessively affects women. Exposure to violence for women varies by country and region. Surveys consistently show that it peaks between ages 20 and 30 years and then starts to decline. (Prb.org, 2016)

1.4.3 HIV in Bangladesh perspective

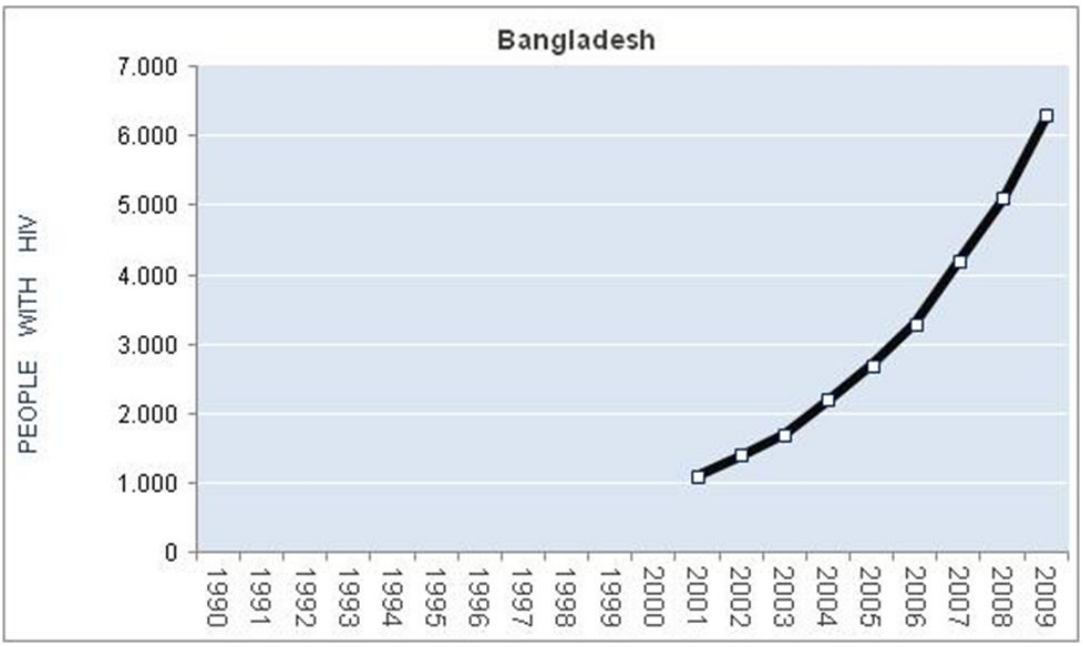


Fig 1.5: Number of people with HIV in Bangladesh (Lifemanagementonline.com, 2016)

HIV and AIDS estimates Bangladesh (2015)

Number of people living with HIV: 9600 [8400 - 11 000]

Adults aged 15 to 49 prevalence rate <0.1% [<0.1% - <0.1%]

Adults aged 15 and over living with HIV: 9300 [8100 - 11 000]

Women aged 15 and over living with HIV: 3200 [2800 - 3600]

Children aged 0 to 14 living with HIV <500 [<500 - <500]

Deaths due to AIDS <1000 [<1000 - <1000]

Orphans due to AIDS aged 0 to 175: 100 [4100 - 6200] (Unaids.org, 2016)

1.5 Mode of transmission of AIDS

The spread of HIV from person to person is called HIV transmission. In the United States, HIV is spread mainly by having sex or sharing drug injection equipment with someone who is infected with HIV. There are several ways by which this can happen:

HIV occurs through contact with certain body fluids from a person infected with HIV. These body fluids include:

- Blood
- Semen
- Pre-seminal fluid
- Vaginal fluids
- Rectal fluids
- Breast milk (AIDS info, 2016)

1.5.1 Unprotected Sex

During unprotected sex, HIV that remains in the bodily fluids of an infected person (blood, semen, vaginal fluid, pre-cum or anal mucus) can pass into the body of their sexual partner. This can happen through the mucous membranes of the penis, vagina, rectum and sometimes the mouth and throat. Sexual contact with a HIV infected person without using condom is responsible for spreading AIDS.

If someone is living with HIV, they are more likely to pass it on to others. It happens in the first few months after infection. At that time, there are high levels of the virus are remain in body fluids at this point. (Avert.org, 2016)

1.5.2 Mother-to-fetus

Mother-to-fetus transmission is the most common way that children become infected with HIV.

The spread of HIV from an HIV-infected woman to her child during pregnancy, childbirth (also called labor and delivery). Mother-to-child transmission of HIV is also called perinatal transmission of HIV. (AIDS info, 2016)

1.5.3 Sharing needles, syringes, or other injection equipment:

Sharing needles, syringes, or other injection equipment with someone who is infected. This virus can live in a used needle up to 42 days depending on temperature and other factors.

Some blood goes into the needle and syringe during an injection. If someone living with HIV has used a needle and syringe, can contain the virus in it after the injection. If one uses the same equipment without sterilizing it, then can inject the infected blood directly into bloodstream. (Avert.org, 2016)

1.5.4 Blood transfusion

Transmission can occur through donated blood or blood clotting factors. If a HIV-positive person donates blood products, such as an organ or tissue, the person who receives the blood product is to be expected to develop an HIV infection too. However, this is now very rare in countries where blood is screened for HIV antibodies, including in the United States.

(Avert.org, 2016)

1.5.6 Breast feeding

Through breastfeeding, HIV can be transmitted from an HIV-positive mother to her baby. This virus can be detected in breast milk. Three HIV chambers coexist in breast milk: RNA (cell-free viral particles), pro viral DNA (cell-associated virus integrated in latent T-cells) and intracellular RNA (cell-associated virus in activated producing T-cells). The individual role of each in HIV transmission is poorly understood. (Aidsmap.com, 2016)

1.5.7 Medical or dental procedure

HIV can transmit through dental surgery and other deadly infections. This is becoming a troublesome trend among dentists. Cross-infection is a major concern among dentists.

An infected patient can come to the dentist and further it can transmit from the dentists to other patients in case of an accidental needle stick injury. (Mail Online, 2016)

Transmission in health care settings is an important fact. Healthcare professionals have been infected with HIV in the workplace, usually after being stuck with needles or sharp objects containing HIV-infected blood. (Cdc.gov, 2016)

1.5.8 Razor sharing

It is preferable to avoid sharing personal items like razor, toothbrush. If the first user's blood remains there as a result of nicks, cuts and bleeding gums, then there is a risk to tranmit the virus in both users. Sharing personal items generally does not present an effective means for HIV transmission. The short life of HIV outside the body reduces the likelihood of transmission. (Aidsmap.com, 2016)

1.6 Misconception

Some people has misconception about HIV/AIDS. They think that it can transmit by other way like shaking hands, sharing toilets, sharing dishes, or closed-mouth or social kissing, swimming pool, mosquito bite etc.

HIV isn't transmitted by:

- Hugging, shaking hands, sharing toilets, sharing dishes, or closed-mouth or social kissing with someone who is HIV-positive.
- Through saliva, tears, or sweat that is not mixed with the blood of an HIV-positive person.
- By mosquitoes, ticks or other blood-sucking insects.
- Through the air. (Cdc.gov, 2016)

HIV can't be transmitted through sharing cutlery, plates or cups because HIV cannot be transmitted in saliva. Personal items such as razors sharing generally can be an effective means for HIV transmission. It is an extremely weak virus and it is die once exposed to the air. It cannot live outside the body. (Helpline.aidsvancouver.org, 2016)

1.7 Symptoms of AIDS

In early stages of AIDS, some people may experience a flu-like illness within 2-4 weeks after HIV infection. But some people may not feel sick during this stage.

Flu-like symptoms can include:

- Fever

- Chills
- Rash
- Night sweats
- Muscle aches
- Sore throat
- Fatigue
- Swollen lymph nodes
- Mouth ulcers

These symptoms can last from a few days to several weeks. During this time, HIV infection may not show up on an HIV test but people who have it are highly infectious and can spread the infection to others. (Connolly *et al*., 1989)

Most people infected with HIV may experience a short, flu-like illness that occurs two to six weeks after infection. After this, HIV often causes no symptoms for several years.

The flu-like illness that often occurs after few weeks of HIV infection is known as seroconversion illness. About 80% people who are infected with HIV can experience this illness. If people have several of these symptoms and they think that they have been at risk of HIV infection within the past few weeks, they should get an HIV test. (Nhs.uk, 2016)

HIV will not cause any further symptoms for many years after the initial symptoms disappear. During this time, it is known as asymptomatic HIV infection. The virus continues to be active and causes progressive damage to immune system. This process can take about 10 years. Once the immune system becomes severely damaged symptoms can include:

- weight loss
- chronic diarrhea
- night sweats
- skin problems
- recurrent infections
- serious life-threatening illnesses

Earlier diagnosis and treatment of HIV can prevent these problems. (Nhs.uk, 2016)

1.8 Prevention of AIDS

There's no vaccine available to prevent HIV infection and no cure for AIDS. But it's possible to protect from infection. That means education about HIV and avoid any behavior that allows HIV-infected fluids — blood, semen, vaginal secretions and breast milk — into the body.

To prevent the spread of HIV some measures can be done:

- **A new condom should be used every time during sex**

If the HIV status of one's partner is not known, then a new condom should be used every time during anal or vaginal sex. Women can use a female condom.

Water-based lubricants should be used. Oil-based lubricants can weaken condoms and cause them to break.

- **Truvada should be considered**

Truvada is used as an HIV treatment along with other medications. The combination drug emtricitabine-tenofovir (Truvada) should be used which can reduce the risk of sexually transmitted HIV infection among those who are at high risk.

According to prescription, truvada must be taken daily. Truvada should only be used along with other prevention strategies, such as condom. It doesn't protect against other sexually transmitted infections. It can't provide complete protection against HIV transmission. (Mayoclinic.org, 2016)

- **Sexual partners should be informed if one has HIV**

It's important to tell anyone with whom one had sex that he/she is HIV-positive. One's partner need to be tested and to receive medical care if they have the virus. They also need to know their HIV status so that they don't infect others.

- **A clean needle should be used**

If needle is used to inject drugs, then it should be sterile and sharing it with others is avoidable.

- **Pregnant women should get medical care right away**

If mother is HIV-positive, she may pass the infection to her baby. But if she receive treatment during pregnancy, she can cut her baby's risk significantly.

- **Male circumcision should be considered**

There's evidence that male circumcision can help reduce a man's risk of acquiring HIV.

(Mayoclinic.org, 2016)

1.9 Diagnosis of HIV

If people have been exposed to HIV, their immune system will make antibodies and try to destroy the virus. Doctors use tests to find these antibodies in urine, saliva, or blood.

If urine or saliva test shows that they are infected with HIV, then people will have a blood test to confirm the results.

Most doctors use two blood test named the ELISA and the Western blot.

If the ELISA is positive, it means that HIV antibodies are found, then a Western blot or other test will be done to be sure.

HIV antibodies usually show up in the blood within 3 months but can take as long as 6 months. If people think they have been exposed to HIV but their test negative for it:

- Test should be done again. Tests at 6, 12, and 24 weeks can be done to be sure that they are not infected.
- Meanwhile, necessary steps should be done to prevent the spread of the virus in case they have it. (Mayoclinic.org, 2016)

1.10 Treatment of HIV:

The regular treatment for HIV is a combination of medicines called antiretroviral therapy or ART. These medicines slow the rate of the virus multiplication.

These medicines can reduce the amount of virus in the body and help to stay healthy.

Medical experts recommend that people should begin treatment for HIV as soon as they know that they are infected. (Connolly *et al.,* 1989)

To monitor the HIV infection and its effect on immune system, doctor will regularly do two tests:

- Viral load, which shows the amount of virus in the blood.
- CD4+ cell count, which shows how well immune system is working.

(Aids.gov, 2016)

1.10.1 Viral load

It refers to the amount of HIV in a sample of blood. When viral load is high, then people have more HIV in their body and that means their immune system is not fighting with HIV well.

It is important for many reasons. It is a lab test that measures the number of HIV virus particles in a milliliter of the blood. These particles are called "copies."

A viral load test helps provide information about one's health status and how well ART is controlling the virus.

The goal of ART is to move viral load down to undetectable levels. Generally, viral load will be declared "undetectable" if it is under 40 to 75 copies in a sample blood.

"Undetectable" viral load doesn't mean that the virus is completely gone from body. It is just below what a lab test can find. People still have HIV and need to stay on ART to remain healthy. (Aids.gov, 2016)

1.10.2 CD4 cell count:

CD4 cells are white blood cells that play a vital role in the immune system. These cell count give an indication of the health of immune system against pathogens, infections and illnesses.

Those are sometimes also called T-cells, T-lymphocytes, or helper cells.

CD4 cell count is the amount of the number of blood cells in a cubic millimetre of blood (a very small blood sample). It is not a count of all the CD4 cells in whole body. A higher number indicates a stronger immune system.

- The CD4 cell count of a person between 500 and 1500 means that he/ she does not have HIV.
- People living with HIV who have a CD4 count over 500 are usually in pretty good health.
- People living with HIV are at significant risk of developing serious illnesses who have a CD4 cell count below 200.

If people have HIV and do not take HIV treatment, their CD4 count will fall over time. The lower the CD4 cell count, the greater the damage to the immune system. Thus the greater the risk of illness.

When one takes HIV treatment, CD4 count should gradually increase. (Aidsmap.com, 2016)

1.11 Drugs to treat HIV

1.11.1 Classes of drugs for HIV

Many different types of drugs are used to treat HIV. This decision will depend on viral load, strain as well as the extent and severity of infection.

Most people with HIV need to take more than one drug. To attack HIV from multiple directions reduces the viral load more quickly. It also helps prevent resistance to the drugs being used. (Healthline, 2016)

1.11.2 Multiclass combination drugs

Combination drugs from different groups combine medications. People take these medications once per day. Each person's dosage is different. These drugs include: Atripla, Complera, Stribild, Triumeq.

1.11.3 Nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs)

These drugs work by interrupting the life cycle of HIV as it tries to copy itself.

abacavir (Ziagen), efavirenz (Atripla), lamivudine/zidovudine (Combivir), lamivudine (Epivir) etc. (Healthline, 2016)

1.11.4 Non-nucleoside reverse transcriptase inhibitors (NNRTIs)

These drugs stop the virus from replicating itself in the body. These drugs include:

Rilpivirine (Edurant), etravirine (Intelence), delavirdine, mesylate (Rescriptor), efavirenz (Sustiva)

1.11.5 Protease inhibitors

Protease inhibitors work by binding to protease. HIV needs this protein to replicate in the body.

These drugs include: Tipranavir (Aptivus), indinavir (Crixivan), atazanavir/cobicistat (Evotaz), saquinavir (Invirase) (Healthline, 2016)

1.11.6 Integrase inhibitors

These are the class of drugs that stop the action of integrase. HIV uses this viral enzyme to infect CD4+ T cells.

These drugs include: Raltegravir (Isentress), dolutegravir (Tivicay), elvitegravir (Vitekta)

(Healthline, 2016)

1.11.7 Entry inhibitors (including fusion inhibitors)

These are another class of HIV medications. HIV needs a host T cell so that it can make copies of itself. These drugs block the virus from entering a host T cell. This prevents the virus from replicating itself.

Example: Enfuvirtide (Fuzeon). It comes in an injectable form.

1.11.8 Cytochrome P4503A (CYP3A) inhibitors

CYP3A is an enzyme that protects liver and gastrointestinal (GI) health. HIV can destroy this enzyme and causes problems in liver and GI tract. CYP3A inhibitors protect these enzymes to keep healthy.

Example: Cobicistat (Tybost)

1.11.9 Immune-based therapies

HIV affects immune system these drugs can help boost immunity. Certain immune-based treatments have been successful in some people.

Example: Hydroxychloroquine sulfate (Plaquenil) (Healthline, 2016)

1.12 Side Effects:

Side effects vary from person to person. For some people, they're mild and for others, they get in the way of daily life.

1.12.1 Short-Term Side Effects

- Fatigue
- Diarrhea
- Headache
- Insomnia
- Rashes
- Dry mouth
- Weight loss

1.12.2 Long-Term Side Effects

- **Fat redistribution:**

Body may change the way it makes, uses, and stores fat. This is called lipodystrophy. People might lose fat in your face and legs.

- **Higher cholesterol or triglyceride level:**

These can increase risk for problems such as heart disease. Diet and other lifestyle changes are a first step.

- **Higher blood sugar levels**
- **Loss of bone density**
- **A buildup of a cellular waste product (lactic acidosis):**

It's rare but it can cause a wide range of problems. Such as muscle aches to liver failure. (Healthline, 2016)

HIV/AIDS has arisen as the single most difficult challenge to public health. School children of today are showing to the risk of HIV/AIDS. The study was showed to determine the knowledge among secondary school students concerning HIV/AIDS and provide recommendations for HIV/AIDS knowledge in schools. A cross-sectional study was shown among students of tenth to twelfth standard in the intermediate schools of Lucknow, India, from July to October 2011. A total of 215 students, both boys and girls, were joined in the study. In this study, for majority of the students (85%), the source of information about HIV/AIDS was the television. Regarding knowledge about modes of transmission of HIV/AIDS among girl students, 95.1% of them told that it is through unprotected sex. A total of 75.8% students said that it was transmitted from mother to child. It was observed that the knowledge of the school students was moderately satisfactory for most of the variables like modes of transmission, including mother-to-child transmission of the disease. However, schools should come forward to design awareness campaigns for the benefit of the students. (Gupta *et al.,* 2013)

AIDS is the shortening of "Acquired Immune-Deficiency Syndrome" which is a fatal disease described as modern outbreak, modern curse, devastating disease, deceptive microbiological bomb and biological disaster and so-on. It is a world health problem of extraordinary scale and extreme urgency. AIDS appeared as one of the most important public health issues of the late twentieth and early twenty- first centuries and is now one of the leading causes of global morbidity and mortality. Adolescents and youth need information in order to mark such responsible choices in terms of sexual behavior/relationship. They also need to integrate and personalize this information or knowledge so that they can make healthy choices. Young people learn a great deal from each other and by sharing ideas and experiences amongst themselves. Peer influence is a great motivating factor in the adoption of specific behaviour patterns. Therefore, correct information and values imparted to one group of young people will be passed on to the other young people. The study was carried out from June 2011 to December 2011. It was conducted among 635 students. Around 92.60% of participants had heard of HIV/AIDS, had written correct abbreviation of HIV and AIDS. Nearly 78.90% knew that causative agent of HIV/AIDS as virus, 76.85% of participants gave correct response for HIV/AIDS awareness symbol as red ribbon. 42.83% of participants knew how to prevent HIV/AIDS. 31.34% participants knew that mosquito bite from HIV/AIDS infected person will not transmit HIV virus. 33.39% of participants knew that intravenous drug abuse will spread

HIV virus. 75.43% of participants knew that HIV/AIDS status can be confirmed by blood test. 46.14% of participants who knew that sharing a meal with HIV/AIDS infected person will not transmit HIV virus. Education is currently the only means of preventing the spread of HIV/AIDS. The education which is necessary to protect adolescents from the virus and following disease involves changes at many levels. Individuals and systems have to make changes in their thinking, behaviour, attitudes, beliefs and policies. (Bolla *et al.,* 2013)

Disease prevention may be improved with an enhanced understanding of student–environment interactions. The purposes of the study were to compare HIV/AIDS-related knowledge, attitudes, sexual behaviors, and sources of HIV/STI information and study the association between sources of HIV/STI information and HIV/AIDS-related knowledge, attitudes, and sexual behaviors among Chinese college students in China and the United States. Comparative, correlational analysis of survey data from 608 students in two countries was conducted. Chinese students in the United States scored higher on knowledge questions. More students in the United States received HIV/STI information from the Internet and family members than did students in China. Traditional media and schoolteachers had a stronger association with participants' HIV-related knowledge, age at first intercourse, and number of sexual partners in both samples than did other sources. The survey revealed incomplete knowledge within both groups. Prevention programs should focus on risky misconceptions and should teach about strategic utilization of media.
(Tung *et al.,* 2013)

HIV/AIDS is known as a national priority health issue in Ghana. Consequently, the Ghana AIDS Commission and the National AIDS Control Programme were established, among other things, to improve the knowledge and awareness on the nature, causes, effects and means of managing the spread of HIV/AIDS among populations at risk in Ghana. Through the efforts of these bodies and other investors in health, several awareness creation and sensitization efforts have been directed at teenage girls, a high risk group in Ghana. This study therefore assesses the knowledge and awareness of HIV/AIDS among senior high school girls in their teens in Ghana using a sample of 260 female students of West African Senior High School. The data collected were analyzed and discussed under relevant themes and within the context of the literature. The study revealed that generally, senior high school girls were knowledgeable on the nature, modes of transmission, and prevention of

HIV/AIDS. There were however some students who exhibited limited knowledge on some issues including the spiritual causes and treatment of HIV/AIDS, contacts and associations with infected persons, as well as determination of HIV infection from appearances rather than testing. The study also developed important concerns about the unwillingness of senior high school girls to use condoms as a preventive measure and the need to reorient HIV/AIDS awareness interventions in Ghana. (Appiah-Agyekum *et al.,* 2013)

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) are amongst the most multifaceted health problems in the world. Young people are at high risk of HIV and AIDS infections and are, therefore, in need of targeted prevention. School-based HIV/AIDS health education may be an effective way to prevent the spread of AIDS among adolescents. The study was a school-based intervention conducted in three middle schools and two high schools in Wuhan, China, which included 702 boys and 766 girls, with ages from 11 to 18 years old. The intervention was a one-class education program about HIV/AIDS for participants. HIV/AIDS knowledge, attitude, and high-risk behaviors were considered using an unspecified self-administered questionnaire before and after the education intervention. Misconceptions about basic medical knowledge and non-transmission modes of HIV/AIDS among all the students prevail. Approximately 10% to 40% of students had negative attitudes about HIV/AIDS before the intervention. After the intervention, all of the students had significant improvements in knowledge and attitude about HIV/AIDS ($P<.05$), indicating that educational intervention increased the students' knowledge significantly and changed their attitudes positively. Logistic regression analyses indicated that before the intervention the students' level of knowledge about HIV/AIDS was significantly associated with grade, economic status of the family, and attitudes toward participation in HIV/AIDS health information campaigns. HIV/AIDS education programs were received by secondary students and positively influenced HIV/AIDS-related knowledge and attitudes. A systematic and long-term intervention among secondary school students must stay conducted for the prevention of HIV. (Gao, X *et al.,* 2012)

School children of today are exposed to the risk of being victims of HIV/AIDS - which was quite unknown to their precursors a few decades ago. The epidemic of HIV/AIDS is now progressing at a rapid pace among young people. Studies have reported that young people form a significant segment of those attending sexually transmitted infection (STI) clinics and those infected by HIV. Programmed managers and policy makers have often

recommended that schools can act at the center point for disseminating information and education on HIV/AIDS. Hence school education has been described as a 'social vaccine', and it can serve as a powerful preventive tool. In India, there is a wide gap between the inputs in the HIV/AIDS curriculum for schools and the actual education that is imparted. As children are a valuable resource for the future of a country, it is imperative that they be equipped with ample amount of information so as to protect themselves and their counterparts from falling a victim this still-an-incurable killer disease. With this background, the present study was conducted with the following objectives:

(i) To assess the awareness of school children regarding HIV/AIDS.
(ii) To provide suggestions for school AIDS education.

The present study was undertaken by the Department of Community Medicine, Maulana Azad Medical College and Harbans Kaur Memorial Trust (HKMC), a non-governmental organization (NGO) and a partner of programme operation by Delhi State AIDS Control Society (DSACS). Out of 1689 senior secondary schools in South Delhi area, 60 schools (3.5%) had been allotted to HKMC Trust by DSACS for carrying out school AIDS education programmes, in which there were 48 government schools (23 boys school, 23 girls and 2 co-educational) and 12 private co-educational schools. A total of 2592 students belonging to Classes IX to XI in these schools participated in the study. The response rate of students was 100%. The study was conducted over a period of 3 months from 1st August 2005 to 31st October 2005. The students were administered a pre-designed proforma, which included multiple choice questions. Printed consent was obtained from the school principals after explanation the purpose of the study to them. Data were entered and analyzed using SPSS version 13.0 by means of simple comparison of proportions. In the present study, majority of the students (74.9%) belonged to the age group of 15-17 years. The mean age was 15.8 ± 0.8 years. Most of them (60%) were females. All the students had heard of HIV/AIDS although only 51.4% were able to write the full form of AIDS and only 19.9% were able to write the full form of HIV. This is comparable to the observations of a study carried out amongst the secondary school students in Haryana and Jamnagar. However, a baseline assessment on HIVAIDS awareness amongst 250 Nigerian school students revealed that only 5% were able to expand HIV and AIDS. (Lal, *et al.,* 2008)

A questionnaire survey was approved out among 1041 students in secondary schools and colleges in Dar-es-Salaam, Tanzania to estimate the relationship between HIV-risky sexual behaviour and anti-condom bias, as well as with AIDS-related information, knowledge, perceptions and attitudes. Self-reportedly, 54% of students (75% of the boys and 40% of the girls) were sexually active, 39% had a regular sexual partner and 13% had multiple partners in the previous year. The condom use rate was higher than previous reports. However, 30% of sexually active respondents did not always use condoms (Risk-1 behaviour) and 35% of those with multiple partners in the previous year did not always use condoms (Risk-2 behaviour). Multiple logistic reversion analyses indicated that `sex partner hates condom' had association with both Risk-1 behaviour (OR 2.47; 95% CI 1.58–3.85) and Risk-2 behaviour (OR 2.47; 95% CI 1.10–5.48). Use of condom prevents HIV infection also had association with both Risk-1 behaviour (OR 2.09; 95% CI 1.19–3.67) and Risk-2 behaviour (OR 3.73; 95% CI 1.28–11.03). Students engaging in risky behaviour were aware of the risk, even though they failed to change their behaviour. Reasons for the AIDS epidemic among Tanzanian students and the importance of more effective AIDS education are also discussed. (Maswanya *et al*., 1999)

Knowledge about the spread of HIV and safe sexual practices has a dangerous impact on the prevention of the acquired immunodeficiency syndrome (AIDS). We evaluated the knowledge of and attitude towards AIDS, sexually transmitted diseases (STDs) and sexuality among college students in Thiruvananthapuram district, Kerala. We completed a community-based, cross-sectional survey of 625 randomly selected undergraduate college students (164 boys, 461 girls, age 18-22 years). We administered a pretested, structured questionnaire to assess the knowledge and attitude of the students towards AIDS, STDs and sexuality. We generated knowledge and attitude scores from the student responses, and used multivariable linear regression to study the association of these scores with select predictor variables (notably gender and place of residence). All the students in our section had heard about AIDS. However, only 45% knew that AIDS is not curable at present. Only 34% were aware of the symptoms of STDs, and 47% knew that STDs are associated with an increased risk of AIDS. In multivariable analyses, male students ($p < 0.001$), and urban residents ($p = 0.006$) demonstrated a higher knowledge of AIDS and STDs. Students from urban areas ($p = 0.014$) and those practising the Christian religion ($p = 0.042$) demonstrated more favourable attitudes towards AIDS. Our study identified substantial spaces in the knowledge of and attitude towards AIDS, STDs and sexuality among college students in

Kerala. The gap in knowledge between boys and girls, and between rural and urban students suggests the need for targeting girls and rural areas in the national AIDS education and awareness campaigns. (Lal *et al.,* 2000)

In present state, HIV/AIDS is reflected as one of the major non curable disease of developing countries like India and young ones form a significant part of those attending sexually transmitted infection (STI) clinics and those infected by HIV. In India HIV/AIDS is a one of the major responsible factor in mortality and morbidity of people. For the present study total of 360 students from class IX-XII (science and commerce) were taken as sample from 10 senior secondary English medium co-ed school of Udaipur, Rajasthan were taken through convenience sampling method. 6 students (3 boys & 3 girls) from each class were taken which constituted 36(18 boys and 18 girls) students from each school. Thus total of 360 (180 boys and 180 girls) students were obtained. The pre tested interview schedule was given to all selected students aimed to measure their knowledge and awareness about HIV/AIDS. The entire questionnaire was recovered and analyzed using simple descriptive statistical analysis. Among all the selected boys and girls it was found that majority were having awareness and knowledge about HIV/AIDS regarding general issues, mode of transmission, preventive measures and source of knowledge. Both boys and girls were having positive attitude towards infected person. Thus it has overall observed that majority of our young ones who are the pillars of future are aware of knowledge about this incurable and killer disease as about its full form, its curability and its consequence. (Jain *et al*., 2016)

The objective of this paper is to study the awareness of the Human Immunodeficiency Virus and Acquird Immunodeficiency Disease (HIV/AIDS) among senior secondary school students in Ghaziabad U.P. India. This was a cross-sectional survey involving 600 students from four secondary schools (Two urban and two rural) in Ghaziabad, selected by a two-stage stratified sampling technique, using a self-administered planned questionnaire. Around 40%, 13%, 15.33%, and 19% of the students identified sexual transmission, mother to child, blood transfusion and unsterilized needles, respectively, as modes of transmission of HIV infection. Students from urban school demonstrated more knowledge than students from rural schools. Similarly, male students had more knowledge than female students. Students from the higher social class demonstrated more knowledge than those from middle and the lower social class. It is concluded that the knowledge of the students on the transmission and prevention of HIV/AIDS is poor. There is need to intensify HIV/AIDS education programmes among Senior Secondary School Children. (Chand, D *et al*., 2014)

Youths are more vulnerable than adults of unplanned pregnancies, sexually transmitted diseases and HIV/AIDS. Among the adolescents, girls are more susceptible to STDs including HIV/AIDS. About different diseases their knowledge is very poor. This paper investigated adolescent's knowledge about sexually transmitted diseases including HIV/AIDS, its mode of transmission and ways of its prevention. Cross sectional study design was adopted for this study. A multistage group sampling technique was used to select the sample. The study found that a large proportion of adolescents were not aware about sexually transmitted diseases and AIDS. More than half (54.8%) of the adolescents ever heard about AIDS respectively. On an average, about one tenth of them had better knowledge on AIDS in terms of mode of transmission and prevention. The multivariate logistic regression analysis revealed that adolescent age, years of schooling and knowledge on STDs appeared to be important predictors of the awareness about AIDS ($p<0.05$). Useful and fruitful media campaigns to educate the adolescents regarding the health consequences of STDs including HIV/AIDS and integrated approach is strongly suggested for creating knowledge and awareness to control the spread of HIV and AIDS among young people in Bangladesh. (Rahman *et al*., 2009)

Significance:

HIV/AIDS has become a major global public health issue. An estimated value of 2015, about 36.7 million people were living with HIV which included 1.8 million children and global HIV incidence of 0.8%. In the same year, 1.1 million people died of AIDS-related illnesses. The huge majority of this number live in low- and middle- income countries. An estimated 78 million people have become infected with HIV and 35 million people have died of AIDS-related illnesses.

In 2015, globally the vast majority of them (about 19 million) live in east and southern Africa which saw 46% of new HIV infections. Around 40% of all people living with HIV do not know that they have the virus. (Avert.org, 2016) In Bangladesh, a study done by Rahman *et al,.* (1999) knowledge, attitudes, beliefs and practices about HIV/AIDS among the overseas job seekers. Another study done by Rahman *et al*,.(2009) about adolescent knowledge and awareness about AIDS/HIV and factors affecting them in Bangladesh. Some studies also done in Bangladesh about HIV/AIDS.

This situation is getting worse in developing countries like ours in Bangladesh due to inadequate access to modern health services, poor utilization and lack of awareness of the population about the disease. So we have planned survey among school and college students for knowing their knowledge, awareness, attitude about HIV/AIDS. So, this survey may help them to increase their consciousness about to this disease so that they can protect themselves from this disease as there is no cure for this.

Aims and objectives of this study:

- To know the knowledge, awareness level about HIV/ AIDS among students.
- To assess attitude to the patients.

3.1 Type of the study

It is a survey based study

3.2 Study Population

Students who were read in class Eight-Twelve were the study population. The study was carried out in Dhaka (Bright School and College, Junior Scolastica High School, Notre Dame College, A K High School and College, Ideal School and College, Barnamala Adarsha High School and College, Central Women's College, City College, Engeenering University Cirl's College, Imperial College, Gov't Science College, Jatrabari Ideal School, Dania College and Mirpur School), Munshigonj (Akal Megh Azizia Dhakhil Madrasha) and Brahmanbaria (Tofail Ali High School and College). In these areas 380 respondents were found.

3.3 Inclusion Criteria

Students who were read in class Eight- Twelve.

3.4 Exclusion Criteria

Unwilling to participate or unable to comply with protocol requirement.

3.5 Development of the Questionnaire

The questionnaire was developed based on different findings in available in journal and research paper. In this study convenient sampling technique was followed.

3.6 Data Collection Method

The data was collected though questionnaire that is formed in English language. Then it translated in Bangla language. It consists of questions to find out the knowledge level of HIV and AIDS and to assess the awareness of this disease. The data was collected by face to face interview.

3.7 Data Analysis

After collecting, all data were checked and analyzed with the help of Microsoft Office Excel 2010.

4.1 Age distribution of students

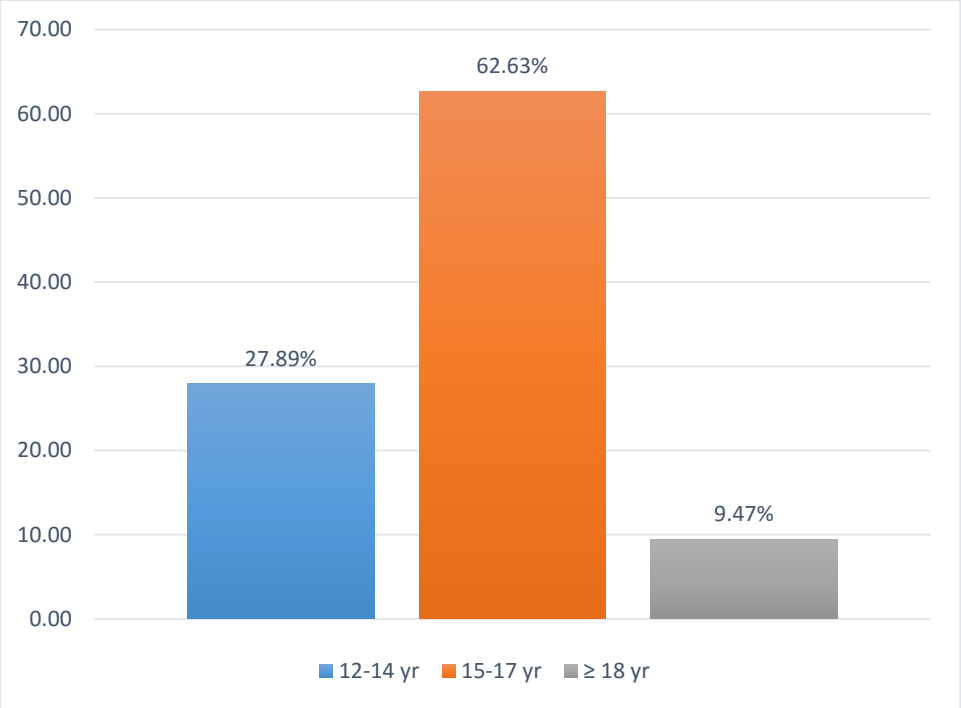


Fig 4.1: Age distribution of students

Majority 62.63% of the students among 380 respondents were in the age group of (15-17) years old and 9.47% students having 18 or more years were participated in this study.

4.2 Number of male and female students

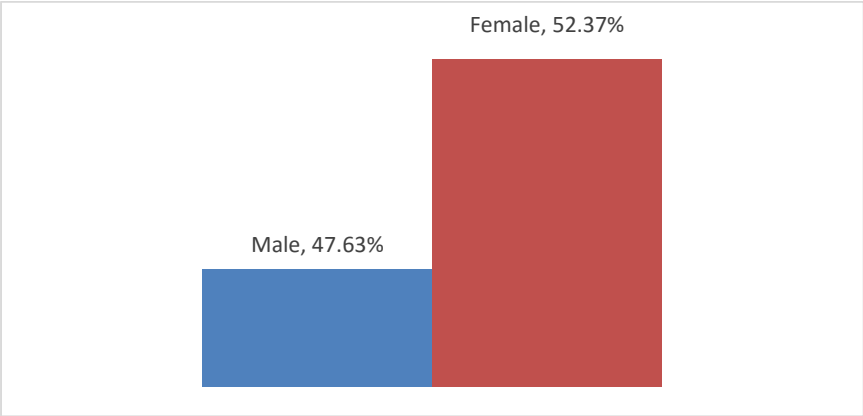


Figure 4.2: Number of male and female students

Around 380 students who are school and college going, 52.37% students are female and 47.63% are male. A graphical value has been shown for that. Here's highest value has shown for female students and lowest value is for male students. We consider here both male and female.

4.3 Educational institution status

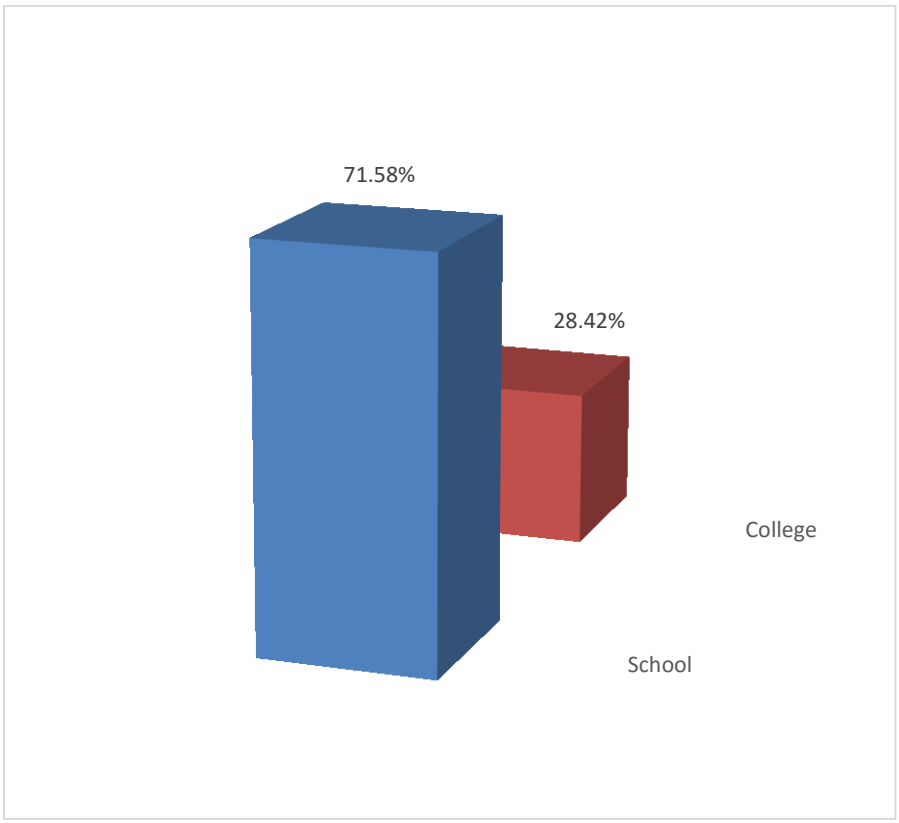


Fig 4.3: Educational institution status

This study was conducted between school and college going students. Majority students about 71.58% were from school and 28.42% students were from college who participated in this study.

4.4 Group Distribution

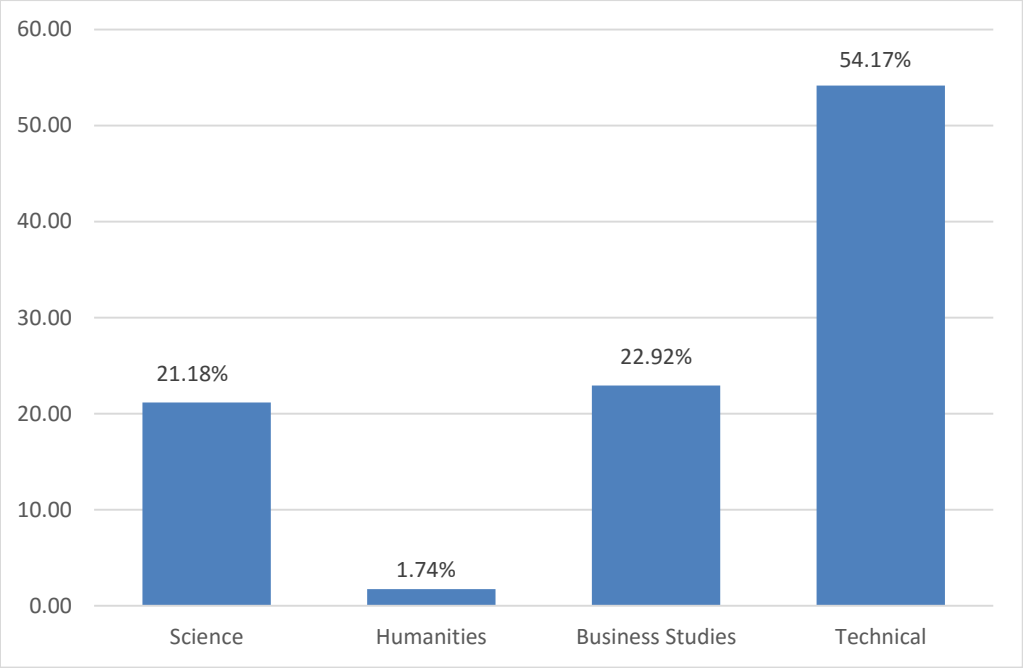


Fig 4.4: Students having different group of class

Among 288 students, majority 54.17% were from technical group, 22.29% from business studies, 21.18% from science, 1.74% were from humanities background. The study was conducted between 380 students but class eight has no groups. So, this graph has shown groups of class nine- twelve.

4.5 Marital status

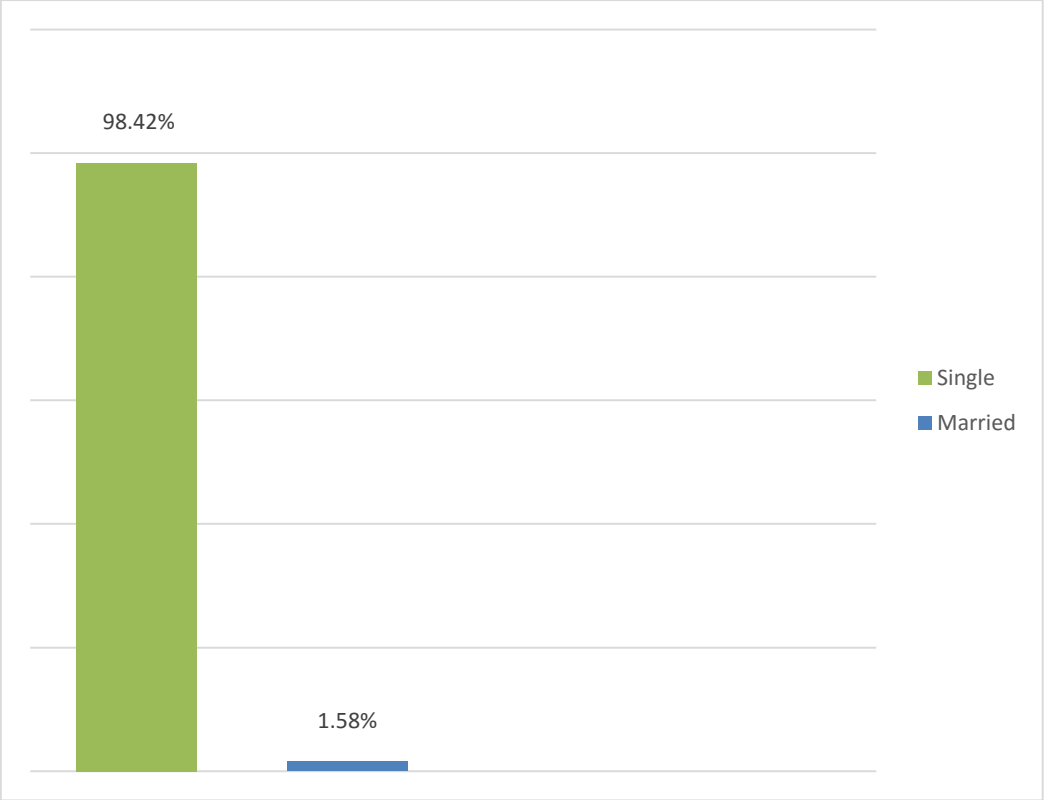


Fig 4.5: Marital status of students

As this study were done between school and college students, majority 98.42% students were single and 1.58% students were married. Here none was separated and widowed.

4.6 Heard about HIV/AIDS

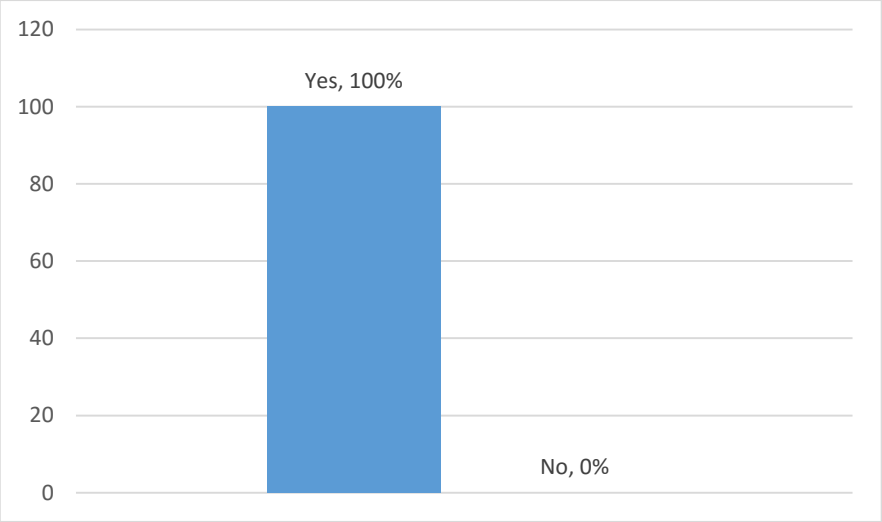


Fig 4.6: Heard about HIV/AIDS

Here almost 100% student have heard about HIV/ AIDS. There was no participant who has not heard about this. The total number of student were 380 and all of them have heard about this.

4.7 Source of knowledge

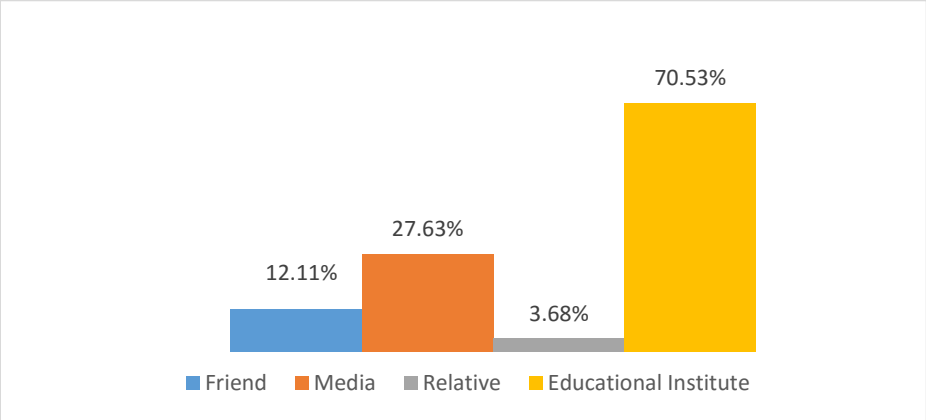


Fig 4.7: Source of knowledge

About 70.55% students were heard about HIV /AIDS from educational institution, 27.63% students have heard it from media, 12.11% from friends and 3.63% from relative. Here

many of the students were given multiple answer that means they heard it from different source.

4.8 Difference between HIV and AIDS

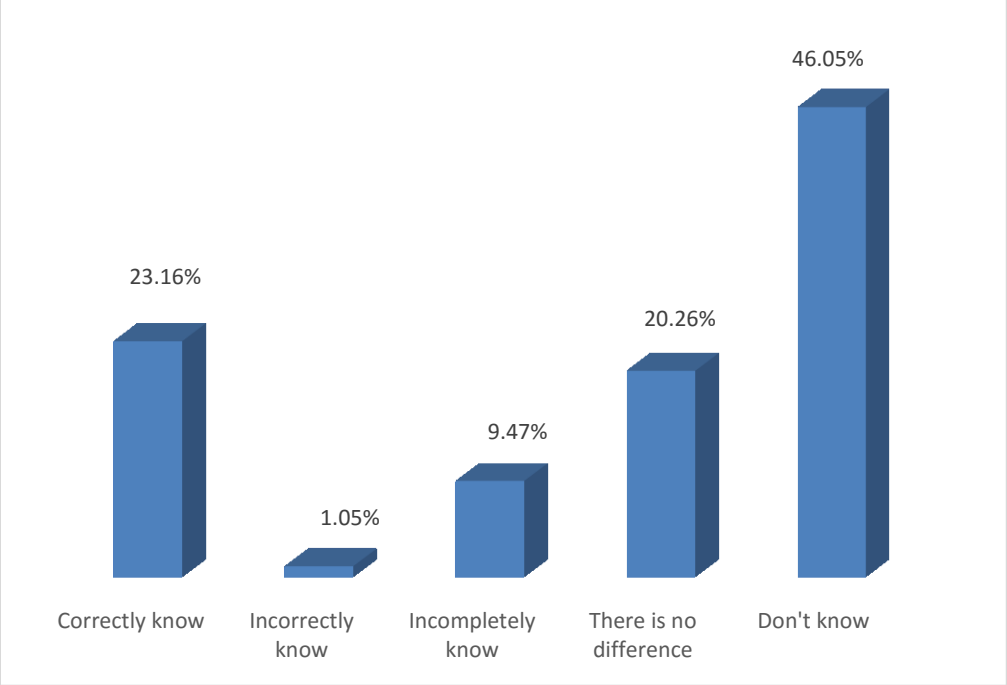


Fig 4.8: Difference between HIV and AIDS

Majority 46.05% students were told that they don't know the difference between HIV and AIDS. There were 23.16% students were correctly know about this thing. About 1.05% students were incorrectly know about the thing.

4.9 Treatable information about AIDS

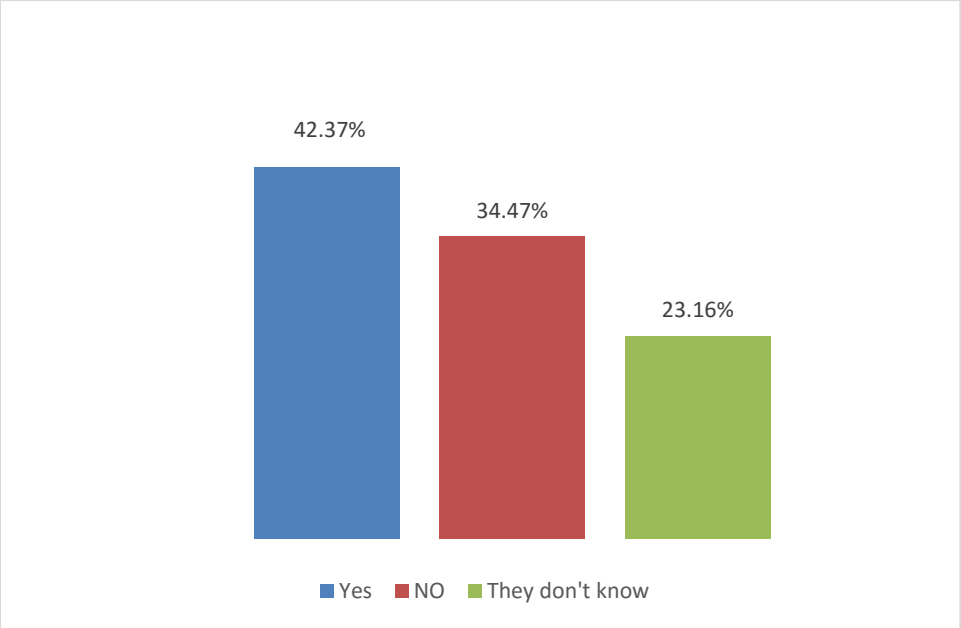


Fig 4.9: Treatable information about AIDS

Those students who were participated in this study around 42.37% students were told that AIDS is treatable and 23.16% students were told that they don’t know about this.

4.10 Vaccine availability

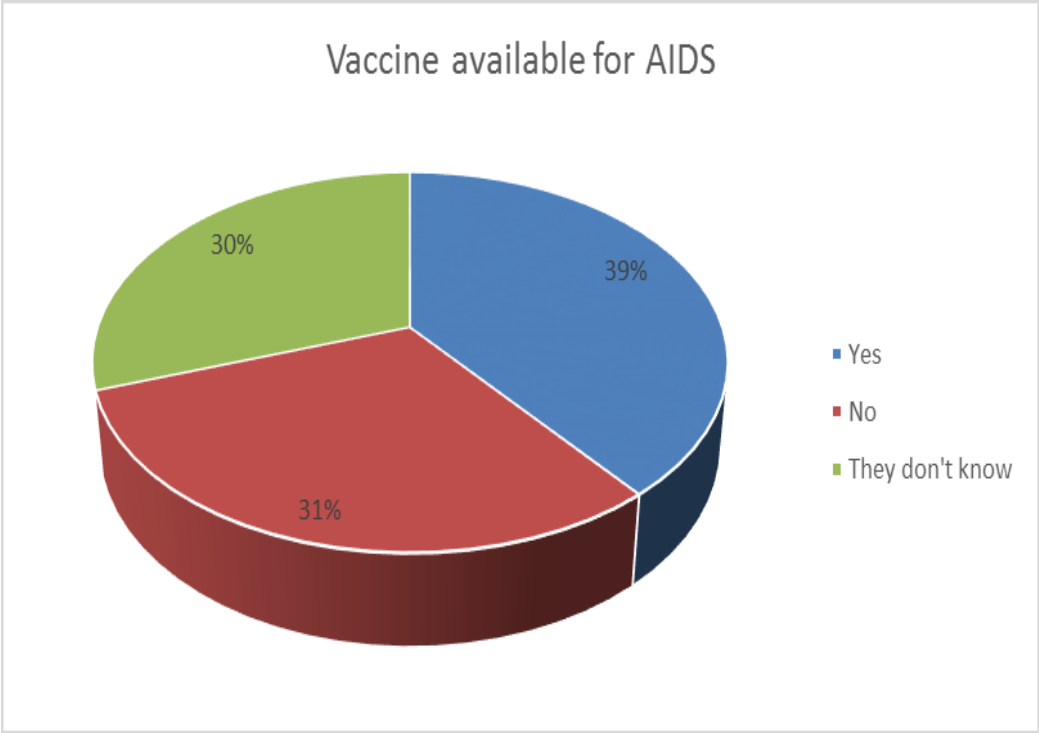
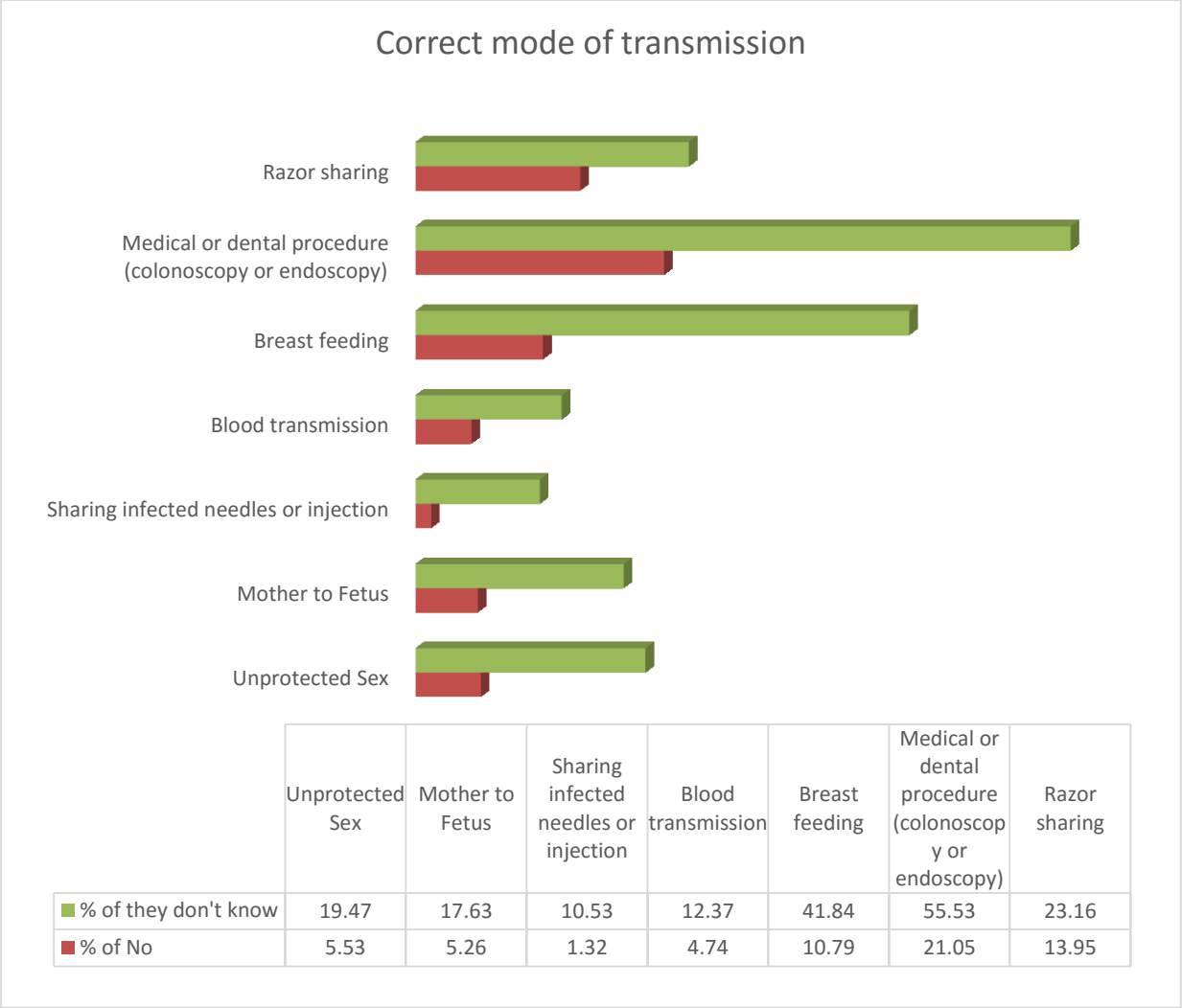


Fig 4.10: Vaccine availability

Among 380 students, majority 39% students were told that vaccine available for AIDS and 30% students were told that there is no vaccine for HIV/ AIDS.

4.11 Correct mode of transmission

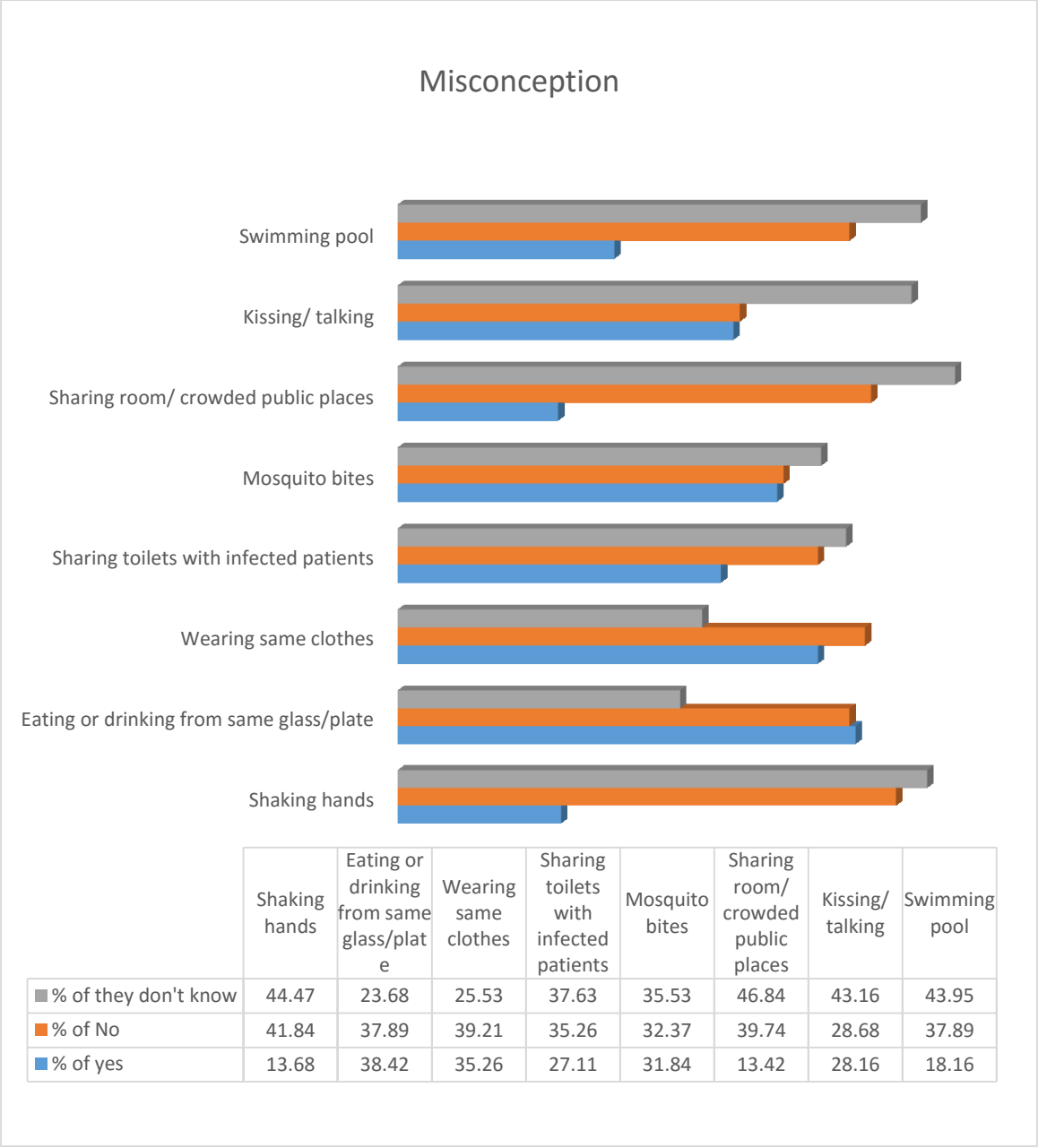


	Unprotected Sex	Mother to Fetus	Sharing infected needles or injection	Blood transmission	Breast feeding	Medical or dental procedure (colonoscopy or endoscopy)	Razor sharing
% of they don't know	19.47	17.63	10.53	12.37	41.84	55.53	23.16
% of No	5.53	5.26	1.32	4.74	10.79	21.05	13.95

Fig 4.11: Correct mode of transmission

Most of the participants 88.16% knew that HIV transmitted through sharing infected needle or injection, 82.89% knew that it is transmitted through blood transmission. Around 23.16% told about it is transmitted through medical or dental procedure.

4.12 Misconception about HIV/ AIDS



	Shaking hands	Eating or drinking from same glass/plate	Wearing same clothes	Sharing toilets with infected patients	Mosquito bites	Sharing room/ crowded public places	Kissing/ talking	Swimming pool
% of they don't know	44.47	23.68	25.53	37.63	35.53	46.84	43.16	43.95
% of No	41.84	37.89	39.21	35.26	32.37	39.74	28.68	37.89
% of yes	13.68	38.42	35.26	27.11	31.84	13.42	28.16	18.16

Fig 4.12: Misconception about HIV/ AIDS

Among 340 students, majority 38.42% students have misconception that AIDS can occur by eating or drinking from same glass or plate and 13.42% participants have told about that it can occur through sharing room or remaining crowded place with patient.

4.13 Mode of prevention

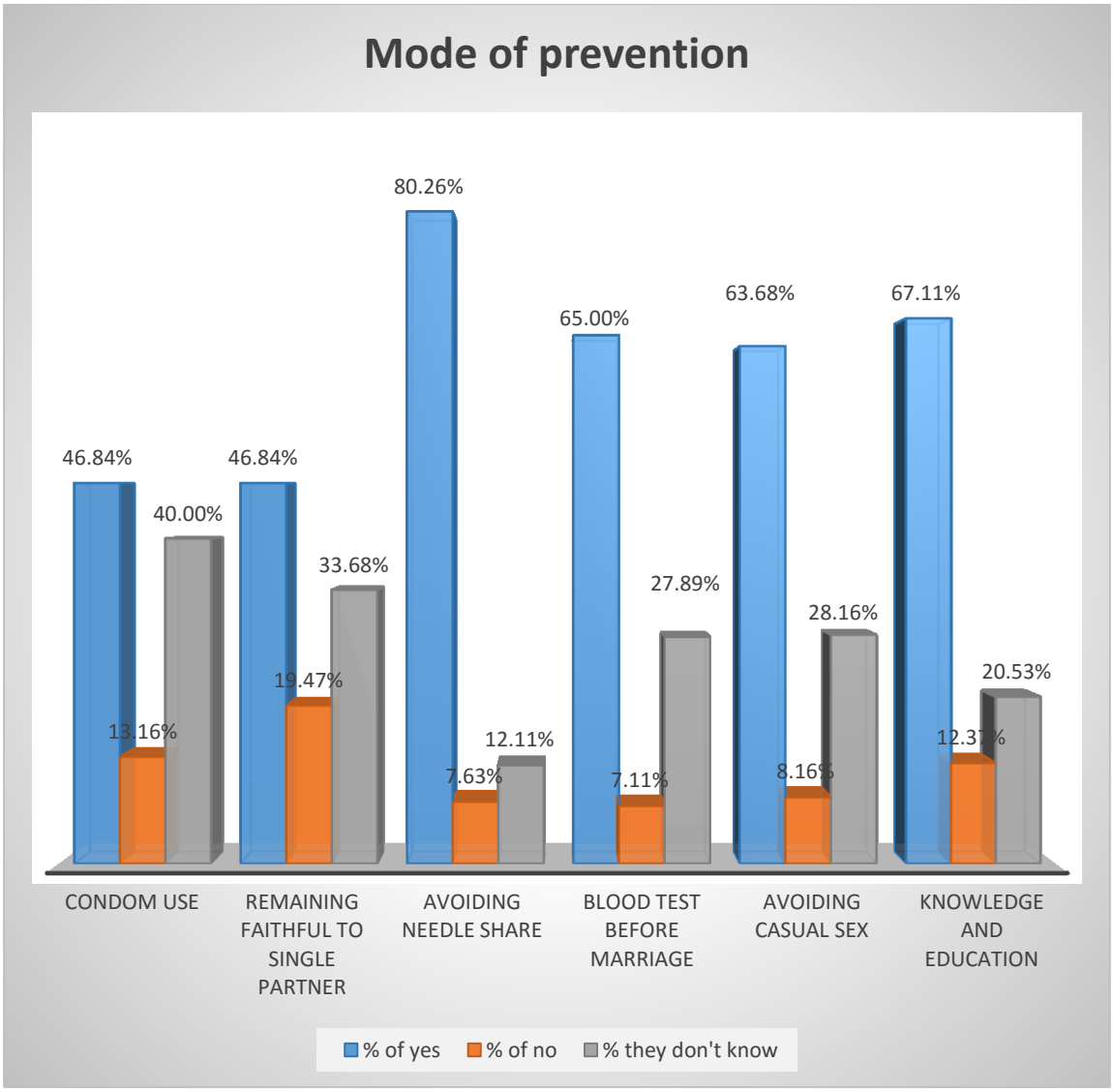


Fig 4.13: Misconception about HIV/ AIDS

Around 80.26% participants in this study have told that avoiding needle share and 46.84% participants have told that condom use and remaining faithful to single partner can be mode of prevention for AIDS.

4.14 Attitude towards AIDS patients

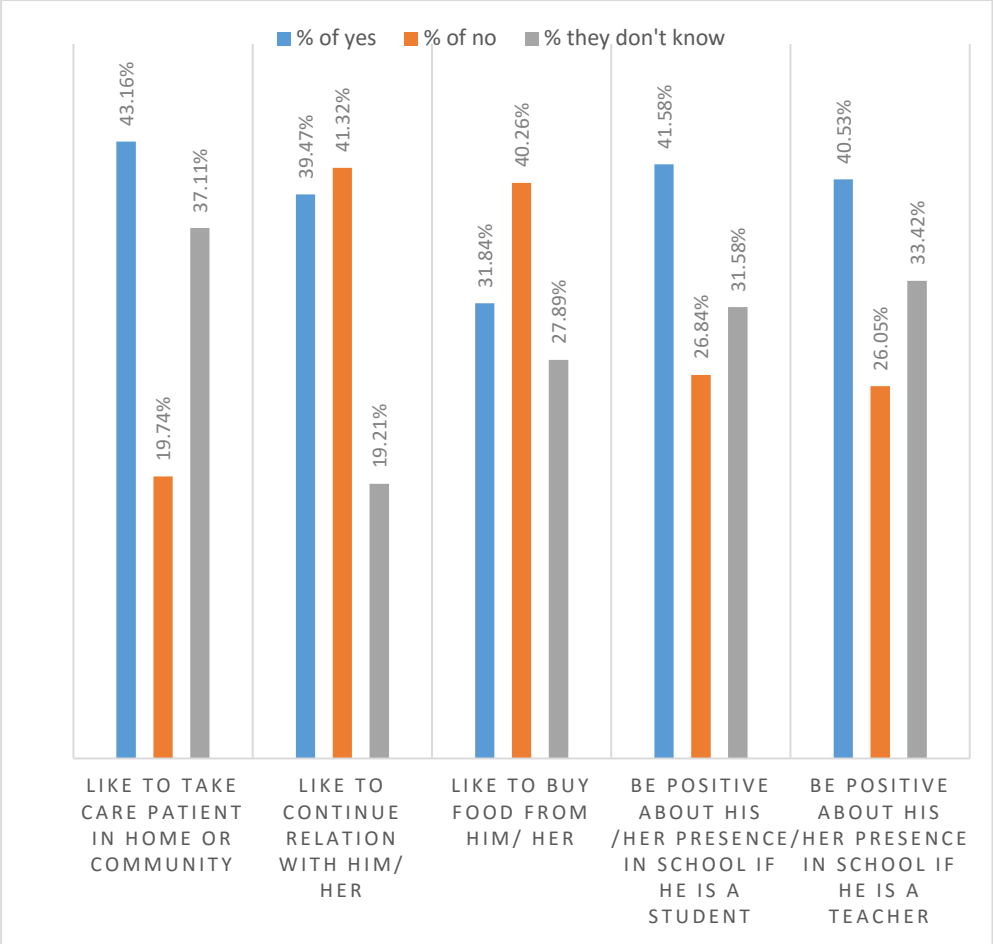


Fig 4.14: Attitude towards AIDS patients

Majority 43.17% participants have told that they would like to take care patient in home or community and 31.84% students have told that they will like to buy food from him/ her (patient).

A survey was conducted to know the knowledge about HIV/AIDS among school and college students by using a structured questionnaire. Here the population was 380 and the survey was conducted in Dhaka, Munshigonj, Bramanbaria. Among the respondent, about 62.63% of the students were aged between 15-17 years. Among them 18 years aged or more than students were 9.47%. Our study found that about, 52.37% students are female and 47.63% are male.

A study of awareness done by Lal, *et al*., (2008) about HIV/AIDS among senior secondary school children of Delhi shows that majority of the students (74.9%) belonged to the age group of 15-17 years. The mean age was 15.8 ± 0.8 years. Most of them (60%) were females. Our study has nearly given same observation compare to this study.

Among 380 students, 72% students were in class Eight- Ten and 38% were class Eleven-Twelve. In this study, majority students (98.42%) were single and 1.58% students were married.

The good thing was that all participants in this study had heard about HIV/ AIDS. There were 23.16% students were correctly know about HIV and AIDS. Majority 46.05% students were told that they don't know the difference between HIV and AIDS.

Many of the students were given multiple answer that they heard HIV/AIDS from different source (educational institute, media, relative and friend). In our study about 70.55% students were heard about from educational institution, 27.63% from media, 12.11% from friends and 3.63% from relative had heard it. A study was conducted of knowledge about HIV/AIDS by Gupta *et al.,* (2013) among secondary school students. In this study, majority of the students (85%), the source of information about HIV/AIDS was the television. Compared to this study, our population have heard it from different source.

A study was conducted by Bolla *et al*., (2013) about knowledge regarding HIV/AIDS among secondary school students in Khammam town, Andhra. Around 92.60% of participants had heard of HIV/AIDS, had written correct abbreviation of HIV and AIDS. Nearly 78.90% knew that causative agent of HIV/AIDS as virus. Compared to this study, our result was better because all our participant have heard about HIV/AIDS. But in this study majority of the people correctly knew about HIV/AIDS compared to our study.

Around 42.37% students were mentioned that AIDS is treatable and 23.16% were told that they don't know about this it treatable or not. Majority 39% students said that vaccine is available for AIDS and 30% students told that there is no vaccine for HIV/ AIDS.

Our study had shown that about 88.16% participants knew that HIV transmitted through sharing infected needle or injection. Blood transmission (82.89%), mother to fetus (77.1%), unprotected sex (75%), razor sharing (62.89%), breast feeding (47.37%), medical or dental procedure (23.16%)were mentioned by the respondents A study of awareness about HIV/AIDS by Chand *et al*., (2014) among senior secondary school students of Ghaziabad used a self-administered planned questionnaire. Around 40%, 13%, 15.33%, and 19% of the students identified sexual transmission, mother to child, blood transfusion and unsterilized needles as modes of transmission of HIV infection. Compared to this, our population had better knowledge about HIV/ AIDS.

In this study, avoiding needle share (80.26%), condom use (46.84%), remaining faithful to single partner (46.84%), blood test before marriage (65%), avoided casual sex (63%) and knowledge and education(67.11%) respondent mentioned those can be mode of prevention for AIDS. It's a good thing that a good percentage of respondent had known that sharing needle is a source of getting AIDS.

A study was held in Bangladesh about adolescent knowledge and awareness about HIV/ AIDS and factors affecting them by Rahman *et al*., (2009). Among 3362 female adolescent, one tenth had better knowledge on AIDS in terms of mode of transmission and prevention. About 38.42% students had misconception that AIDS can occur by eating or drinking food from same plate or glass of infected people, wearing same dress (35.26%), mosquito bite (31.84%), kissing or talking (28.16%), sharing toilet (27.11%), swimming pool (18.16%), shaking hands (13.68%), sharing room (13.42%) were also included in their misconception. They had not proper knowledge about this thing.

Around 43.17% participants had told that they would like to take care patient in home or community, wanted continue relation (39.47%), would buy food from him/ her (31.84%), patient's presence as a student were agreed (41.58%), patient's presence as a teacher were agreed (40.53%) participants.

Above this study, it is clear that majority of our population had not knowledge about HIV/ AIDS up to the mark. Their attitude towards the patient is not satisfactory. Our mass media and educational institute are playing very important role of spreading the knowledge about HIV/ AIDS. As it a fatal disease and it has no cure till now so all people should know about the disease properly.

In this survey, it has shown that almost our population had heard the name of HIV/AIDS. Their knowledge level about its transmission and prevention is not up to the mark and their attitude towards AIDS patient is not satisfactory. They should improve their attitude towards the AIDS patients. Useful and successful media campaigns should arrange to educate people regarding the health consequences of STDs including HIV/AIDS. Combined approach of media, educational institute, and government are strongly needed for creating knowledge and awareness to control the spread of HIV and AIDS among young people in Bangladesh. If all should develop better knowledge about this fatal disease, then it will be easy to prevent this. As our country is an overpopulated country, so proper knowledge among people especially young people who are at high risk of getting AIDS is necessary to cope up with this disease.

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CHAPTER 2
LITERATURE REVIEW

HIV/AIDS has arisen as the single most difficult challenge to public health. School children of today are showing to the risk of HIV/AIDS. The study was showed to determine the knowledge among secondary school students concerning HIV/AIDS and provide recommendations for HIV/AIDS knowledge in schools. A cross-sectional study was shown among students of tenth to twelfth standard in the intermediate schools of Lucknow, India, from July to October 2011. A total of 215 students, both boys and girls, were joined in the study. In this study, for majority of the students (85%), the source of information about HIV/AIDS was the television. Regarding knowledge about modes of transmission of HIV/AIDS among girl students, 95.1% of them told that it is through unprotected sex. A total of 75.8% students said that it was transmitted from mother to child. It was observed that the knowledge of the school students was moderately satisfactory for most of the variables like modes of transmission, including mother-to-child transmission of the disease. However, schools should come forward to design awareness campaigns for the benefit of the students. (Gupta *et al.,* 2013)

AIDS is the shortening of "Acquired Immune-Deficiency Syndrome" which is a fatal disease described as modern outbreak, modern curse, devastating disease, deceptive microbiological bomb and biological disaster and so-on. It is a world health problem of extraordinary scale and extreme urgency. AIDS appeared as one of the most important public health issues of the late twentieth and early twenty- first centuries and is now one of the leading causes of global morbidity and mortality. Adolescents and youth need information in order to mark such responsible choices in terms of sexual behavior/relationship. They also need to integrate and personalize this information or knowledge so that they can make healthy choices. Young people learn a great deal from each other and by sharing ideas and experiences amongst themselves. Peer influence is a great motivating factor in the adoption of specific behaviour patterns. Therefore, correct information and values imparted to one group of young people will be passed on to the other young people. The study was carried out from June 2011 to December 2011. It was conducted among 635 students. Around 92.60% of participants had heard of HIV/AIDS, had written correct abbreviation of HIV and AIDS. Nearly 78.90% knew that causative agent of HIV/AIDS as virus, 76.85% of participants gave correct response for HIV/AIDS awareness symbol as red ribbon. 42.83% of participants knew how to prevent HIV/AIDS. 31.34% participants knew that mosquito bite from HIV/AIDS infected person will not transmit HIV virus. 33.39% of participants knew that intravenous drug abuse will spread

HIV virus. 75.43% of participants knew that HIV/AIDS status can be confirmed by blood test. 46.14% of participants who knew that sharing a meal with HIV/AIDS infected person will not transmit HIV virus. Education is currently the only means of preventing the spread of HIV/AIDS. The education which is necessary to protect adolescents from the virus and following disease involves changes at many levels. Individuals and systems have to make changes in their thinking, behaviour, attitudes, beliefs and policies. (Bolla *et al.,* 2013)

Disease prevention may be improved with an enhanced understanding of student–environment interactions. The purposes of the study were to compare HIV/AIDS-related knowledge, attitudes, sexual behaviors, and sources of HIV/STI information and study the association between sources of HIV/STI information and HIV/AIDS-related knowledge, attitudes, and sexual behaviors among Chinese college students in China and the United States. Comparative, correlational analysis of survey data from 608 students in two countries was conducted. Chinese students in the United States scored higher on knowledge questions. More students in the United States received HIV/STI information from the Internet and family members than did students in China. Traditional media and schoolteachers had a stronger association with participants' HIV-related knowledge, age at first intercourse, and number of sexual partners in both samples than did other sources. The survey revealed incomplete knowledge within both groups. Prevention programs should focus on risky misconceptions and should teach about strategic utilization of media.
(Tung *et al.,* 2013)

HIV/AIDS is known as a national priority health issue in Ghana. Consequently, the Ghana AIDS Commission and the National AIDS Control Programme were established, among other things, to improve the knowledge and awareness on the nature, causes, effects and means of managing the spread of HIV/AIDS among populations at risk in Ghana. Through the efforts of these bodies and other investors in health, several awareness creation and sensitization efforts have been directed at teenage girls, a high risk group in Ghana. This study therefore assesses the knowledge and awareness of HIV/AIDS among senior high school girls in their teens in Ghana using a sample of 260 female students of West African Senior High School. The data collected were analyzed and discussed under relevant themes and within the context of the literature. The study revealed that generally, senior high school girls were knowledgeable on the nature, modes of transmission, and prevention of

HIV/AIDS. There were however some students who exhibited limited knowledge on some issues including the spiritual causes and treatment of HIV/AIDS, contacts and associations with infected persons, as well as determination of HIV infection from appearances rather than testing. The study also developed important concerns about the unwillingness of senior high school girls to use condoms as a preventive measure and the need to reorient HIV/AIDS awareness interventions in Ghana. (Appiah-Agyekum *et al.,* 2013)

Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) are amongst the most multifaceted health problems in the world. Young people are at high risk of HIV and AIDS infections and are, therefore, in need of targeted prevention. School-based HIV/AIDS health education may be an effective way to prevent the spread of AIDS among adolescents. The study was a school-based intervention conducted in three middle schools and two high schools in Wuhan, China, which included 702 boys and 766 girls, with ages from 11 to 18 years old. The intervention was a one-class education program about HIV/AIDS for participants. HIV/AIDS knowledge, attitude, and high-risk behaviors were considered using an unspecified self-administered questionnaire before and after the education intervention. Misconceptions about basic medical knowledge and non-transmission modes of HIV/AIDS among all the students prevail. Approximately 10% to 40% of students had negative attitudes about HIV/AIDS before the intervention. After the intervention, all of the students had significant improvements in knowledge and attitude about HIV/AIDS ($P<.05$), indicating that educational intervention increased the students' knowledge significantly and changed their attitudes positively. Logistic regression analyses indicated that before the intervention the students' level of knowledge about HIV/AIDS was significantly associated with grade, economic status of the family, and attitudes toward participation in HIV/AIDS health information campaigns. HIV/AIDS education programs were received by secondary students and positively influenced HIV/AIDS-related knowledge and attitudes. A systematic and long-term intervention among secondary school students must stay conducted for the prevention of HIV. (Gao, X *et al.,* 2012)

School children of today are exposed to the risk of being victims of HIV/AIDS - which was quite unknown to their precursors a few decades ago. The epidemic of HIV/AIDS is now progressing at a rapid pace among young people. Studies have reported that young people form a significant segment of those attending sexually transmitted infection (STI) clinics and those infected by HIV. Programmed managers and policy makers have often

recommended that schools can act at the center point for disseminating information and education on HIV/AIDS. Hence school education has been described as a 'social vaccine', and it can serve as a powerful preventive tool. In India, there is a wide gap between the inputs in the HIV/AIDS curriculum for schools and the actual education that is imparted. As children are a valuable resource for the future of a country, it is imperative that they be equipped with ample amount of information so as to protect themselves and their counterparts from falling a victim this still-an-incurable killer disease. With this background, the present study was conducted with the following objectives:

(i) To assess the awareness of school children regarding HIV/AIDS.
(ii) To provide suggestions for school AIDS education.

The present study was undertaken by the Department of Community Medicine, Maulana Azad Medical College and Harbans Kaur Memorial Trust (HKMC), a non-governmental organization (NGO) and a partner of programme operation by Delhi State AIDS Control Society (DSACS). Out of 1689 senior secondary schools in South Delhi area, 60 schools (3.5%) had been allotted to HKMC Trust by DSACS for carrying out school AIDS education programmes, in which there were 48 government schools (23 boys school, 23 girls and 2 co-educational) and 12 private co-educational schools. A total of 2592 students belonging to Classes IX to XI in these schools participated in the study. The response rate of students was 100%. The study was conducted over a period of 3 months from 1st August 2005 to 31st October 2005. The students were administered a pre-designed proforma, which included multiple choice questions. Printed consent was obtained from the school principals after explanation the purpose of the study to them. Data were entered and analyzed using SPSS version 13.0 by means of simple comparison of proportions. In the present study, majority of the students (74.9%) belonged to the age group of 15-17 years. The mean age was 15.8 ± 0.8 years. Most of them (60%) were females. All the students had heard of HIV/AIDS although only 51.4% were able to write the full form of AIDS and only 19.9% were able to write the full form of HIV. This is comparable to the observations of a study carried out amongst the secondary school students in Haryana and Jamnagar. However, a baseline assessment on HIVAIDS awareness amongst 250 Nigerian school students revealed that only 5% were able to expand HIV and AIDS. (Lal, *et al.,* 2008)

A questionnaire survey was approved out among 1041 students in secondary schools and colleges in Dar-es-Salaam, Tanzania to estimate the relationship between HIV-risky sexual behaviour and anti-condom bias, as well as with AIDS-related information, knowledge, perceptions and attitudes. Self-reportedly, 54% of students (75% of the boys and 40% of the girls) were sexually active, 39% had a regular sexual partner and 13% had multiple partners in the previous year. The condom use rate was higher than previous reports. However, 30% of sexually active respondents did not always use condoms (Risk-1 behaviour) and 35% of those with multiple partners in the previous year did not always use condoms (Risk-2 behaviour). Multiple logistic reversion analyses indicated that `sex partner hates condom' had association with both Risk-1 behaviour (OR 2.47; 95% CI 1.58–3.85) and Risk-2 behaviour (OR 2.47; 95% CI 1.10–5.48). Use of condom prevents HIV infection also had association with both Risk-1 behaviour (OR 2.09; 95% CI 1.19–3.67) and Risk-2 behaviour (OR 3.73; 95% CI 1.28–11.03). Students engaging in risky behaviour were aware of the risk, even though they failed to change their behaviour. Reasons for the AIDS epidemic among Tanzanian students and the importance of more effective AIDS education are also discussed. (Maswanya *et al*., 1999)

Knowledge about the spread of HIV and safe sexual practices has a dangerous impact on the prevention of the acquired immunodeficiency syndrome (AIDS). We evaluated the knowledge of and attitude towards AIDS, sexually transmitted diseases (STDs) and sexuality among college students in Thiruvananthapuram district, Kerala. We completed a community-based, cross-sectional survey of 625 randomly selected undergraduate college students (164 boys, 461 girls, age 18-22 years). We administered a pretested, structured questionnaire to assess the knowledge and attitude of the students towards AIDS, STDs and sexuality. We generated knowledge and attitude scores from the student responses, and used multivariable linear regression to study the association of these scores with select predictor variables (notably gender and place of residence). All the students in our section had heard about AIDS. However, only 45% knew that AIDS is not curable at present. Only 34% were aware of the symptoms of STDs, and 47% knew that STDs are associated with an increased risk of AIDS. In multivariable analyses, male students ($p < 0.001$), and urban residents ($p = 0.006$) demonstrated a higher knowledge of AIDS and STDs. Students from urban areas ($p = 0.014$) and those practising the Christian religion ($p = 0.042$) demonstrated more favourable attitudes towards AIDS. Our study identified substantial spaces in the knowledge of and attitude towards AIDS, STDs and sexuality among college students in

Kerala. The gap in knowledge between boys and girls, and between rural and urban students suggests the need for targeting girls and rural areas in the national AIDS education and awareness campaigns. (Lal *et al.,* 2000)

In present state, HIV/AIDS is reflected as one of the major non curable disease of developing countries like India and young ones form a significant part of those attending sexually transmitted infection (STI) clinics and those infected by HIV. In India HIV/AIDS is a one of the major responsible factor in mortality and morbidity of people. For the present study total of 360 students from class IX-XII (science and commerce) were taken as sample from 10 senior secondary English medium co-ed school of Udaipur, Rajasthan were taken through convenience sampling method. 6 students (3 boys & 3 girls) from each class were taken which constituted 36(18 boys and 18 girls) students from each school. Thus total of 360 (180 boys and 180 girls) students were obtained. The pre tested interview schedule was given to all selected students aimed to measure their knowledge and awareness about HIV/AIDS. The entire questionnaire was recovered and analyzed using simple descriptive statistical analysis. Among all the selected boys and girls it was found that majority were having awareness and knowledge about HIV/AIDS regarding general issues, mode of transmission, preventive measures and source of knowledge. Both boys and girls were having positive attitude towards infected person. Thus it has overall observed that majority of our young ones who are the pillars of future are aware of knowledge about this incurable and killer disease as about its full form, its curability and its consequence. (Jain *et al*., 2016)

The objective of this paper is to study the awareness of the Human Immunodeficiency Virus and Acquird Immunodeficiency Disease (HIV/AIDS) among senior secondary school students in Ghaziabad U.P. India. This was a cross-sectional survey involving 600 students from four secondary schools (Two urban and two rural) in Ghaziabad, selected by a two-stage stratified sampling technique, using a self-administered planned questionnaire. Around 40%, 13%, 15.33%, and 19% of the students identified sexual transmission, mother to child, blood transfusion and unsterilized needles, respectively, as modes of transmission of HIV infection. Students from urban school demonstrated more knowledge than students from rural schools. Similarly, male students had more knowledge than female students. Students from the higher social class demonstrated more knowledge than those from middle and the lower social class. It is concluded that the knowledge of the students on the transmission and prevention of HIV/AIDS is poor. There is need to intensify HIV/AIDS education programmes among Senior Secondary School Children. (Chand, D *et al*., 2014)

Youths are more vulnerable than adults of unplanned pregnancies, sexually transmitted diseases and HIV/AIDS. Among the adolescents, girls are more susceptible to STDs including HIV/AIDS. About different diseases their knowledge is very poor. This paper investigated adolescent's knowledge about sexually transmitted diseases including HIV/AIDS, its mode of transmission and ways of its prevention. Cross sectional study design was adopted for this study. A multistage group sampling technique was used to select the sample. The study found that a large proportion of adolescents were not aware about sexually transmitted diseases and AIDS. More than half (54.8%) of the adolescents ever heard about AIDS respectively. On an average, about one tenth of them had better knowledge on AIDS in terms of mode of transmission and prevention. The multivariate logistic regression analysis revealed that adolescent age, years of schooling and knowledge on STDs appeared to be important predictors of the awareness about AIDS ($p<0.05$). Useful and fruitful media campaigns to educate the adolescents regarding the health consequences of STDs including HIV/AIDS and integrated approach is strongly suggested for creating knowledge and awareness to control the spread of HIV and AIDS among young people in Bangladesh. (Rahman *et al*., 2009)

Significance

HIV/AIDS has become a major global public health issue. An estimated value of 2015, about 36.7 million people were living with HIV which included 1.8 million children and global HIV incidence of 0.8%. In the same year, 1.1 million people died of AIDS-related illnesses. The huge majority of this number live in low- and middle- income countries. An estimated 78 million people have become infected with HIV and 35 million people have died of AIDS-related illnesses.

In 2015, globally the vast majority of them (about 19 million) live in east and southern Africa which saw 46% of new HIV infections. Around 40% of all people living with HIV do not know that they have the virus. (Avert.org, 2016) In Bangladesh, a study done by Rahman *et al,.* (1999) knowledge, attitudes, beliefs and practices about HIV/AIDS among the overseas job seekers. Another study done by Rahman *et al*,.(2009) about adolescent knowledge and awareness about AIDS/HIV and factors affecting them in Bangladesh. Some studies also done in Bangladesh about HIV/AIDS.

This situation is getting worse in developing countries like ours in Bangladesh due to inadequate access to modern health services, poor utilization and lack of awareness of the population about the disease. So we have planned survey among school and college students for knowing their knowledge, awareness, attitude about HIV/AIDS. So, this survey may help them to increase their consciousness about to this disease so that they can protect themselves from this disease as there is no cure for this.

Aims and objectives of this study

- To know the knowledge, awareness level about HIV/ AIDS among students.
- To assess attitude to the patients.

CHAPTER 3

METHODOLOGY

3.1 Type of the study

It was a survey based study

3.2 Study Population

Students who were read in class Eight-Twelve were the study population. The study was carried out in Dhaka (Bright School and College, Junior Scolastica High School, Notre Dame College, A K High School and College, Ideal School and College, Barnamala Adarsha High School and College, Central Women's College, City College, Engeenering University Cirl's College, Imperial College, Gov't Science College, Jatrabari Ideal School, Dania College and Mirpur School), Munshigonj (Akal Megh Azizia Dhakhil Madrasha) and Brahmanbaria (Tofail Ali High School and College). In these areas 380 respondents were found.

3.3 Inclusion Criteria

- Students who were read in class Eight- Twelve.
- Both male and female were included.

3.4 Exclusion Criteria

Unwilling to participate or unable to comply with protocol requirement.

3.5 Development of the Questionnaire

The questionnaire was developed based on different findings in available in journal and research paper. In this study convenient sampling technique was followed.

3.6 Data Collection Method

The data was collected though questionnaire that is formed in English language. Then it translated in Bangla language. It consists of questions to find out the knowledge level of HIV and AIDS and to assess the awareness of this disease. The data was collected by face to face interview.

3.7 Data Analysis

After collecting, all data were checked and analyzed with the help of Microsoft Office Excel 2010.

CHAPTER 4

RESULTS

4.1 Age distribution of students

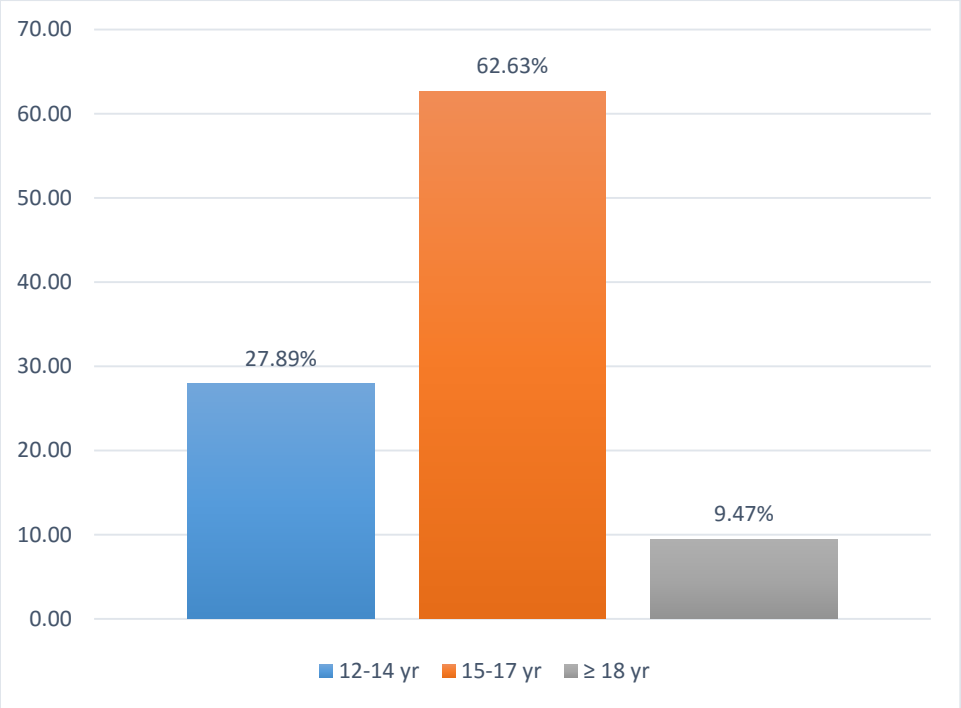


Fig 4.1: Age distribution of students

Majority 62.63% of the students among 380 respondents were in the age group of (15-17) years old and 9.47% students having 18 or more years were participated in this study.

4.2 Number of male and female students

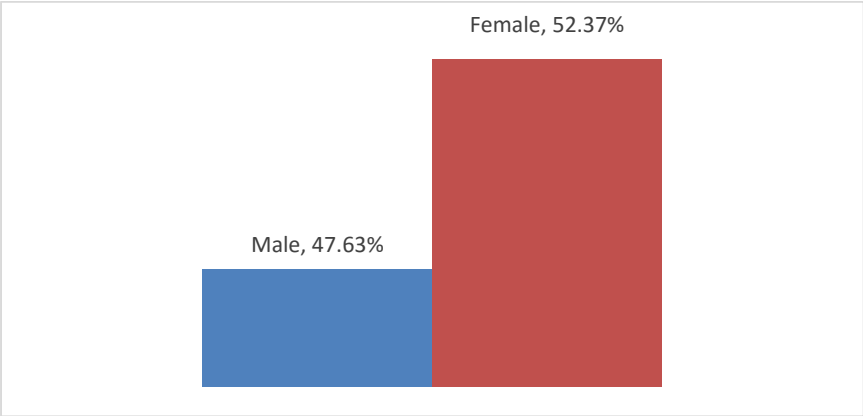


Figure 4.2: Number of male and female students

Around 380 students who are school and college going, 52.37% students are female and 47.63% are male. A graphical value has been shown for that. Here's highest value has shown for female students and lowest value is for male students. We consider here both male and female.

4.3 Educational institution status

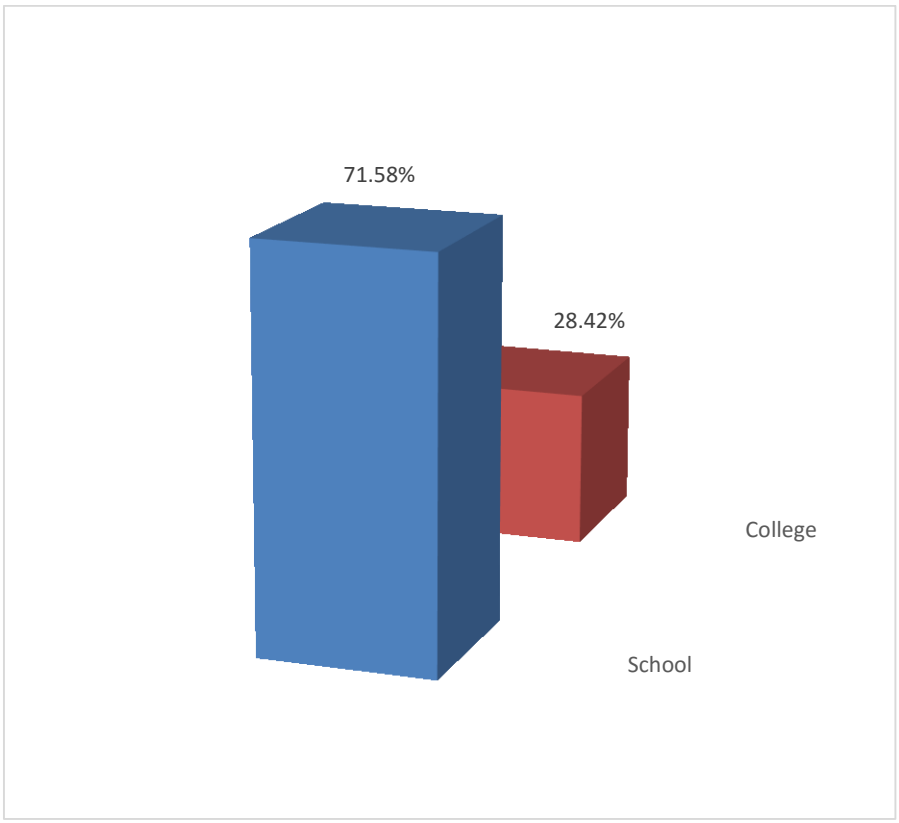


Fig 4.3: Educational institution status

This study was conducted between school and college going students. Majority students about 71.58% were from school and 28.42% students were from college who participated in this study.

4.4 Group Distribution

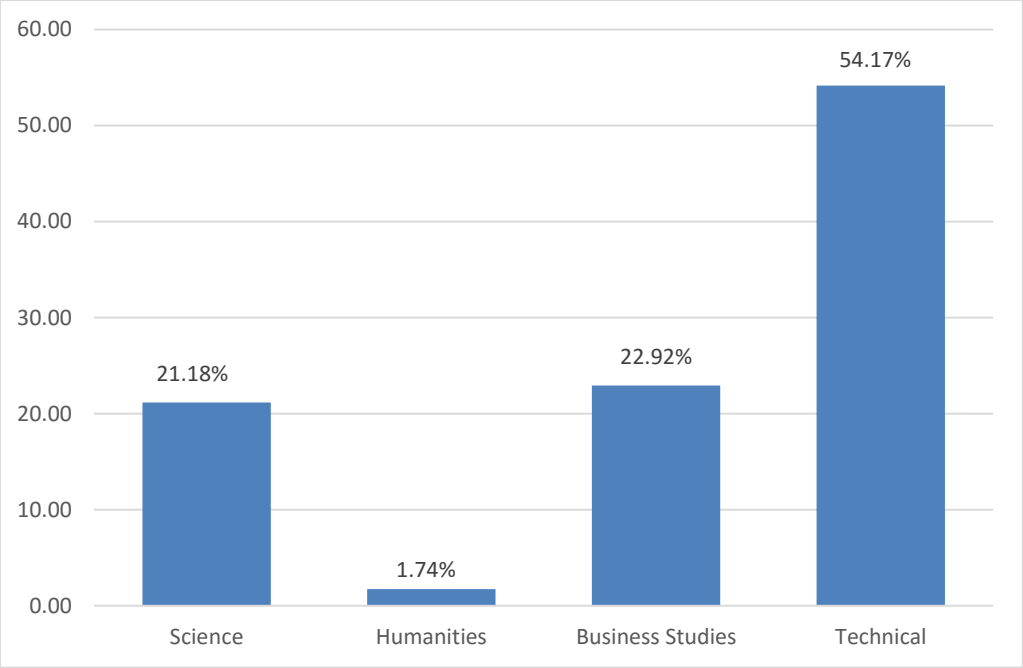


Fig 4.4: Students having different group of class

Among 288 students, majority 54.17% were from technical group, 22.29% from business studies, 21.18% from science, 1.74% were from humanities background. The study was conducted between 380 students but class eight has no groups. So, this graph has shown groups of class nine- twelve.

4.5 Marital status

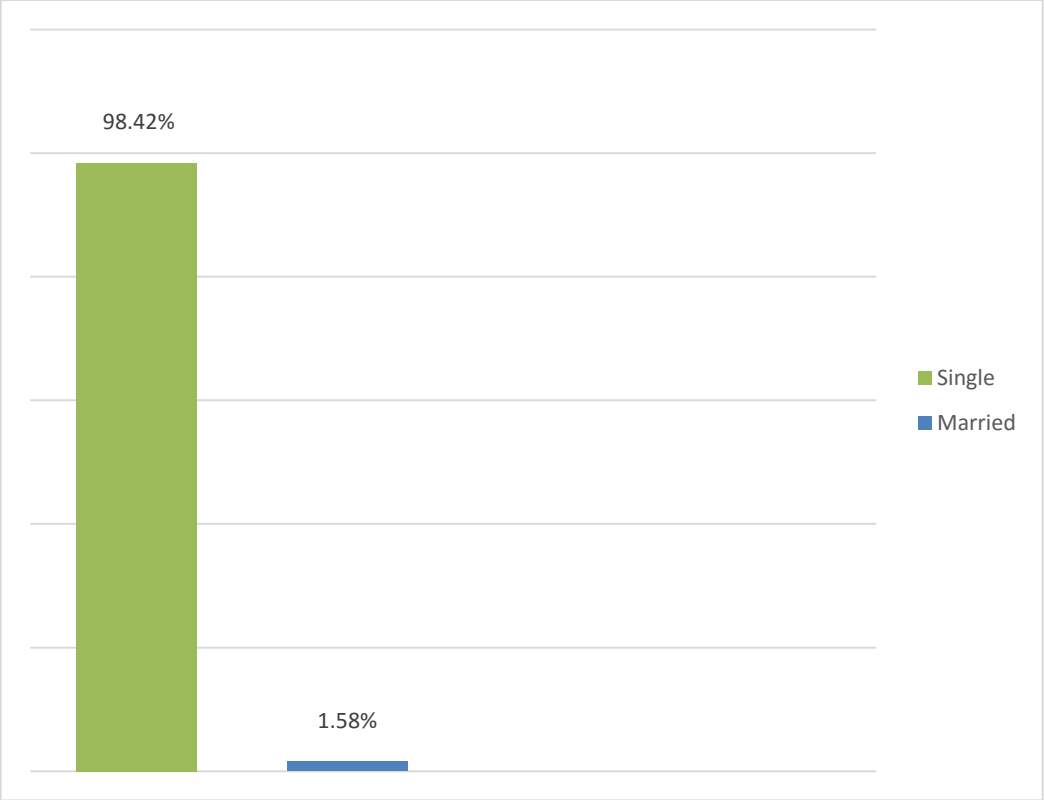


Fig 4.5: Marital status of students

As this study were done between school and college students, majority 98.42% students were single and 1.58% students were married. Here none was separated and widowed.

4.6 Heard about HIV/AIDS

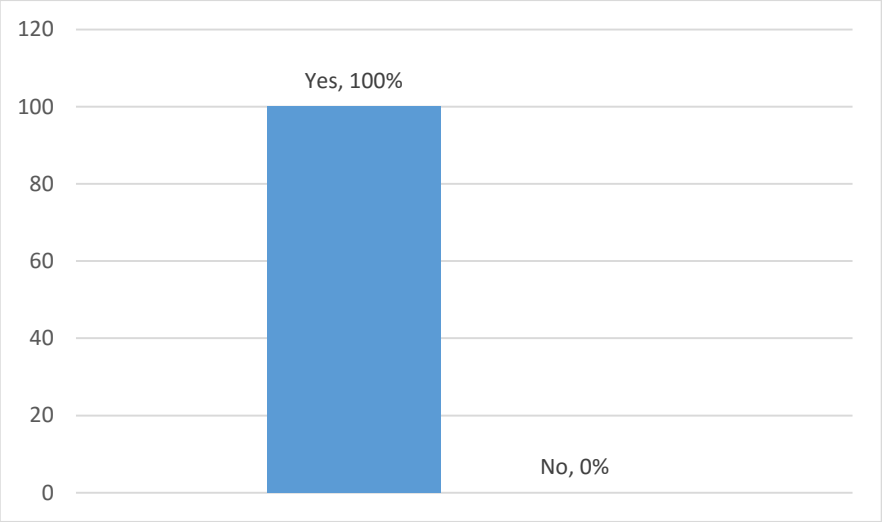


Fig 4.6: Heard about HIV/AIDS

Here almost 100% student have heard about HIV/ AIDS. There was no participant who has not heard about this. The total number of student were 380 and all of them have heard about this.

4.7 Source of knowledge

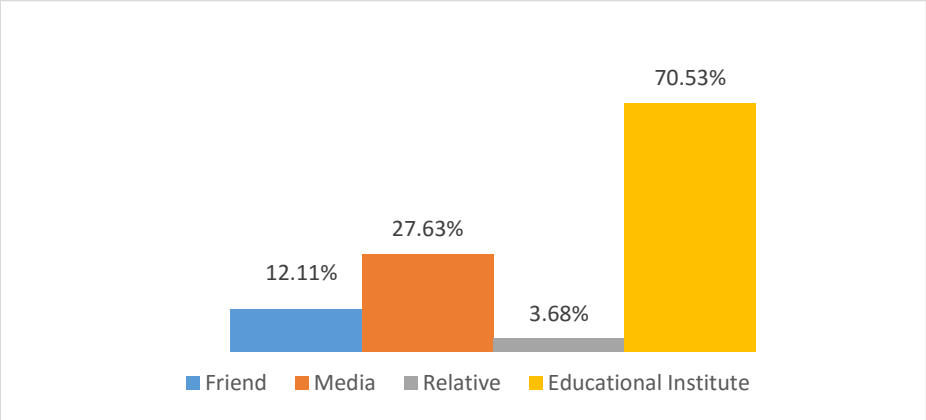


Fig 4.7: Source of knowledge

About 70.55% students were heard about HIV /AIDS from educational institution, 27.63% students have heard it from media, 12.11% from friends and 3.63% from relative. Here

many of the students were given multiple answer that means they heard it from different source.

4.8 Difference between HIV and AIDS

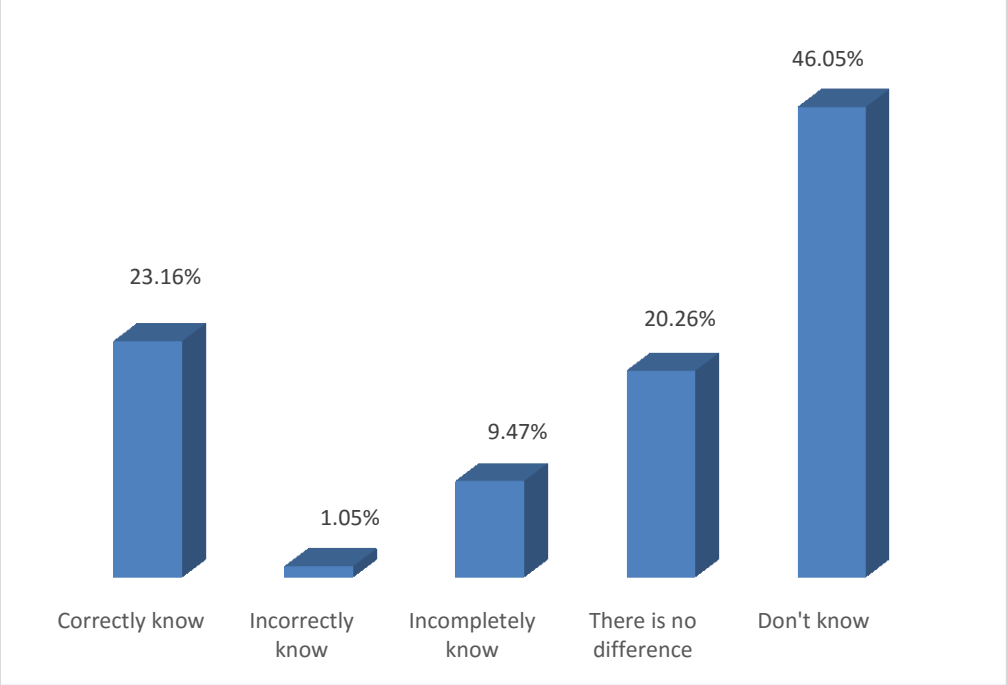


Fig 4.8: Difference between HIV and AIDS

Majority 46.05% students were told that they don't know the difference between HIV and AIDS. There were 23.16% students were correctly know about this thing. About 1.05% students were incorrectly know about the thing.

4.9 Treatable information about AIDS

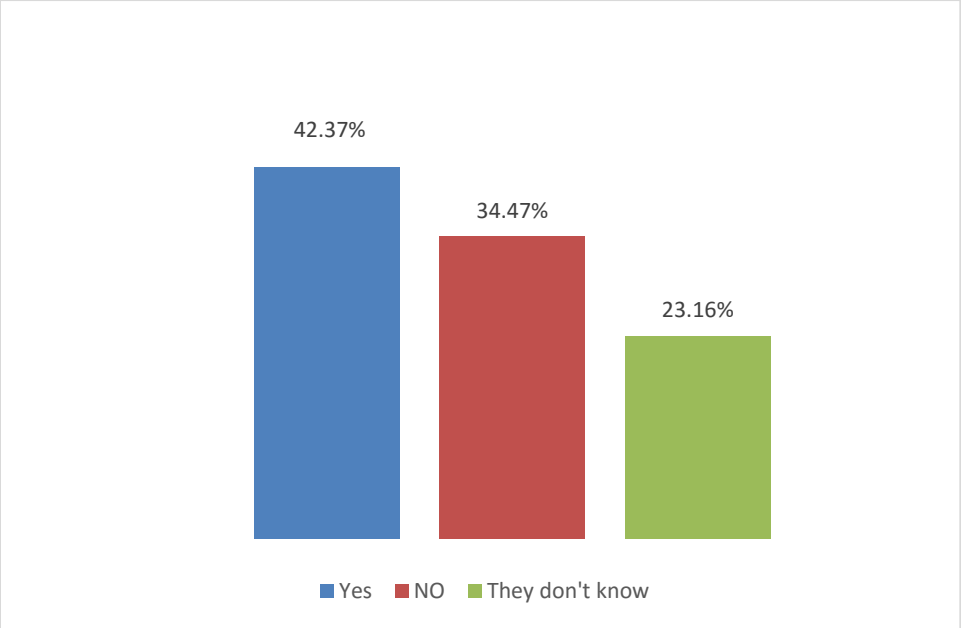


Fig 4.9: Treatable information about AIDS

Those students who were participated in this study around 42.37% students were told that AIDS is treatable and 23.16% students were told that they don’t know about this.

4.10 Vaccine availability

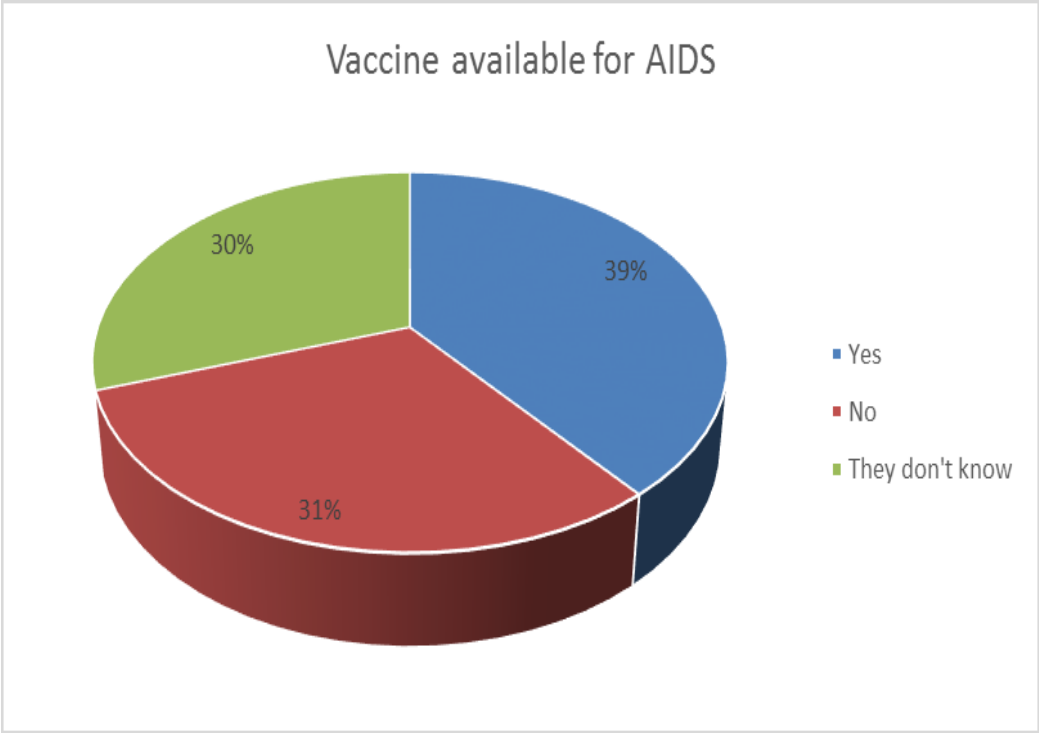
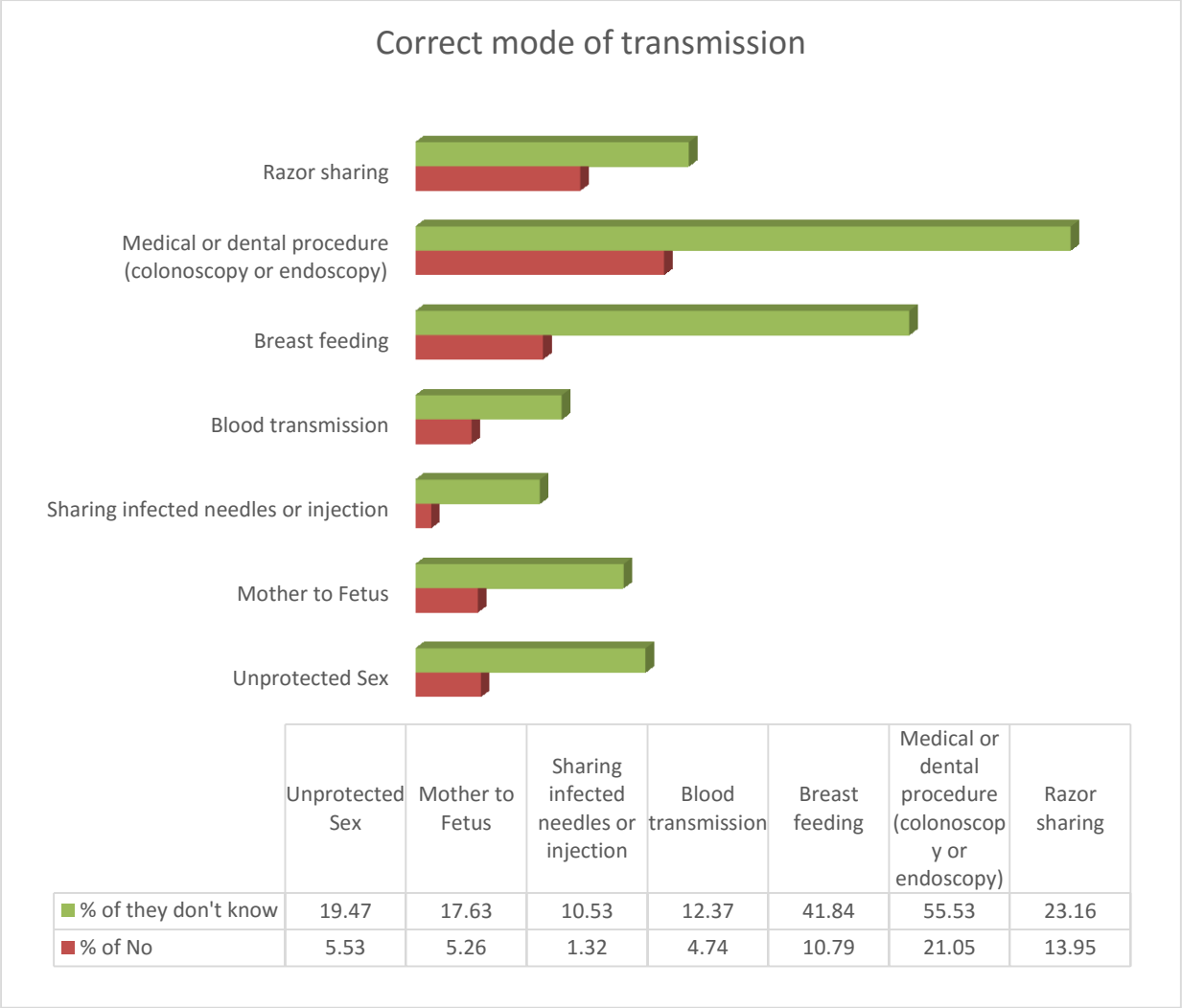


Fig 4.10: Vaccine availability

Among 380 students, majority 39% students were told that vaccine available for AIDS and 30% students were told that there is no vaccine for HIV/ AIDS.

4.11 Correct mode of transmission

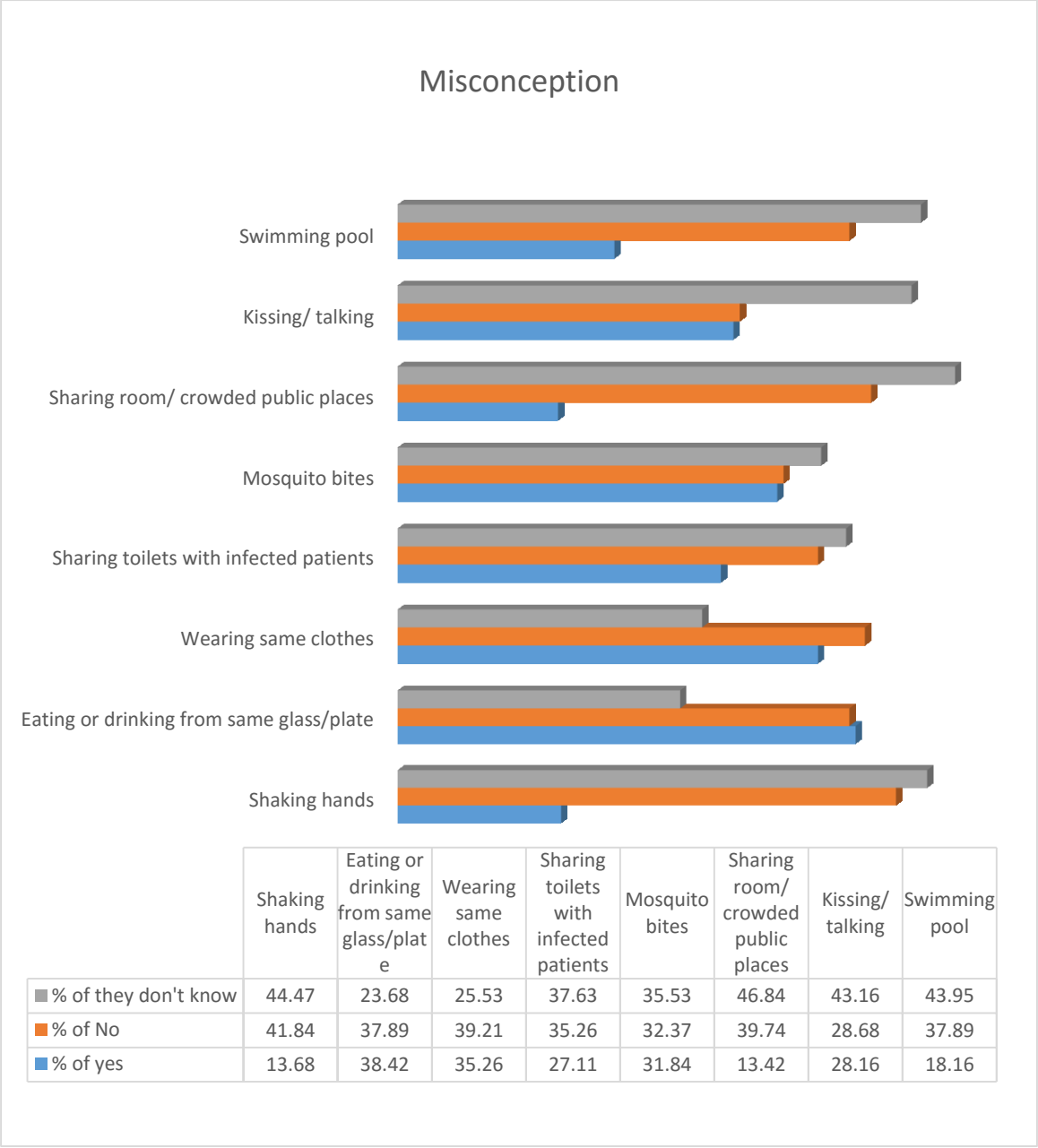


	Unprotected Sex	Mother to Fetus	Sharing infected needles or injection	Blood transmission	Breast feeding	Medical or dental procedure (colonoscopy or endoscopy)	Razor sharing
% of they don't know	19.47	17.63	10.53	12.37	41.84	55.53	23.16
% of No	5.53	5.26	1.32	4.74	10.79	21.05	13.95

Fig 4.11: Correct mode of transmission

Most of the participants 88.16% knew that HIV transmitted through sharing infected needle or injection, 82.89% knew that it is transmitted through blood transmission. Around 23.16% told about it is transmitted through medical or dental procedure.

4.12 Misconception about HIV/ AIDS



	Shaking hands	Eating or drinking from same glass/plate	Wearing same clothes	Sharing toilets with infected patients	Mosquito bites	Sharing room/ crowded public places	Kissing/ talking	Swimming pool
% of they don't know	44.47	23.68	25.53	37.63	35.53	46.84	43.16	43.95
% of No	41.84	37.89	39.21	35.26	32.37	39.74	28.68	37.89
% of yes	13.68	38.42	35.26	27.11	31.84	13.42	28.16	18.16

Fig 4.12: Misconception about HIV/ AIDS

Among 340 students, majority 38.42% students have misconception that AIDS can occur by eating or drinking from same glass or plate and 13.42% participants have told about that it can occur through sharing room or remaining crowded place with patient.

4.13 Mode of prevention

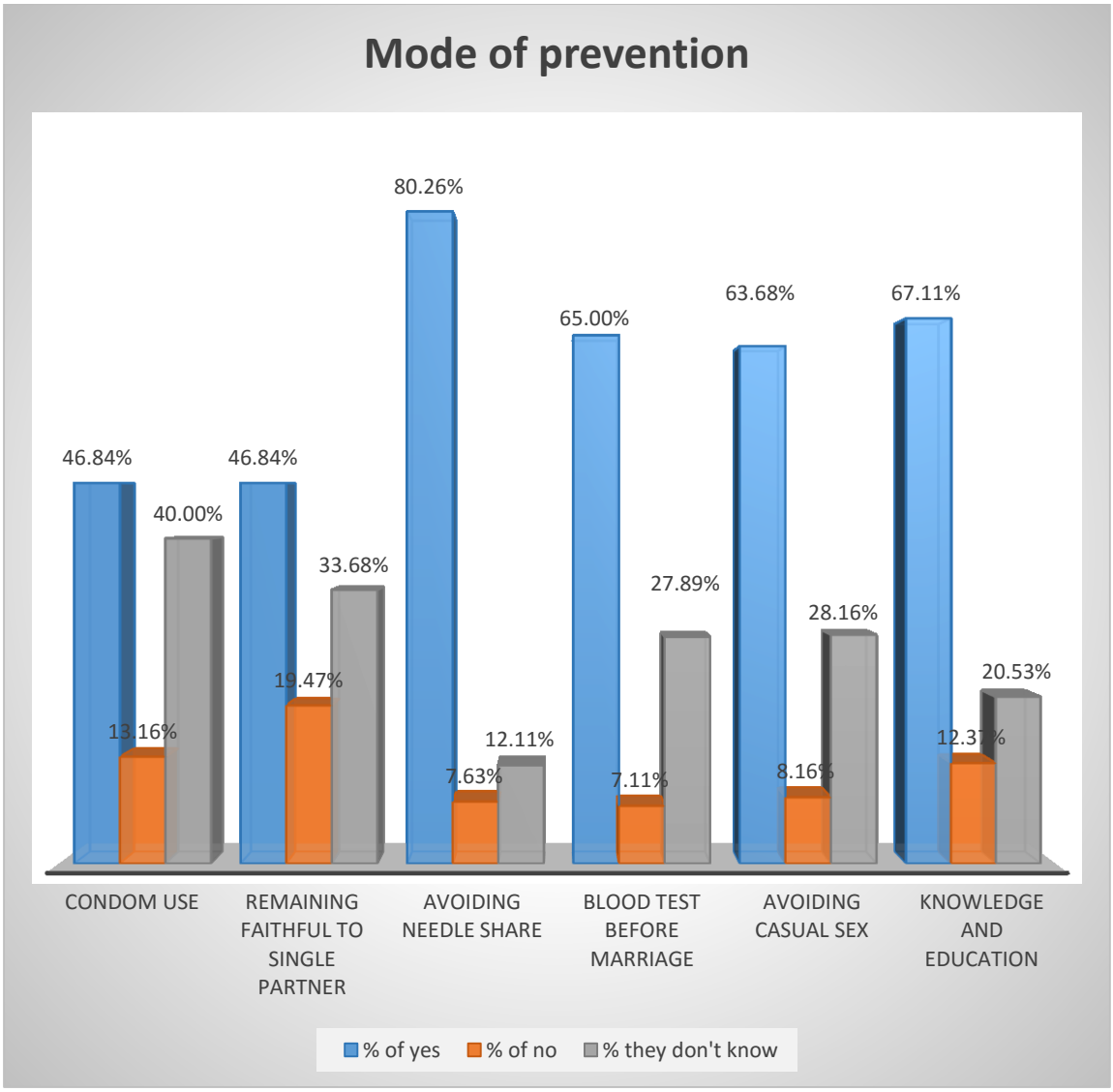


Fig 4.13: Misconception about HIV/ AIDS

Around 80.26% participants in this study have told that avoiding needle share and 46.84% participants have told that condom use and remaining faithful to single partner can be mode of prevention for AIDS.

4.14 Attitude towards AIDS patients

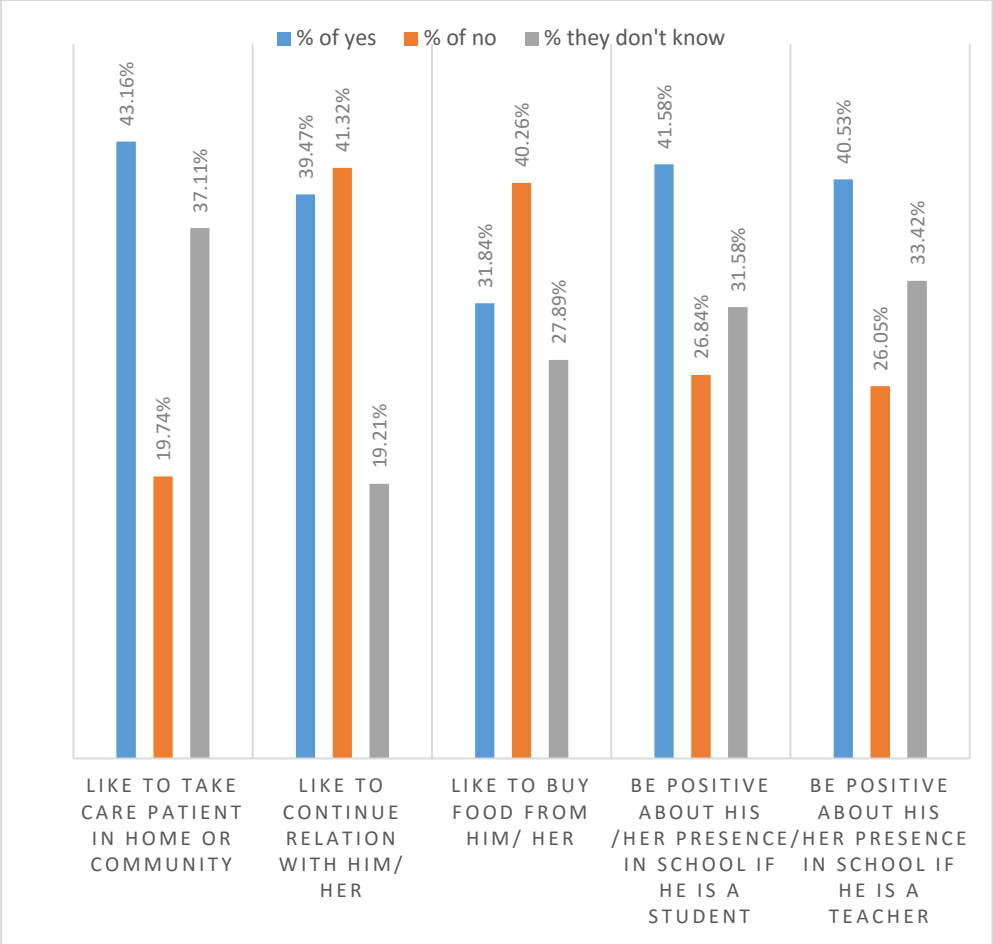


Fig 4.14: Attitude towards AIDS patients

Majority 43.17% participants have told that they would like to take care patient in home or community and 31.84% students have told that they will like to buy food from him/ her (patient).

CHAPTER 5

DISCUSSION

A survey was conducted to know the knowledge about HIV/AIDS among school and college students by using a structured questionnaire. Here the population was 380 and the survey was conducted in Dhaka, Munshigonj, Bramanbaria. Among the respondent, about 62.63% of the students were aged between 15-17 years. Among them 18 years aged or more than students were 9.47%. Our study found that about, 52.37% students are female and 47.63% are male.

A study of awareness done by Lal, *et al*., (2008) about HIV/AIDS among senior secondary school children of Delhi shows that majority of the students (74.9%) belonged to the age group of 15-17 years. The mean age was 15.8 ± 0.8 years. Most of them (60%) were females. Our study has nearly given same observation compare to this study.

Among 380 students, 72% students were in class Eight- Ten and 38% were class Eleven-Twelve. In this study, majority students (98.42%) were single and 1.58% students were married.

The good thing was that all participants in this study had heard about HIV/ AIDS. There were 23.16% students were correctly know about HIV and AIDS. Majority 46.05% students were told that they don't know the difference between HIV and AIDS.

Many of the students were given multiple answer that they heard HIV/AIDS from different source (educational institute, media, relative and friend). In our study about 70.55% students were heard about from educational institution, 27.63% from media, 12.11% from friends and 3.63% from relative had heard it. A study was conducted of knowledge about HIV/AIDS by Gupta *et al.,* (2013) among secondary school students. In this study, majority of the students (85%), the source of information about HIV/AIDS was the television. Compared to this study, our population have heard it from different source.

A study was conducted by Bolla *et al*., (2013) about knowledge regarding HIV/AIDS among secondary school students in Khammam town, Andhra. Around 92.60% of participants had heard of HIV/AIDS, had written correct abbreviation of HIV and AIDS. Nearly 78.90% knew that causative agent of HIV/AIDS as virus. Compared to this study, our result was better because all our participant have heard about HIV/AIDS. But in this study majority of the people correctly knew about HIV/AIDS compared to our study.

Around 42.37% students were mentioned that AIDS is treatable and 23.16% were told that they don't know about this it treatable or not. Majority 39% students said that vaccine is available for AIDS and 30% students told that there is no vaccine for HIV/ AIDS.

Our study had shown that about 88.16% participants knew that HIV transmitted through sharing infected needle or injection. Blood transmission (82.89%), mother to fetus (77.1%), unprotected sex (75%), razor sharing (62.89%), breast feeding (47.37%), medical or dental procedure (23.16%)were mentioned by the respondents A study of awareness about HIV/AIDS by Chand *et al*., (2014) among senior secondary school students of Ghaziabad used a self-administered planned questionnaire. Around 40%, 13%, 15.33%, and 19% of the students identified sexual transmission, mother to child, blood transfusion and unsterilized needles as modes of transmission of HIV infection. Compared to this, our population had better knowledge about HIV/ AIDS.

In this study, avoiding needle share (80.26%), condom use (46.84%), remaining faithful to single partner (46.84%), blood test before marriage (65%), avoided casual sex (63%) and knowledge and education(67.11%) respondent mentioned those can be mode of prevention for AIDS. It's a good thing that a good percentage of respondent had known that sharing needle is a source of getting AIDS.

A study was held in Bangladesh about adolescent knowledge and awareness about HIV/ AIDS and factors affecting them by Rahman *et al*., (2009). Among 3362 female adolescent, one tenth had better knowledge on AIDS in terms of mode of transmission and prevention. About 38.42% students had misconception that AIDS can occur by eating or drinking food from same plate or glass of infected people, wearing same dress (35.26%), mosquito bite (31.84%), kissing or talking (28.16%), sharing toilet (27.11%), swimming pool (18.16%), shaking hands (13.68%), sharing room (13.42%) were also included in their misconception. They had not proper knowledge about this thing.

Around 43.17% participants had told that they would like to take care patient in home or community, wanted continue relation (39.47%), would buy food from him/ her (31.84%), patient's presence as a student were agreed (41.58%), patient's presence as a teacher were agreed (40.53%) participants.

Above this study, it is clear that majority of our population had not knowledge about HIV/ AIDS up to the mark. Their attitude towards the patient is not satisfactory. Our mass media and educational institute are playing very important role of spreading the knowledge about HIV/ AIDS. As it a fatal disease and it has no cure till now so all people should know about the disease properly.

In this survey, it has shown that almost our population had heard the name of HIV/AIDS. Their knowledge level about its transmission and prevention is not up to the mark and their attitude towards AIDS patient is not satisfactory. They should improve their attitude towards the AIDS patients. Useful and successful media campaigns should arrange to educate people regarding the health consequences of STDs including HIV/AIDS. Combined approach of media, educational institute, and government are strongly needed for creating knowledge and awareness to control the spread of HIV and AIDS among young people in Bangladesh. If all should develop better knowledge about this fatal disease, then it will be easy to prevent this. As our country is an overpopulated country, so proper knowledge among people especially young people who are at high risk of getting AIDS is necessary to cope up with this disease.

CHAPTER 6
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