

Knowledge, Attitude and Practices of Salon Workers regarding the Transmission of HIV and HBV in Bangladesh

*A Research Paper to be submitted to the Department of Pharmacy for the
Partial Fulfillment of the Degree of Bachelor of Pharmacy.*

Submitted By

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I, Arif Mahbub, ID: 2013-1-70-024, hereby declare that the dissertation entitled **“Knowledge, Attitude and Practices of Salon Workers Regarding the Transmission of HIV and HBV in Bangladesh”** submitted to the Department of Pharmacy, East West University, in the partial fulfillment of the requirement for the degree of Bachelor of Pharmacy (Honors) is a genuine & authentic research work carried out by me. The contents of this dissertation, in full or in parts, have not been submitted to any other institute or University for the award of any degree or Diploma of Fellowship.

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List of Abbreviations

ARV	Antiretroviral
HIV	Human Immunodeficiency Virus
HBV	Hepatitis B Virus
SIV	Simian Immunodeficiency Virus
DNA	Deoxyribonucleic Acid
RNA	Ribonucleic Acid
NRTI	Nucleoside Reverse Transcriptase Inhibitors
NNRTI	Non-Nucleoside Reverse-Transcriptase Inhibitors
ELISA	Enzyme-Linked Immunosorbent Assay
IAS- USA	International Antiviral Society- USA
In STIs	Integrase Strand Transfer Inhibitor
STI	Sexually Transmitted Disease
ALT	Alanine Transaminase
AST	Aspartate transaminase
HBsAg	Hepatitis B Surface Antigen
HBcAg	Hepatitis B Core Antigen
HBeAg	Hepatitis B e Antigen

Abstract

Not paying attention to sanitization and usage of contaminated tools can lead to viral infections. A salon is a potential place for transmission of deadly blood borne viruses such as HIV or HBV. The hairdressing profession may potentially expose salon workers and their customers to blood-borne infections. So assessment of knowledge, attitudes and practice of salon workers in order to ensure the safety and public health is really essential. The aim of the study was to determine the knowledge, attitudes and practice of salon workers of Bangladesh which is related to different type of blood borne disease as there is strong evidence that razors and other instruments are risk factors for transmission of those diseases. A total of 397 male respondents of Dhaka, Mymensingh, Rangpur, Feni participated in the study. Out of those respondents it was found that all of them have heard about HIV and 81.61% had heard about HBV. Almost all the respondents know that HIV can be transmitted through blood transfusion and needle sharing. In case of HBV almost 80% believes it can be transmitted through blood transfusion and needle sharing. Almost 99% and 79% of respondents stated razor sharing as a way of transmission of HIV and HBV respectively. There were misconceptions about transmission from mother to fetus and through mosquito bite. Majority of the population of about 56.93% knew about the existence of Hepatitis B but only 0.76% of populations were vaccinated for HBV. Most of the respondents reuse their towel and alum. Almost 85% of them change the blade for each customer. Only 5.04% of populations have disposable gloves in their collection but no one uses those gloves after cut. Almost 43% of the respondents possess negative attitude towards the HIV or HBV infected person. The knowledge in case of HIV is quite good but in case of HBV the knowledge is not so good. So vaccination programs must be thrown for HBV. To improve the scenario of Bangladesh special guidance courses and different awareness programs must be arranged.

Keywords - *Knowledge, Attitudes, Practices, salon workers, HIV, HBV.*

Chapter 1

Introduction

1.1 Overview

Nowadays, the spread of communicable diseases has turned into a global problem particularly in emerging countries. The blood-borne viruses, HIV, HBV and HCV, infect hundreds of millions of people worldwide and their continuous spread depends on unsafe use of therapeutic injections, blood transfusions, mother to child transmission, unsafe sexual practices and beauty treatments (tattooing, piercing, manicure, pedicure and barber shop shaving) with instruments which are not properly sterilized. (Amodio *et al.*, 2010)

More than 35 million lives so far were taken by HIV. 1.1 million People died from HIV-related causes globally. An estimated 1.45 million people died of the disease in 2013 – up from less than a million in 1990. (World Health Organization, 2016c)

1989 was the year when Bangladesh found its first HIV affected person. But it was raised in a high percentage that till 2009 the number was twelve thousand. (Unicef, 2009)

About two billion people have been infected with hepatitis B virus (HBV) and about three hundred and fifty million live with chronic infection. An estimated 6 lakh persons die each year due to the acute or chronic consequences of hepatitis B. (Al- Rabeei *et al.*, 2012)

Each year around 2.7 million more people get infected with HIV and an estimate 1.8 million die of AIDS. (Bawany *et al.*, 2014)

It can be said that the equipment of a salon can be a potent source of the transmission of different blood borne viruses like HIV, HBV and HCV. So it is very important to find out the knowledge, attitude and practice of the salon workers who may be the person responsible for the transmission of those viruses.

1.2 HIV

The human immunodeficiency virus (HIV) is a type of virus called a retrovirus, which can infect humans when it comes in contact with tissues that line the vagina, anal area, mouth, or eyes, or through a break in the skin. (MedicineNet.com, 2016b)

It is a virus that attacks the immune system, the body's natural defense system. Without a strong immune system, the body has trouble fighting off disease. Both the virus and the infection it causes are called HIV. (WebMD, 2016)

It can lead to acquired immunodeficiency syndrome, or AIDS. Unlike some other viruses, the human body cannot get rid of HIV. That means that once you have HIV, you have it for life. (CDC.gov, 2016)

1.2.1 Arrival of HIV

Scientists identified a type of chimpanzee in Central Africa as the source of HIV infection in humans. They believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus, or SIV) most likely was transmitted to humans and mutated into HIV when humans hunted these chimpanzees for meat and came into contact with their infected blood. Studies show that HIV may have jumped from apes to humans as far back as the late 1800s. Over decades, the virus slowly spread across Africa and later into other parts of the world. We know that the virus has existed in the United States since at least the mid- to late 1970s. (AIDS.gov, 2016)

1.2.2 Types of HIV

There are two types of HIV:

- HIV-1, which causes almost all the cases of AIDS worldwide
- HIV-2, which causes an AIDS-like illness. HIV-2 infection is uncommon in North America. (WebMD,2016)

1.2.3 Relation Between immune system and HIV

White blood cells are called T-helper cells or CD4 cells. These are important when it comes to having a healthy immune system as they help us fight off diseases and infections. (AVERT, 2016)

HIV attacks the body's immune system, specifically the CD4 cells (T cells), which help the immune system fight off infections. Untreated, HIV reduces the number of CD4 cells (T cells) in the body, making the person more likely to get other infections or infection-related cancers. Over time, 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, the last stage of HIV infection. (CDC.gov, 2016)

1.2.4 Life Cycle of HIV

HIV cannot grow or reproduce on its own. Instead, it makes new copies of itself inside T-helper cells which damages the immune system and gradually weakens our natural defenses. This process of T-helper cells multiplying is called the HIV life cycle. Understanding the HIV life cycle helps scientists to know how to attack the virus when it is weak and reduce the risk of drugs no longer working (drug resistance). This happens when drugs fail to prevent the virus from multiplying.

1.2.4.1 Stages of the HIV life cycle

Binding and fusion

First, the HIV virus attaches itself to a T-helper cell. The spikes on the surface of the HIV particle stick to the cell and allow them to join together. The contents of the HIV particle are then released into the cell.

The types of drugs that can stop this part of the process are called Fusion or Entry Inhibitors.

Reverse transcription and integration

Once inside the cell, HIV changes its genetic material (called HIV RNA) into HIV DNA by using an enzyme called reverse transcriptase. HIV DNA can then enter the DNA in the nucleus of the T-helper cell and control it.

The types of drugs that can stop this part of the process are called NRTIs, NNRTIs and Integrase Inhibitors.

Transcription and translation

The HIV DNA then makes long strands of messenger RNA proteins, and transports them towards the edge of the cell. This is then used for producing more HIV.

Assembly, budding and maturation

Copies of HIV genetic material are contained among the strands of messenger RNA. These form new HIV particles, which are then released from the T-helper cell. These are then ready to infect other cells and begin the process all over again.

The types of drugs that can stop this part of the process are called Protease Inhibitors. (AVERT, 2016)

1.2.5 Transmission of HIV

1.2.5.1 Conveyer of HIV

HIV lives in the following bodily fluids of an infected person:

- Blood
- Semen and pre-seminal fluid
- Rectal fluids/anal mucous
- Vaginal fluids
- Breast milk

The spread of HIV can occur when these secretions come in contact with tissues such as those lining the vagina, anal area, mouth, eyes (the mucus membranes), or with a break in the skin, such as from a cut or puncture.

1.2.5.2 Mode of Transmission of HIV

Sexual Transmission

It can be transmitted from men to men, men to women, women to men, and women to women through vaginal, anal, and oral sex.

Transmission through Needles Sharing

The spread of HIV by exposure to infected blood usually results from sharing needles, as in those used for illicit drugs. HIV also can be spread by sharing needles for anabolic steroids to increase muscle, tattooing, and body piercing.

Transmission through Blood Transfusion

HIV can be transmitted to a person if one takes the blood of an infected person. This is the reason why blood testing is necessary.

Transmission through Razor Sharing

If a cut occurs during the use of razor in an infected person and that blood goes to the body fluid of someone else then the latter will be affected by HIV.

Transmission from Mother to Fetus

HIV will be transmitted from an infected mother's body fluid to the fetus as there is connection between them.

Transmission through Breast Feeding

One baby will also get affected by HIV by drinking the mother's milk if that mother is infected.

1.2.5.3 Misconceptions on the Mode of Transmission

Some people possess some misconceptions about the transmission ways of HIV. They should learn that HIV does not transmitted through-

- Touching someone who has HIV as it cannot survive outside of the body
 - Sweat, tears, urine or feces of someone who has HIV
 - Insects (such as a mosquito)
 - coughing, sneezing as HIV cannot survive outside of the body
 - Baths and shower areas
 - Toilet seats, tables, door handles as HIV does not survive on surfaces
 - Eating from same plate
 - Kissing
- (AVERT, 2016)

1.2.6 Symptoms of the existence HIV

HIV may not cause symptoms early on. People who do have symptoms may mistake them for the flu or mono. Common early symptoms include:

- Fever
- Sore throat
- Headache

- Muscle aches and joint pain
- Swollen glands (swollen lymph nodes)
- Skin rash

Symptoms may appear from a few days to several weeks after a person is first infected. The early symptoms usually go away within 2 to 3 weeks.

After the early symptoms go away, an infected person may not have symptoms again for many years. After a certain point, symptoms reappear and then remain. These symptoms usually include:

- Swollen lymph nodes.
- Extreme tiredness.
- Weight loss.
- Fever.
- Night sweats.

1.2.7 Diagnosis of HIV

A doctor may suspect HIV if symptoms last and no other cause can be found. If people have been exposed to HIV, their immune system will make antibodies to try to destroy the virus. Doctors use tests to find these antibodies in urine, saliva, or blood.

If a test on urine or saliva shows that one is infected with HIV, he or she will probably have a blood test to confirm the results.

Most doctors use two blood tests, called the ELISA and the Western blot. If the ELISA is positive (meaning that HIV antibodies are found), a Western blot or other test will be done to be sure.

You can get HIV testing in most doctors' offices, public health clinics, hospitals, and Planned Parenthood clinics. You can also buy a home HIV test kit in a drugstore or by mail order. Make sure it's one that is approved by the Food and Drug Administration

(FDA). If a home test is positive, see a doctor to have the result confirmed and to find out what to do next. (WebMD, 2016)

1.2.8 Laboratory Tests for Monitoring HIV-infected people

Two blood tests are routinely used to monitor HIV-infected people. One of these tests, which counts the number of CD4 cells, assesses the status of the immune system. The other test, which determines the so-called viral load, directly measures the amount of virus in the blood.

1.2.8.1 Determination of CD4 Cells

In individuals not infected with HIV, the CD4 count in the blood is normally above 400 cells per mm³ of blood. People generally do not become at risk for HIV-specific complications until their CD4 cells are fewer than 200 cells per mm³. At this level of CD4 cells, the immune system does not function adequately and is considered severely suppressed. A declining number of CD4 cells means that HIV disease is advancing. Thus, a low CD4 cell count signals that the person is at risk for one of the many opportunistic infections that occur in individuals who are immunosuppressed. In addition, the actual CD4 cell count indicates which specific therapies should be initiated to prevent those infections.

1.2.8.2 Determination of Viral Load

The viral load actually measures the amount of virus in the blood and may partially predict whether or not the CD4 cells will decline in the coming months. In other words, those people with high viral loads are more likely to experience a decline in CD4 cells and progression of disease than those with lower viral loads. In addition, the viral load is a vital tool for monitoring the effectiveness of new therapies and determining when drugs are and are not working. Thus, the viral load will decrease within weeks of initiating an effective antiviral regimen. If a combination of drugs is very potent, the number of HIV copies in the blood will decrease by as much as hundredfold, such as from 100,000 to 1,000 copies per mL of blood in the first two weeks and gradually decrease even further during the ensuing 12-24 weeks. The ultimate goal is to get viral loads to below the limits of detection by standard assays, usually less than 20 to 50 copies per mL of blood. When viral loads are reduced to these low levels, it is believed that the viral suppression will persist for many years as long as the patient consistently takes their medications.

1.2.8.3 Drug-resistance testing

Drug-resistance testing also has become a key tool in the management of HIV-infected individuals. Clearly, resistance testing is now routinely used in individuals experiencing poor responses to HIV therapy or treatment failure. In general, a poor response to initial treatment would include individuals who fail to experience a decline in viral load of approximately hundredfold in the first weeks. International Antiviral Society-USA (IAS-USA) have suggested that resistance testing be performed in individuals who have never been on therapy to determine if they might have acquired HIV that is resistant to drugs. (MedicineNet.com, 2016a)

1.2.9 Treatment and Medication of HIV

First of all, there is no evidence that people infected with HIV can be cured by the currently available therapies. The standard treatment for HIV is a combination of medicines called antiretroviral therapy, or ART. Antiretroviral medicines slow the rate at which the virus multiplies. (WebMD, 2016)

Different medications of different class of drugs can be used too.

Table 1.1: List of drugs of HIV

Class of Drug	Examples
NRTIs	Lamivudine, Emtricitabine
NNRTIs	Nevirapine, Delavirdine, Efavirenz
InSTIs	Raltegravir, Elvitegravir
PIs	Indinavir, Ritonavir

(MedicineNet.com, 2016a)

1.2.9.1 Factors that should be considered before starting antiviral therapy

Until very recently, one of the biggest questions related to the management of HIV disease was the optimal time to start antiviral treatment. For some time, there had been very strong data demonstrating that therapy is appropriate for those with CD4 cells less than 350 cells/mm³ in the blood. There are now several very large studies that have shifted all guidelines around the world to recommending treatment of all HIV-infected

individuals at the time of diagnosis no matter what the CD4 cell count. Regardless, prior to initiating antiviral therapy, everything possible should be done to ensure that the patient is committed to the treatment, able to adhere to the regimen, and will follow up with his or her health-care professional to assess whether medications are tolerated and working. (MedicineNet.com, 2016a)

1.2.9.2 Initial Therapy for HIV

Antiviral treatment options have primarily included combinations of two NRTIs, often referred to as "nucs," and a third drug, typically being a boosted PI, a NNRTI, often called "non-nucs, and InSTIs. Many of these drugs are available in fixed-dose combinations and now five options as single-tablet regimens.

1.2.9.3 Treatment for HIV during Pregnancy

One of the greatest advances in the management of HIV infection has been in pregnant women. Prior to antiviral therapy, the risk of HIV transmission from an infected mother to her newborn was approximately 25%-35%. The first major advance in this area came with studies giving zidovudine after the first trimester of pregnancy, then intravenously during the delivery process, and then after delivery to the newborn for six weeks. This treatment showed a reduction in the risk of transmission to less than 10%.

1.2.10 Side effects of HIV therapy

There are many potential side effects associated with antiviral therapies. Some of them are given below-

For NRTIs-

- Most NRTIs can cause mild nausea and loose stools. In general, these symptoms resolve with time.
- Decreased production of blood cells by the bone marrow, most often causing anemia, and occasionally hyperpigmentation (most often of the nails).
- Damage nerves and cause peripheral neuropathy.
- pancreatitis
- Hypersensitivity reaction during the first two to six weeks of therapy
- Lactic acidosis (a serious condition in which lactic acid accumulates in the blood)

For NNRTIs-

- Rash, typically occurring during the first weeks of therapy.
- Dizziness
- Confusion
- Fatigue

For PIs-

- Nausea and diarrhea
- Lipodystrophy
- Elevations in blood sugar levels

For InSTIs-

- Muscle Pain
- Depression
- Mild headache
- Insomnia

1.2.11 Prevention of HIV

HIV is often spread by people who don't know they have it. So it's always important to protect yourself and others by taking these steps:

- Practice of safer sex by using a condom every time having sex (including oral sex) until make sure that the partners aren't infected with HIV or other sexually transmitted infection (STI).
- Not having more than one sex partner at a time.
- Talking with partner before having sex for the first time and finding out if he or she is at risk for HIV. Get tested together. Getting tested again at 6, 12, and 24 weeks after the first test can be done to be sure neither of them are infected. Using condoms in the meantime.
- Avoid drinking a lot of alcohol or using illegal drugs before sex as people may let down their guard and not practice safer sex.

- Not sharing personal items such as toothbrushes or razors.
- Never share needles or syringes with anyone.
- If anyone is at high risk for getting infected with HIV, he\ she can take anti-retroviral medicine to help protect themselves from HIV infection.

Experts may recommend this for:

- People whose sexual practices put them at high risk for HIV infection, such as men who have sex with men and people who have many sex partners.
- People who inject illegal drugs, especially if they share needles.
- Adults who have a sex partner with HIV.

To keep the risk low, people still need to practice safer sex even while they are taking the medicine. (WebMD, 2016)

1.3 HBV

The hepatitis B virus (HBV) is a small DNA virus with unusual features similar to retroviruses. It is a prototype virus of the Hepadnaviridae family. Related viruses are found in woodchucks, ground squirrels, tree squirrels, Peking ducks, and herons. (NCBI, 2016)

Hepatitis B prevalence is highest in sub-Saharan Africa and East Asia, where between 5–10% of the adult population is chronically infected. High rates of chronic infections are also found in the Amazon and the southern parts of eastern and central Europe. In the Middle East and the Indian subcontinent, an estimated 2–5% of the general population is chronically infected. Less than 1% of the population of Western Europe and North America is chronically infected. (World Health Organization, 2016a)

1.3.1 Type of Hepatitis B

It can be of two types-

- Acute Hepatitis B
- Chronic Hepatitis B

1.3.1.1 Acute Hepatitis B

About two-thirds of patients with acute HBV infection have a mild, asymptomatic and subclinical illness that usually goes undetected. Approximately one-third of adults with acute HBV infection develop clinical symptoms and signs of hepatitis, which range from mild constitutional symptoms of fatigue and nausea, to more marked symptoms and jaundice, and rarely to acute liver failure. Acute liver failure occurs in approximately 1% of patients with acute hepatitis B and jaundice. Patients with acute liver failure due to hepatitis B require careful management and monitoring and should be referred rapidly to a tertiary medical center with the availability of liver transplantation.

1.3.1.2 Chronic Hepatitis B

Chronic hepatitis B has a variable and dynamic course. The overall prognosis of patients with chronic hepatitis is directly related to the severity of disease. For those with severe chronic hepatitis and cirrhosis, the 5-year survival rate is about 50%. Among patients with evidence of chronic hepatitis may have nonspecific symptoms, such as fatigue and mild right upper quadrant discomfort. Patients with more severe disease or cirrhosis may have significant constitutional symptoms, jaundice, and peripheral stigmata of end-stage liver disease including spider angiomas, palmar erythema, splenomegaly, gynecomastia, and fetor hepaticus. Ascites, peripheral edema, encephalopathy, and gastrointestinal bleeding are seen in patients with more advanced cirrhosis. ALT and AST are often elevated but may not correlate well with severity of liver disease. Bilirubin, prothrombin time, and albumin often become abnormal with progressive disease. Decreasing platelet count is often a poor prognostic sign.

1.3.2 Mechanism of Affecting Liver

The hepatitis B virus reproduces in liver cells, but the virus itself is not the direct cause of damage to the liver. Rather, the presence of the virus triggers an immune response from the body as the body tries to eliminate the virus and recover from the infection. This immune response causes inflammation and may seriously injure liver cells. Therefore, there is a balance between the protective and destructive effects of the immune response to the hepatitis B virus. (MedicineNet.com, 2016c)

1.3.3 Transmission of HBV

The hepatitis B virus can survive outside the body for at least 7 days. During this time, the virus can still cause infection if it enters the body of a person who is not protected by the vaccine.

- In highly endemic areas, hepatitis B is most commonly spread from mother to child at birth (perinatal transmission).
- Hepatitis B is also spread by percutaneous or mucosal exposure to infected blood and various body fluids.
- Sexual transmission of hepatitis B may occur, particularly in unvaccinated men who have sex with affected women.
- Transmission of the virus may also occur through the reuse of needles and syringes either in health-care settings or among persons who inject drugs.
- Transmission of the virus may also occur through the reuse of razor

1.3.4 Symptoms of HBV

Symptoms may include:

- weakness
- fatigue
- loss of appetite
- weight loss
- breast enlargement in men
- a rash on the palms
- difficulty with blood clotting, and
- Spider-like blood vessels on the skin.

Decreased absorption of vitamins A and D can cause impaired vision at night and thinning of bones (osteoporosis). Patients with liver cirrhosis also are at risk of infections because the liver plays an important role in the immune system.

Inflammation from chronic hepatitis B can progress to cirrhosis (severe scarring) of the liver. Significant amounts of scarring and cirrhosis lead to liver dysfunction.

1.3.5 Advanced cirrhosis of the liver due to hepatitis B

In patients with advanced cirrhosis, the liver begins to fail. This is life-threatening condition.

Several complications occur in advanced cirrhosis:

- Confusion and even coma (encephalopathy) results from the inability of the liver to detoxify certain toxic substances.
- Increased pressure in the blood vessels of the liver (portal hypertension) causes fluid to build up in the abdominal cavity (ascites) and may result in engorged veins in the swallowing tube (esophageal varices) that tear easily and may cause massive bleeding.
- Portal hypertension can also cause kidney failure or an enlarged spleen resulting in a decrease of blood cells and the development of anemia, increased risk of infection and bleeding.
- In advanced cirrhosis, liver failure also results in decreased production of clotting factors. This causes abnormalities in blood clotting and sometimes spontaneous bleeding.
- Patients with advanced cirrhosis often develop jaundice because the damaged liver is unable to eliminate a yellow compound, called bilirubin.

1.3.6 Hepatitis B virus and primary liver cancer (hepatocellular carcinoma)

Patients with chronic hepatitis B are at risk of developing liver cancer. The way in which the cancer develops is not fully understood. Symptoms of liver cancer are nonspecific. Patients may have no symptoms, or they may experience abdominal pain and swelling, an enlarged liver, weight loss, and fever. The most useful diagnostic screening tests for liver

cancer are a blood test for a protein produced by the cancer called alpha-fetoprotein and an ultrasound imaging study of the liver. These two tests are used to screen patients with chronic hepatitis B, especially if they have cirrhosis or a family history of liver cancer.

1.3.7 Diagnosis of Hepatitis B

Infection with hepatitis B is suspected when the medical history and the physical examination reveal risk factors for the infection or symptoms and signs that are suggestive of hepatitis B. Abnormalities in the liver tests (blood tests) also can raise suspicion; however, abnormal liver tests can result from many conditions that affect the liver. The diagnosis of hepatitis B can be made only with specific hepatitis B virus blood tests. These tests are known as hepatitis 'markers' or 'serologies.'

Markers found in the blood can confirm hepatitis B infection and differentiate acute from chronic infection. These markers are substances produced by the hepatitis B virus (antigens) and antibodies produced by the immune system to fight the virus. Hepatitis B virus has three antigens for which there are commonly-used tests - the surface antigen (HBsAg), the core antigen (HBcAg) and the e antigen (HBeAg).

The presence of hepatitis B surface antigen (HBsAg) in the blood indicates that the patient is currently infected with the virus. HBsAg appears an average of four weeks after initial exposure to the virus.

1.3.8 Role of a liver biopsy in chronic hepatitis B

During a liver biopsy, a small sample of liver tissue is collected and examined under the microscope. This test is valuable because this sample reflects the health of the liver. It can show the amount of liver injury (inflammation or cirrhosis). Liver biopsy is not routinely needed to diagnose hepatitis B, but it is used for monitoring the progression of liver damage in people with chronic hepatitis and helping to choose or evaluate treatment options.

1.3.9 Medications and Treatments of Hepatitis B

1.3.9.1 Acute infection

Acute infection with hepatitis B usually does not require treatment. In rare cases, however, the infection may cause life-threatening liver failure. Patients with liver failure due to acute hepatitis B should be evaluated for liver transplantation.

1.3.9.2 Chronic infection

If a person is chronically infected with hepatitis B and has few signs or symptoms of complications, medications usually are not used. These patients are watched carefully and given periodic blood tests. One test measures the 'viral load,' that is, the amount of viral DNA in the blood. Doctors will recommend treatment if there are signs that the virus is beginning to cause damage or if the viral load is high. Another reason to prescribe medication is if the patient has a positive test for the Hepatitis B e-antigen (HBeAg) in the blood. HBeAg is associated with an increased risk of progression of liver disease and its complications. In chronic hepatitis B, the goal of treatment is to reduce the risk of complications including cirrhosis and liver failure.

Medications can reduce the number of viruses in the body and may be able to eliminate the virus from the bloodstream. Logically, this should lead to them having a low rate of progression to cirrhosis.

The medications in current use for chronic hepatitis B include the interferon and nucleoside/nucleotide analogues. New agents are being developed although they are still under investigation and considered experimental. (World Health Organization, 2016a)

1.3.9.3 Interferon

Interferon-alpha has been used to treat hepatitis B for more than 20 years. Interferon-alpha is a naturally occurring protein that is made in the body by white blood cells to combat viral infections. In addition to its direct anti-viral effects, interferon works against the hepatitis B virus by stimulating the body's immune system to clear the virus.

1.3.9.4 Side Effects of Interferon

Interferon causes several side effects including:

- Fatigue, generalized muscle aches, fever, chills and loss of appetite. These flu-like symptoms occur in approximately 80% of treated patients
- Mood swings, depression, anxiety and other neuropsychiatric effects may occur
- Thyroid gland abnormalities resulting in hypothyroidism (too little thyroid hormone)
- Significant suppression of the bone marrow and production of blood cells
- Infection
- Hair loss may occur.

The side effects may be severe enough that the patient is unable to continue treatment.

1.3.9.5 Nucleoside/nucleotide analogues

Nucleoside/nucleotide analogues (NAs) are man-made chemicals that mimic the nucleosides and nucleotides that are used for making DNA. When the virus tries to use the analogues to make its own DNA, it is unable to make the DNA and, therefore, cannot reproduce. Examples of these agents include adefovir, entecavir, lamivudine, telbivudine and tenofovir. Unfortunately, the hepatitis B virus may become resistant to NAs over time.

1.3.10 Effects of Alcohol on Hepatitis B

Agents that damage the liver are particularly harmful in patients who already have hepatitis B. For this reason, it is recommended that people with hepatitis B avoid drinking alcohol.

1.3.11 Prevention of Hepatitis B

The hepatitis B vaccine is the mainstay of hepatitis B prevention. WHO recommends that all infants receive the hepatitis B vaccine as soon as possible after birth, preferably within 24 hours. The birth dose should be followed by 2 or 3 doses to complete the primary series. In most cases, 1 of the following 2 options is considered appropriate:

- A 3-dose schedule of hepatitis B vaccine, with the first dose (monovalent) being given at birth and the second and third (monovalent or combined vaccine) given at the same time as the first and third doses of diphtheria, pertussis (whooping cough), and tetanus – (DTP) vaccine; or
- A 4-dose schedule, where a monovalent birth dose is followed by three monovalent or combined vaccine doses, usually given with other routine infant vaccines.

The complete vaccine series induces protective antibody levels in more than 95% of infants, children and young adults. Protection lasts at least 20 years and is probably lifelong. Thus, WHO does not recommend booster vaccination for persons who have completed the 3 dose vaccination schedule.

All children and adolescents younger than 18 years-old and not previously vaccinated should receive the vaccine if they live in countries where there is low or intermediate endemicity. In those settings it is possible that more people in high-risk groups may acquire the infection and they should also be vaccinated. They include:

- People who frequently require blood or blood products, dialysis patients, recipients of solid organ transplantations;
- People interned in prisons;
- Persons who inject drugs;
- Household and sexual contacts of people with chronic HBV infection;
- People with multiple sexual partners;
- Health-care workers and others who may be exposed to blood and blood products through their work; and
- Travellers who have not completed their hepatitis B vaccination series, who should be offered the vaccine before leaving for endemic areas. (World Health Organization, 2016b)

1.3.12 Effectiveness of Vaccine

The hepatitis B vaccine contains a protein that stimulates the body to make protective antibodies. Hepatitis B vaccines are effective and safe. Up to 95% of vaccinated individuals form effective antibodies and are protected from hepatitis B when they get full three-dose series of vaccine. Side effects from the vaccine are usually mild and include soreness at the site of injection. The risk of serious allergic reactions (anaphylaxis) is less than one per million doses. (MedicineNet.com, 2016c)

1.4 WHO Response

There is no cure for HIV infection. However, effective antiretroviral (ARV) drugs can control the virus and help prevent transmission so that people with HIV, and those at substantial risk, can enjoy healthy, long and productive lives. By mid-2016, 18.2 (16.1–19.0) million people living with HIV were receiving antiretroviral therapy (ART) globally. Between 2000 and 2015, new HIV infections fell by 35%, AIDS-related deaths fell by 28% with some 8 million lives saved. This achievement was the result of great efforts by national HIV programs supported by civil society and a range of development partners. Expanding ART to all people living with HIV and expanding prevention choices can help avert 21 million AIDS-related deaths and 28 million new infections by 2030.

In May 2016, at the World Health Assembly, 194 governments adopted the first-ever Global Health Sector Strategy on viral hepatitis and agreed to the first-ever global targets. The strategy includes a target to treat 8 million people for hepatitis B by 2020. The longer term aim is to reduce new viral hepatitis infections by 90% and to reduce the number of deaths due to viral hepatitis by 65% by 2030 from 2016 figures. (World Health Organization, 2016b)

Chapter 2

Literature

Review

The hairdressing trade may potentially expose its practitioners and their customers to blood-borne infections. Most of hairdressers (93.3%) knew that HIV and hepatitis are transmitted through parenteral route and could also be transmitted by razors. The availability of gloves was inadequate, up to 30% of the participants never used them and up to 50% usually reused them. In total, 90 respondents stated to perform a sterilization process of the cutting instruments by ultraviolet light, but only 70 sterilized the articles between two customers and only 34.3% executed a daily disinfection of the hair brushes. Statistical analysis showed that younger age and post-primary school instruction were significantly associated with knowledge and procedures that could prevent transmission of blood-borne virus ($P = 0.01$ and $P < 0.01$, respectively). Moreover, only 32 hairdressers agreed to participate to a free specific course on occupational risk offered by the University of Palermo. Although the level of awareness among hairdressers about HIV, hepatitis and risk of transmission was good, there were some unsafe practices that may lead to infections due to blood-borne viruses. The present article highlights the need to improve specific health messages in media campaigns carried out to general population, diffusing more appropriate educational materials for salons and organizing obligatory refresher courses for the hairdressing sector. (Amodio *et al.*, 2010)

The seroprevalence of hepatitis B (HBV) and hepatitis C virus (HCV) infection in barbers and to assess the awareness of these employees related to occupational risks of HBV and HCV. 2145 barbers in Izmir were given an occupational safety seminar. Blood samples were collected from 2066 voluntary participants and 1284 individuals completed the questionnaires. Sera were tested for the presence of HBV and HCV markers by ELISA. Our results document low levels of knowledge about HBV and HCV infection, risk perception and adequate protection among participants before the seminar session. Of the participants, 63.5% reported that they had suffered from equipment-related injuries during the last month. The prevalence of HBsAg positive and anti-HCV individuals of the 2066 person was found to be 2.2% and 0.4%, respectively. Hairdressers' knowledge of HBV, HCV and health hazards associated with their profession was inadequate. The prevalence of HBsAg positive and anti-HCV was similar to that among the general population. (Kose *et al.*, 2011)

Several occupations in developing countries lag behind in ensuring the safety of their workers in occupational settings. Lack of implementation of safety guidelines at workplaces can expose workers to health risks. In Pakistan, barbers are one of the un-

regulated occupational groups. Low literacy, increased frequency of direct skin contact and blade/razors use can expose barbers to body fluids including blood of the customers. Three hundred eighty-five barbers from the Sukkur district were interviewed using a structured questionnaire. Blood samples were collected and tested for HBsAg. A scale was built to determine the proportions of responses to knowledge, attitude and practice items. The prevalence of HBV among barbers was 2.1%. The barbers' knowledge on HBV and its transmission routes was poor. The response to attitude items was good, except that only 35.1% of the participants agreed to have vaccination against HBV. The overall performance on the knowledge and practice scales was poor compared to the attitude scale on which 80% of the barbers performed well. The prevalence of HBV among barbers was lower compared to the available national figures for the prevalence among the general population. (Abbasi *et al.*, 2014)

Hygiene disregarding and usage of contaminated tools leads to viral infections, fungal, bacterial and skin diseases, eczema, warts, tetanus and so on. Thus assessment of knowledge, attitudes and performance of barbers in order to ensure the security and public health is really necessary. This study is aimed at determining the knowledge, attitude and performance of female barbers in relation to job's environmental health in Malayer city. In present descriptive- analytical study, 75 female barbers sampling of Malayer city were selected by clusters – systematic method. The data were obtained through questionnaires for completion and checklist. Data analysis was performed using SPSS 21 statistical software. The result showed, 86.66% of people have attained correct awareness of regulations and 92.28% had positive attitude toward regulations and 86.38% of people in this study showed appropriate health practice. In order to, compare the average knowledge level in regard to parameters such as age, work experiences and income situation showed a statistically significant difference. In attitude and performance section, the difference between age and mentioned parameters was not statistically significant ($P \geq 0.05$). Despite the desirable level of knowledge, attitude and practice of barbers female in Malayer city, in order to improve the situation, to be better the presence of barbers in special guilds courses to train seriously. (Almasi *et al.*, 2016)

HIV and other blood borne infections can be transmitted through the use of improperly sterilized and disinfected sharp equipment. Barbers in barbershop were interviewed using pre-designed questionnaires and check lists were used to evaluate barbering practice. Microbiological data from tips of the sharpener before and after the barbering was

collected and processed as per the standard procedure. One hundred and twenty three barbering sessions and barbers were observed in which 106 (86.2%) were males. Ninety six (78%) of the respondents knew that HIV could be transmitted by sharing non-sterile sharp instruments. Among the total participants 59 (48%) had the correct knowledge of what sterilization mean and 111 (94.1%) of them believed its importance in their work place. Barbers had a mean knowledge score of 6 ± 1.5 out of a score of 10 regarding sterilization and disinfection as well as in the transmission of HIV in their work place. Three (2.5%) barbers were disagreed that unsterilized blade can transmit skin diseases and 26 (21.3%) of them believed disinfection is enough to avoid microbes from sharp objects. Ninety two (76.7%) barbers were using sterilization in their establishment. This study has revealed the presence of potential risk of HIV and other blood borne disease transmission among the barbers of the study areas. Thus continuous and intensified public health strategies on health education, training, supervision and monitoring are needed to facilitate the adoption of effective methods of sterilization and/or disinfection. (Biadgelegn *et al.*, 2012)

Hepatitis B and C virus [HBV/HCV] infections are serious global health problems. Shaving by barbers has been identified as the key risk factor for spread of HBV. We conducted a cross-sectional survey of barbers in Hyderabad city, Pakistan in 2007 to establish their knowledge and attitudes to the risk of HBV and HCV transmission and their working patterns. Observations showed that 96.2% washed razors with antiseptic after each client and 95.7% used a new blade with new clients. However, knowledge about the diseases and modes of transmission were poor and only 36.6% knew that hepatitis can be transmitted via shaving instruments. Only 3.2% of 186 barbers were vaccinated against HBV. Strategies are needed for raising awareness and regulations of barbers' practices. (Jokhio *et al.*, 2010)

There is strong evidence that razors, barber's scissors, nail files and body piercing instruments are risk factors for transmission of hepatitis B and C. to investigate the knowledge, attitudes and practices regarding hepatitis B and C virus among barbers in Sana'a city. KAP study was conducted from July–September 2011. Two hundred and thirty four barbershops were surveyed. Out of 234 barber shops, 73.1% heard about viral hepatitis B and C. The awareness of modes of transmission of hepatitis and the different sources/risk factors were moderate, ranging from 51.6% who knew that hepatitis can be transmitted through sexual transmitted to 82.1% who knew that hepatitis can be

transmitted through blood transfusion. 54.9% of barbers did not agree that it was essential to have periodic tests for HBV and HCV; however, 67.5% would like to be tested for these infections. 32% washed their hands before attending each client, 59% cleaned instruments with disinfectant between clients, 96.1% washed razors with tap water before use on a new client, 92.6% also washed their razors with an antiseptic solution after every use, 87% used a new blade on new clients and 55% used disinfectants for skin cuts. In Yemen, a large number of barbers are shaving clients with an old style razor with a permanent blade. There is moderate awareness about the various modes of transmission of hepatitis among the barbers. (Al- Rabeei *et al.*, 2012)

A barber shop is a potential place for non-sexual transmission of deadly blood borne diseases such as acquired immuno-deficient syndrome. Few researches have been conducted to assess the knowledge of barbers regarding human immunodeficiency virus (HIV) transmission in Pakistan. With majority of the population visiting roadside saloons, it is imperative to have local data in this regard. The objective of this study was to investigate the knowledge and practices of barbers with reference to razor use and steps taken to sterilize their instruments. A total of 300 barber saloons were conveniently selected for this cross-sectional study during a time period of 5 months from May 2012 till September 2012. The shops were categorized into three groups: big saloons, small saloons and roadside saloons based on the inclusion criteria. One barber was randomly selected as a representative from each saloon. Data collection from each barber shop was carried out by an interviewer using a pre-coded questionnaire. Majority of the barbers had low school education. Awareness regarding sharing of blades as a route of HIV transmission was known by 90 % (n = 90) of big saloon barbers with awareness decreasing in small (n = 55) and roadside saloon barbers (n = 27). Only 60.3 % (n = 181) of the barbers used new blades between customers. In comparison to big saloon barbers, the majority (n = 53) of roadside saloon barbers used tap water for cleaning purposes. Only 40 % of the roadside barbers used antiseptic after shaving. The results of our study indicate that roadside saloon barbers, to whom majority of Pakistani population visit, have inadequate awareness regarding HIV transmission. Their poor barbering practices were mainly due to their low education. This potentiates a great risk for aggravating the HIV endemic in Pakistan. (Bawany *et al.*, 2014)

A cross-sectional study using convenience random sampling technique was conducted on all barbers and one each of their clients. About 51% and 32% of the barbers and clients

respectively had knowledge regarding hepatitis. Razors were recognized as agents for transmitting the infection by 12% and 42% of the barbers and clients respectively. Most (96%) barbers disinfected the razor before use and 49% of the clients confirmed that the razor was sterilized before shaving, while 79% insisted on new blade. Though 50% and 30% of the barbers and clients respectively knew that hepatitis is a preventable disease, only 2% and 7% of the respective barbers and clients were vaccinated against Hepatitis B. Reasons for not being vaccinated were non-awareness and cost of the HBV vaccine. Only half of the barbers and clients considered themselves to be at risk for hepatitis. In Karachi, barbers and clients have poor knowledge of hepatitis and the means of transmissions, as well as low vaccination rates against HBV infection. Hence barbers and their clients must be educated about hepatitis and its prevention. (Shahid *et al.*, 2013)

Hepatitis B and Hepatitis C are serious global public health problems with a prevalence of 10–15% with majority of the cases seen in the developing countries including Pakistan. It is a blood borne infection transmitted by infected blood and blood products through transfusions, contaminated needles, vertical transmission, unsafe sex and reuse of razors by barbers. The literature search so far did not reveal any study comparing knowledge, attitude and practices of hepatitis B & C in barbers working in Urban and rural areas. Knowledge about hepatitis B & C was good in urban areas (92%) as compared to those working in the rural areas (68%). Using new blade for every customer was seen in urban (100%) and rural (93%) area. However barbers knowledge about symptoms of the disease (urban 81% & rural 93%) and vaccination trend of Hepatitis B was low. This study showed a marked difference in the knowledge, attitude and practices of the barbers working in the urban and the rural areas. Main focus should be on launching Health education programs and behavior change communication campaigns for the barbers. Strict regulatory monitoring must be done against unlicensed street barbers. (Shah *et al.*, 2015)

Significance of the Study

HIV continues to be a major global public health issue, having claimed more than 35 million lives so far. In 2015, 1.1 million (940 000–1.3 million) people died from HIV-related causes globally. There were approximately 36.7 (34.0–39.8) million people living with HIV at the end of 2015 with 2.1 (1.8–2.4) million people becoming newly infected with HIV in 2015 globally. Sub-Saharan Africa is the most affected region, with 25.6 (23.1–28.5) million people living with HIV in 2015. Also sub-Saharan Africa accounts for two-thirds of the global total of new HIV infections. (World Health Organization, 2016c).

Around the world 400 million people are infected with hepatitis B, more than 10 times the number of people living with HIV. An estimated 1.45 million people died of the disease in 2013 – up from less than a million in 1990 (World Health Organization, 2016b).

Globally about 2 billion people have been infected with hepatitis B virus (HBV) and about 350 million live with chronic infection. An estimated 600000 persons die each year due to the acute or chronic consequences of hepatitis B. Razor shaving by barbers has been identified as a key risk factor for transmission of HBV. In Turkey 39.8% of barbers were found to be HBV positive. (Al- Rabeei *et al.*, 2012)

Razor sharing and shaves from the barbers have been identified as an important risk for blood-borne viruses spread in several investigations carried out all over the world. In many parts of Africa and Asia, the widespread cultural practice of shaving at a shop or roadside barber is an underestimated route of blood-borne viral disease transmission. In Ethiopia, among patients with sexually transmitted diseases, shaving at a barber shop was an identified risk factor positively associated with HIV. (Amodio *et al.*, 2010)

HIV, a once rare disease, is a slow progressive illness infecting the human body's cell-mediated immunity and affecting an estimate 34 million people worldwide. Each year around 2.7 million more people get infected with HIV and an estimate 1.8 million die of AIDS. According to the World Bank report of July 2010, Pakistan has a low HIV burden, with approximately 1/10 of the adult population being affected. But with an estimate 34–49 % Pakistani population, especially in rural areas, using roadside hair saloons for haircuts, facial shave and armpit shave, Pakistan is among many high risk countries for blood borne diseases such as HIV, hepatitis B. (Bawany *et al.*, 2014)

A study in Izmir showed that carriage-frequency of HBV is between 4–5% in their country. In a study performed in China, the HBV seropositivity was found to be higher in barbers than in the control group. In Italy, in hairdressing care processes the risk of hepatitis B for the population was found to be 1.7%. It was estimated that 15% of acute hepatitis B cases resulted from this type of exposure. (Kose *et al.*, 2011)

The first case of HIV/AIDS in Bangladesh was detected in 1989. Since then 1495 cases of HIV/AIDS have been reported (as of December 2008). However UNAIDS estimates that the number of people living with HIV in the country may be as high as 12,000, which is within the range of the low estimate by UNICEF's State of the World's Children Report 2009. It is estimated that without any intervention the prevalence in the general adult population could be as high as 2% in 2012 and 8% by 2025. (Unicef, 2009)

About 4%-7% of populations have hepatitis B infection. About 3.5% of pregnant mothers in Bangladesh are carrying the hepatitis B virus. (National Liver Foundation of Bangladesh, 2016)

So it is found that in different studies on this topic were conducted in countries like China, Pakistan, Turkey, and Italy. The conditions in those countries were mixed. There were some studies conducted on the sex workers, non sex worker female injecting drug users. (Azim, 2006)

Another study was conducted on the truck drivers, rickshaw puller, slum dwellers and other peoples at risk. (Islam, 2008)

We did not find any study related to our population (salon workers) which conducted in Bangladesh. But from the given data we can say that the condition of our country is quite alarming. This is the reason why we want to conduct this study. The study is designed in such a way so that we can determine the knowledge, attitude and practice of the salon workers of Bangladesh.

Aims and Objectives of the Study

The main objectives of the study are –

- ✓ To determine the knowledge about the mode of transmission of blood borne diseases like HIV and HBV in salon workers.
- ✓ To determine the socio demographic status of salon workers.
- ✓ To determine the working status salon workers.
- ✓ To determine the attitude of salon workers towards the HIV and HBV infected person.
- ✓ To evaluate those practices of the salon workers which are responsible for the transmission of HIV and HBV.

Chapter 3

Methodology

3.1 Type of the Study

It was a survey based study.

3.2 Study Area

The survey was conducted in different districts of Bangladesh. Those are Dhaka, Rangpur, Maymensingh, Feni.

3.3 Study Population

In this study, a total number of 397 male respondents who were working in salon were assessed. Verbal consents were obtained from the eligible participants before.

3.3.1 Inclusion Criteria

- Must be salon worker
- Only male worker

3.3.2 Exclusion Criteria

- Who were not willing to participate

3.4 Questionnaire Development

The questionnaire was written in simple English in order to avoid unnecessary semantic misunderstanding. Extra space was however, allowed after some questions for the participants' comments; and in most cases, these were used as qualifying remarks which aided considerably in giving answers to specific questions and in providing additional information which assisted the interviewers in drawing up conclusions.

3.5 Sampling Technique

In this study convenient sampling technique was followed.

3.6 Data Analysis

After collecting, the data were checked and analyzed with the help of Microsoft Excel 2010. The result was shown in bar, pie and column chart.

Chapter 4
Results

4.1 Age Distribution of the Respondents

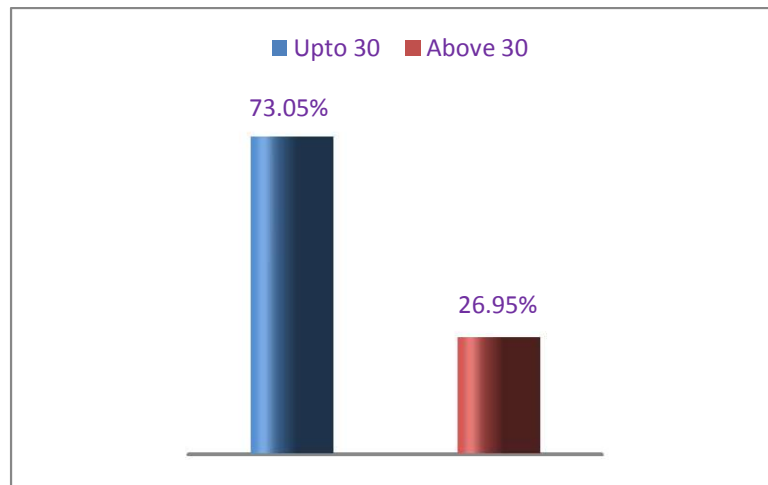


Figure 4.1: Age Distribution of the Respondents

Among the respondents, during this study it was found that about 73.05% populations were aged up to 30 years and rest of the populations which includes 26.95% were above 30 years.

4.2 Marital Status of the Respondents

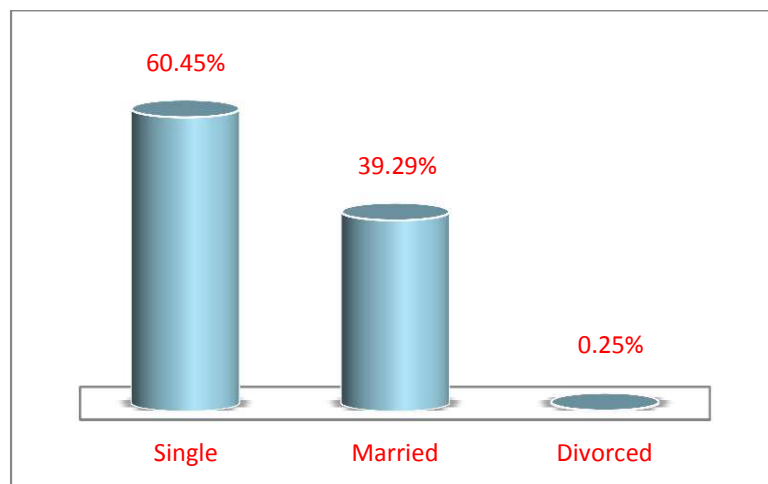


Figure 4.2: Respondent's Marital Status

During this study it was found that about 60.45% populations were single, where among the other populations 39.29% were married. However, the remaining, only 0.25% populations were divorced.

4.3 Educational Status of the Respondents

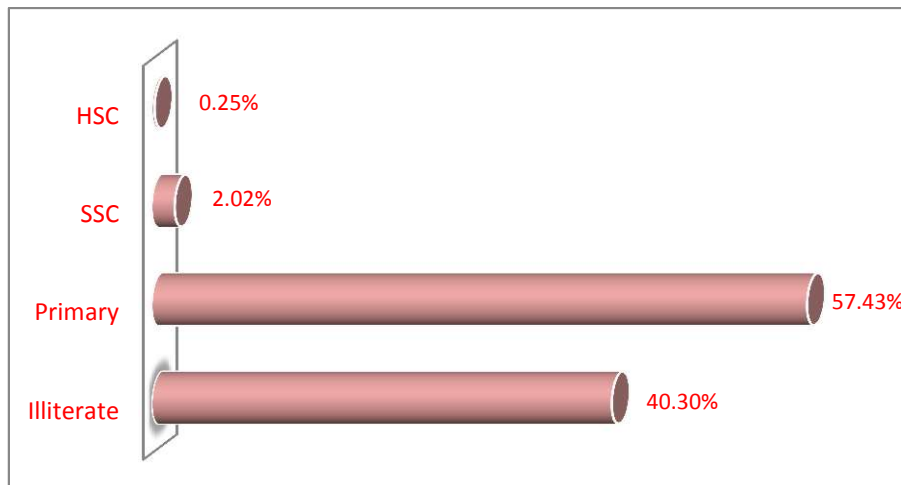


Figure 4.3: Respondents Educational Status

Among the respondents it was found that about 57.43% of them passed primary level, where 40.30% were illiterate. Around 2.02% populations passed SSC level. The rest of population includes 0.25% of population who passed HSC level.

4.4 Residential Status of the Respondents

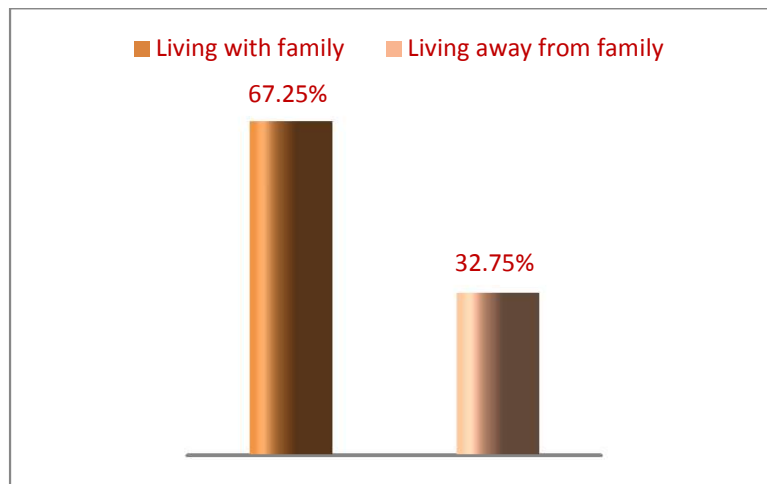


Figure 4.4: Residential Status of the Respondents

The study result shows that, 67.25% of the respondents said yes when they were asked whether they live with their family or not. Around 32.75% said no when they were asked the same question.

4.5 Monthly Income of the Respondents

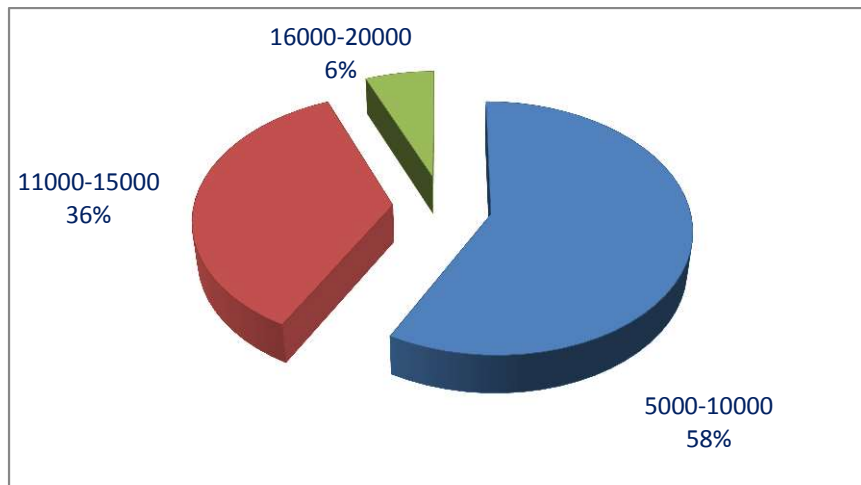


Figure 4.5: Range of Income per Month

During the study it was found that majority of the respondents of about 58% earn 5000-10000 taka per month, where 36% of populations were able to earn 11000-15000 taka per month. The rest of the populations of about 6% earn 16000-20000 taka per month.

4.6 Location of the Salon

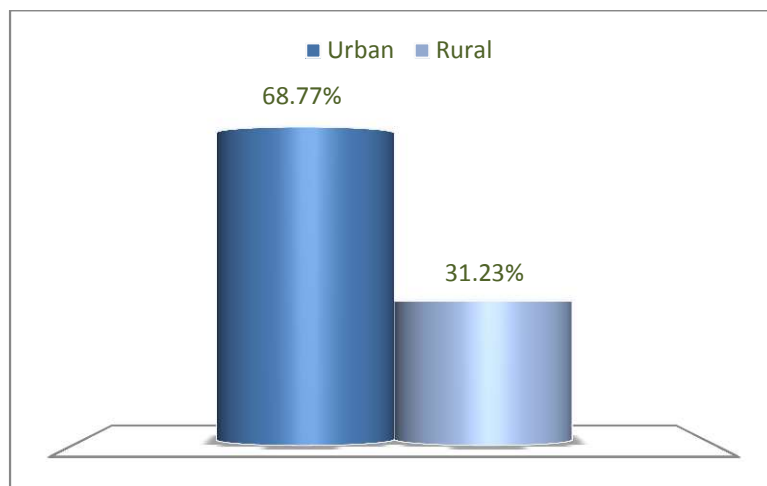


Figure 4.6: Location of the Salon

The study result shows that majority of the salon of about 68.77% were from urban area. The rest of the salons of about 31.23% were from rural area.

4.7 Type of Salon

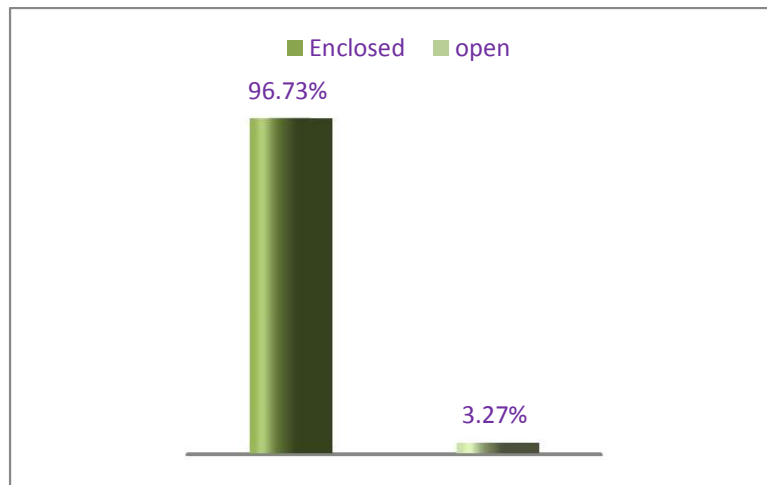


Figure 4.7: Type of Salon

The study result shows that among the salon that were visited during the research process 96.73% of the salon were enclosed and the rest of about 3.27% were open salon.

4.8 Experience Status of the Respondents

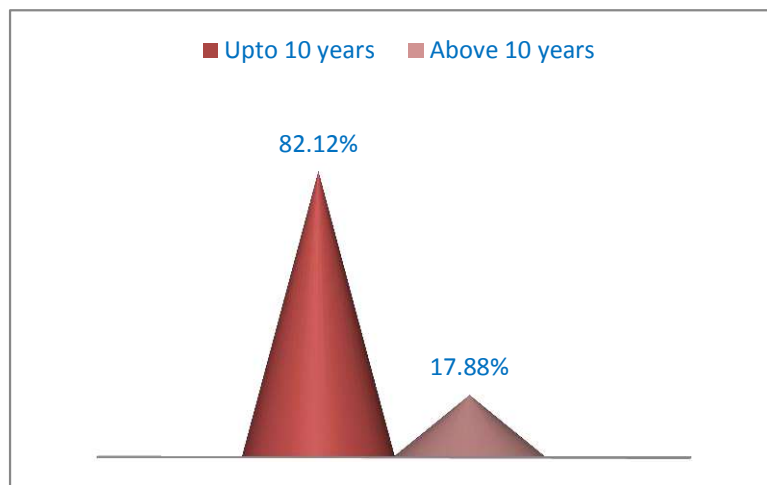


Figure 4.8: Experience Status of the Respondents

The study result shows that most of the populations of about 82.12% have working experience up to 10 years. Around 17.88% of the populations have a work experience above 10 years.

4.9 Work load in a Day for the Respondents

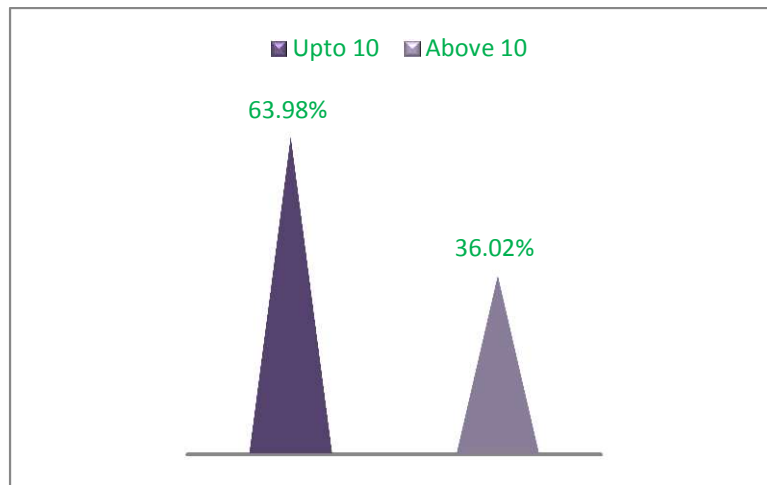


Figure 4.9: Work load per Day

During the study it was found that majority of the population of about 63.98% get up to 10 customers per day, where 36.02% of the populations get above 10 customers per day.

4.10 Status Regarding Respondent's Training

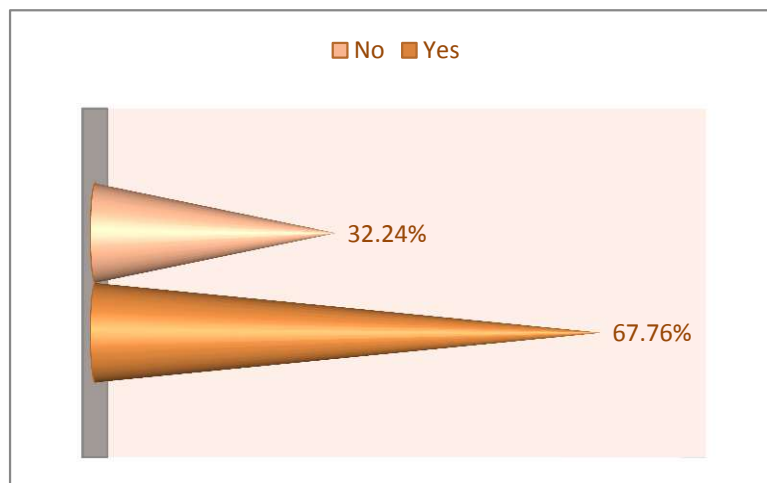


Figure 4.10: Status Regarding Respondent's Training

Among all the population it was found that 67.76% of the populations took training and the rest of the populations which is 32.24% did not have any type of training.

4.11 Knowledge Regarding the Curability of HIV

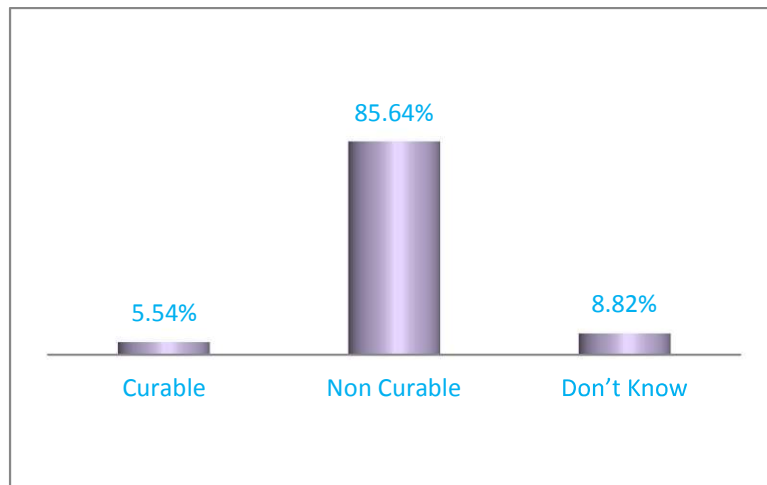


Figure 4.11: Knowledge Regarding the Curability of HIV

Most of the population of about 85.64% said that HIV is not curable, where among the other of about 5.54% population thought HIV is curable. The rest of the population of about 8.82% had no idea whether HIV is curable or not.

4.12 Knowledge of Respondents Regarding the HIV Vaccine

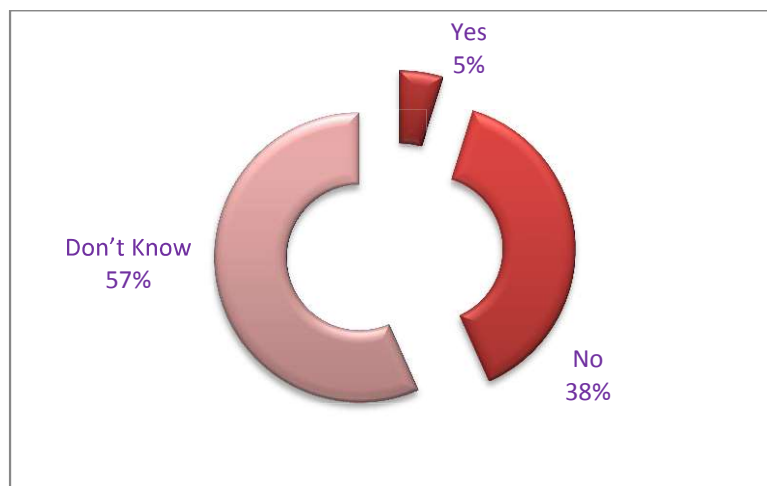


Figure 4.12: Knowledge of Respondents about HIV Vaccine

During the study it was found that majority of the population of about 57% had no idea whether there is any vaccine available for HIV or not. Among the other population 38% said that there is no vaccine available for HIV. The rest of the population of about 5% said that there is vaccine available for HIV.

4.13 Knowledge Distribution about the existence of HBV

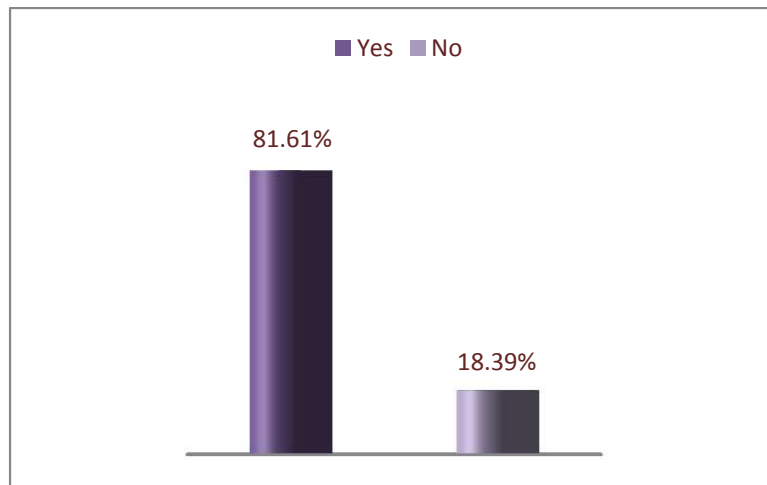


Figure 4.13: Knowledge Distribution about the existence of HBV

The study result shows that most of the population of about 81.61% had idea about the existence of HBV. The rest of the population of about 18.39% had no idea about the existence of HBV.

4.14 Knowledge Regarding the affected organ by HBV

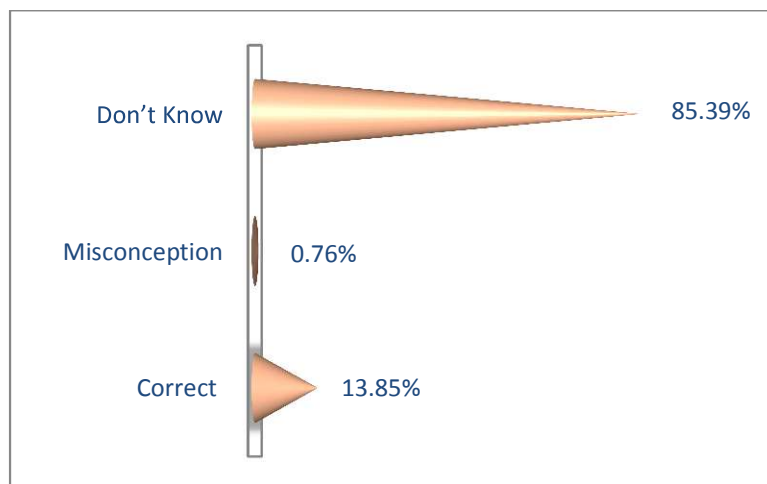


Figure 4.14: Knowledge regarding the affected organ by HBV

Among the respondents, most of the population of about 85.39% had no idea about the affected organ due to HBV, where 13.85% of population had the correct conception about the affected organ due to HBV. The rest of the population of about 0.76% had misconception about the affected organ due to HBV.

4.15 Knowledge Regarding the Curability of HBV

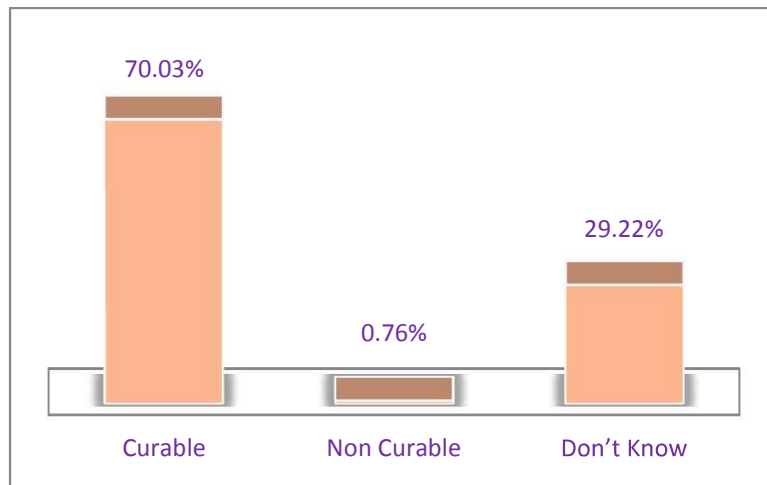


Figure 4.15: Knowledge Regarding the Curability of HBV

Most of the population of about 70.03% said that HBV is curable, where among the other of about 0.76% population thought HBV is not curable. The rest of the population of about 29.22% had no idea whether HIV is curable or not.

4.16 Knowledge of Respondents Regarding the HBV Vaccine

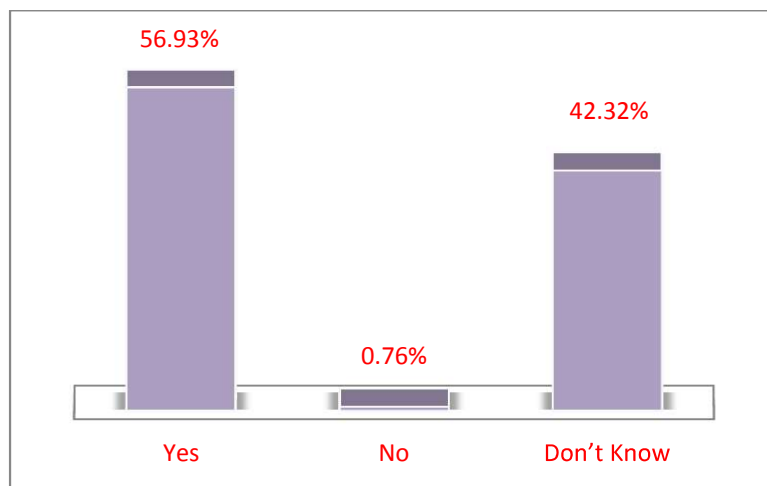


Figure 4.16: Knowledge of Respondents about HBV Vaccine

During the study it was found that majority of the population of about 56.93% said that there is vaccine available for HBV. Among the other population 0.76% said that there is no vaccine available for HBV. The rest of the population of about 42.32% had no idea whether there is any vaccine available for HBV or not.

4.17 Status of Vaccination among the Respondents

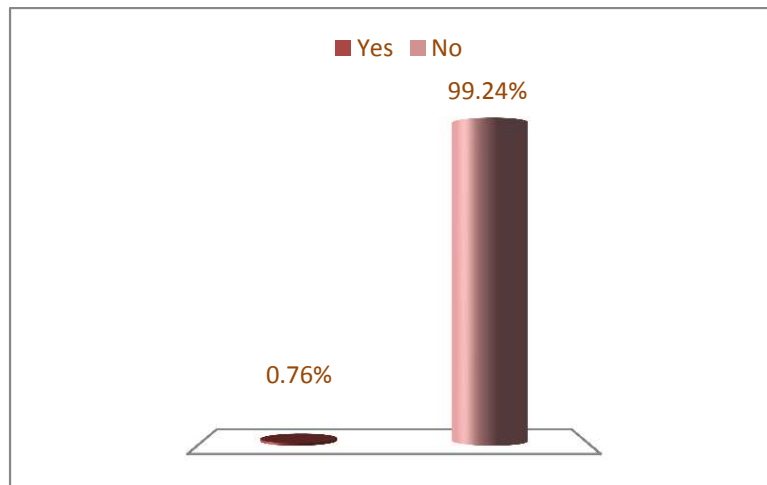


Figure 4.17: Status of Vaccination among the Respondents

Among the respondents it was found that most of the populations of about 99.24% were not vaccinated for HIV, where only 0.76% of populations were vaccinated for HBV.

4.18 Distribution of Reason for not Taking HBV Vaccine

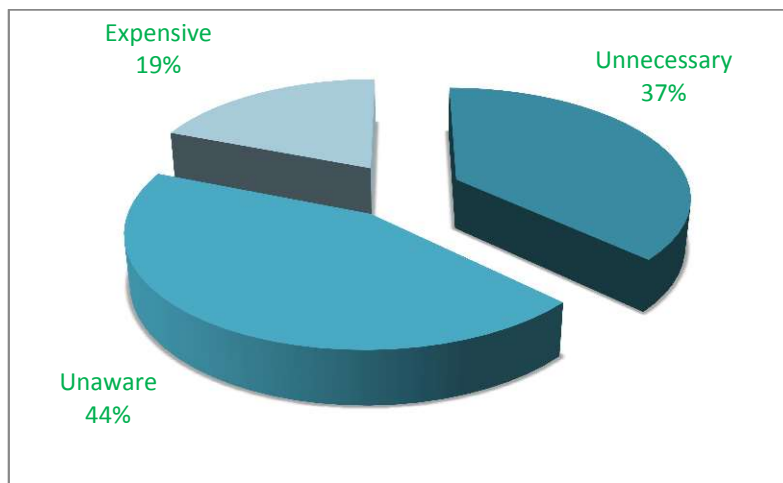


Figure 4.18: Distribution of Reason for not taking HBV Vaccine

During the study it was found that majority of the populations of about 44% didn't take the HBV vaccine as they were unaware of the vaccine's existence, where 37% of the population didn't take the vaccine as they thought it is unnecessary. The rest of the population of about 19% didn't take the HBV vaccine as they thought it was expensive.

4.19 Knowledge Regarding the Ways of Sterilization of Equipment

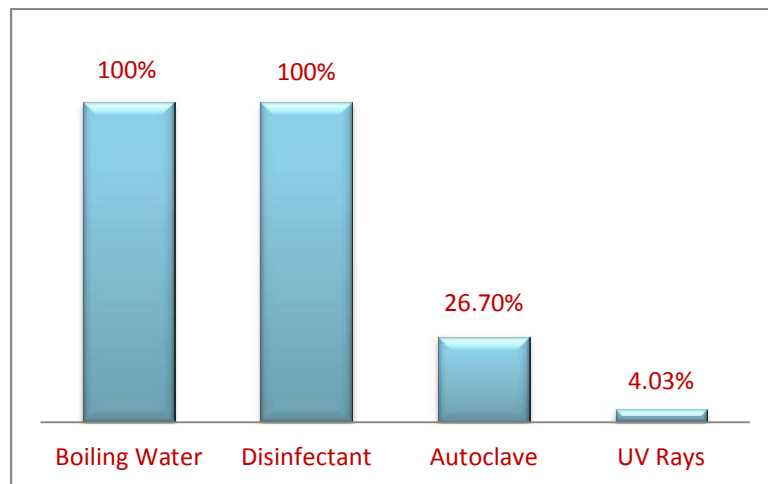


Figure 4.19: Knowledge Regarding the Ways of Sterilization of Equipment

The study result shows that 100% of the people know that sterilization can be done by boiling water and disinfectant, where 26.70% of population knows that sterilization can be done by autoclaving. Population of about 4.03% knows that sterilization can be done by UV rays.

4.20 Knowledge Distribution about Correct Mode of Transmission of HIV

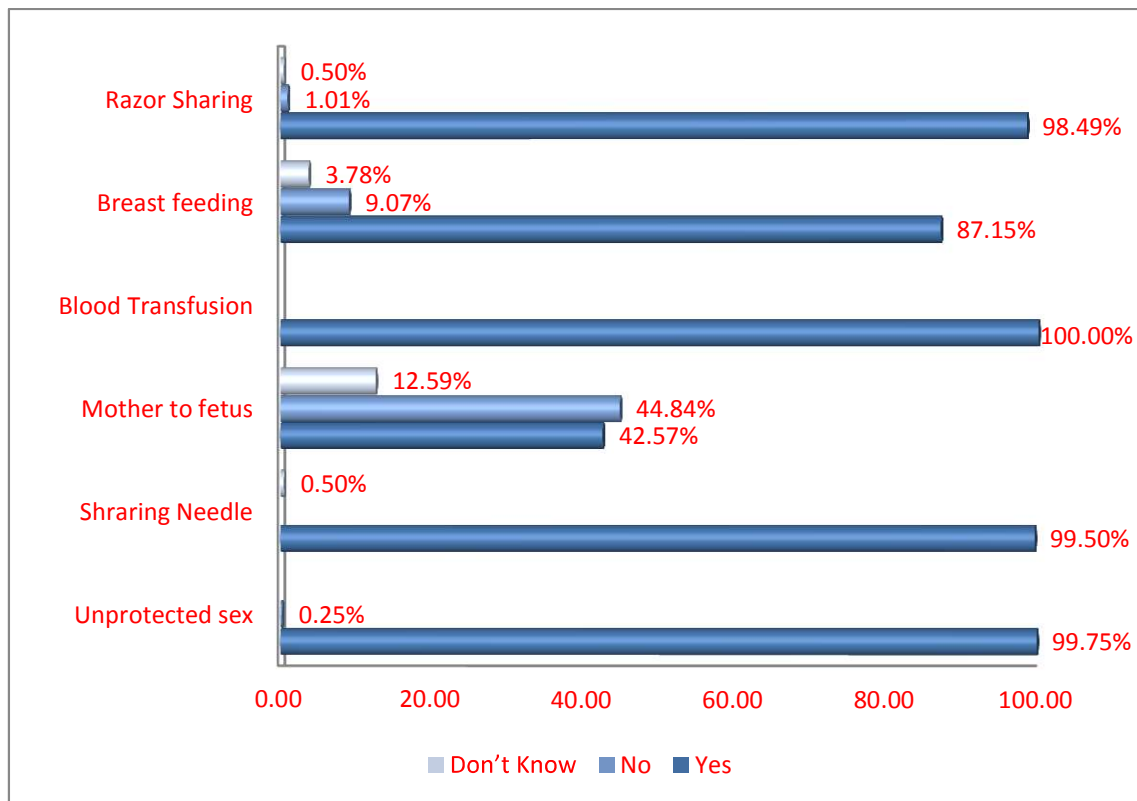


Figure 4.20: Knowledge Distribution about Correct Mode of Transmission of HIV

Among the respondents it was found that populations of about 100% know that blood transfusion is a correct mode of transmission of HIV, where 99.75% of populations know that unprotected sex is a correct mode of transmission. Most of the population of about 99.5% of population knows that sharing needle can be a correct way for transmission of HIV, where 98.49% of populations believe that razor sharing is a correct mode of transmission. Among the others 87.15% population knows that breast feeding is a correct mode of transmission. Population of about 42.57% knows that HIV can be transmitted to fetus from mother.

4.21 Knowledge Distribution about Incorrect Mode of Transmission of HIV

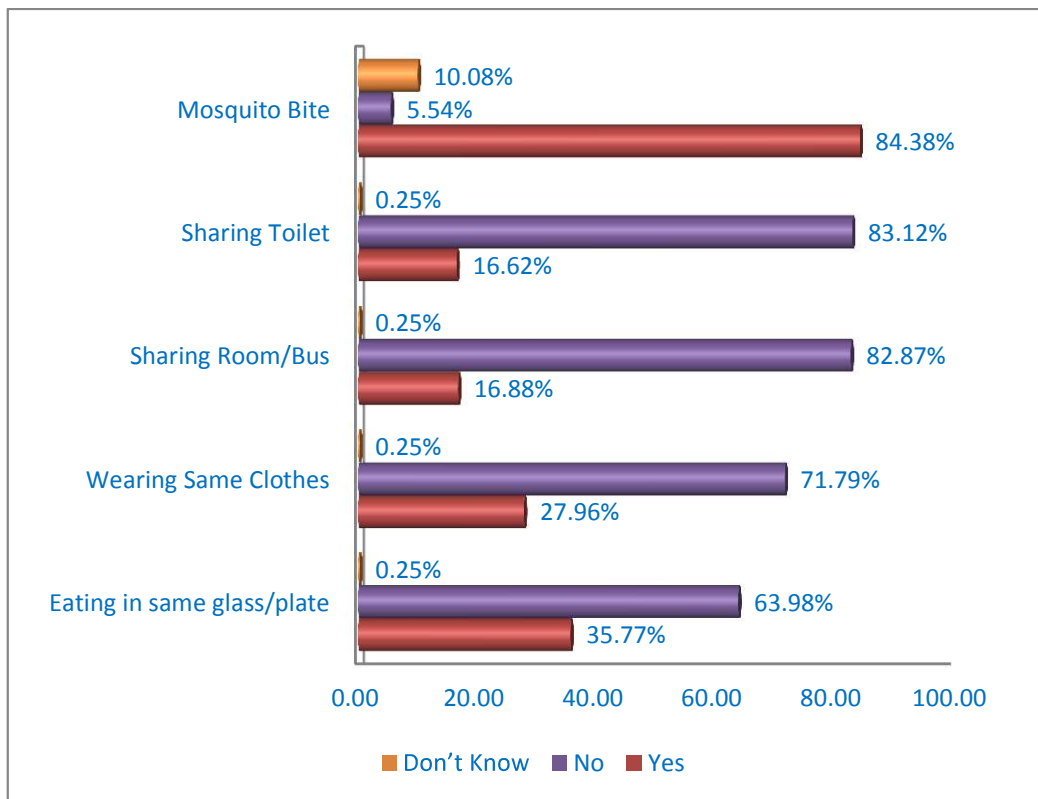


Figure 4.21: Knowledge Distribution about Incorrect Mode of Transmission of HIV

During the study it was found that majority of populations of about 84.38% believe that mosquito bite is a correct mode of transmission, where 35.77% of populations think that eating in same glass or plate can be the way of transmission of HIV. A population of about 27.96% thinks that wearing same clothes can be a way of transmission. Among the respondents populations of about 16.88% believe that sharing room or bus is a correct mode of transmission of HIV, where 16.62% of population thinks sharing toilet as a correct mode of transmission of HIV.

4.22 Knowledge Distribution about Correct Mode of Transmission of HBV

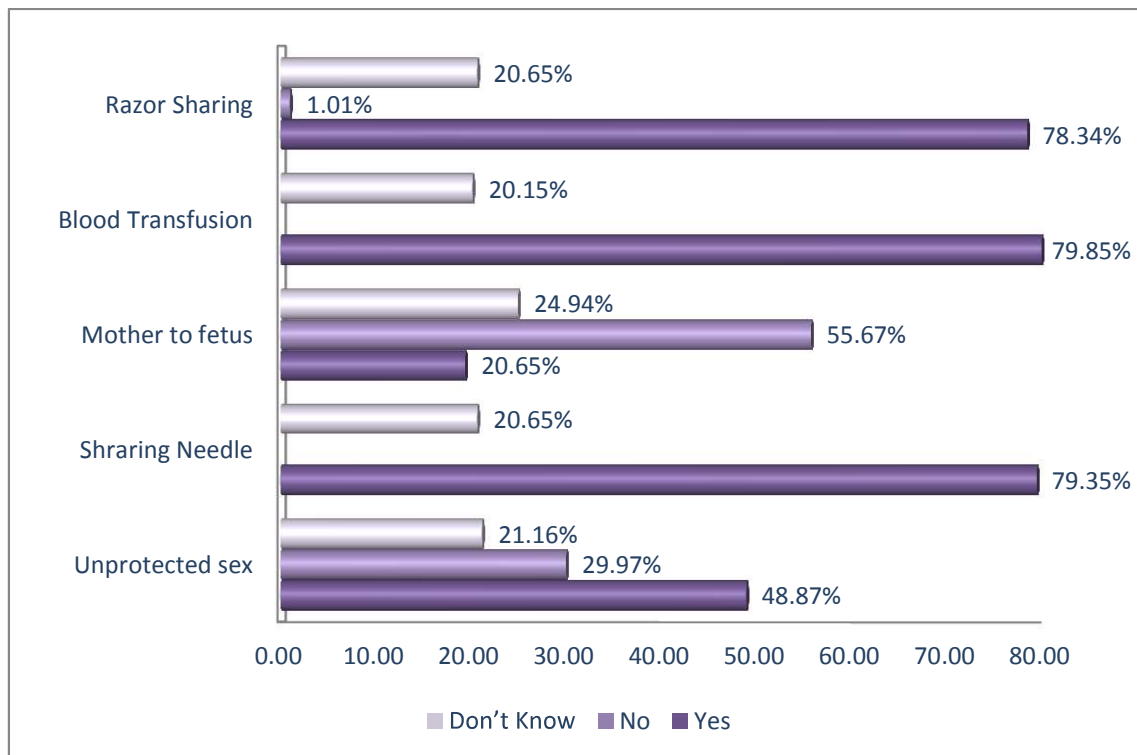


Figure 4.22: Knowledge Distribution about Correct Mode of Transmission of HBV

The result of the study shows that majority if the population of about 79.85% knows that blood transfusion is a correct mode of transmission of HBV, where 79.35% of population believesthat sharing needle is a correct mode of transmission. A population of about 78.34% knows razor sharing is a correct mode of transmission of HBV, where 48.87% of population believes unprotected sex can be a way for the transmission of HBV. Population of about 19.40% thinks that HBV can be transmitted from mother to fetus.

4.23 Knowledge Distribution about Incorrect Mode of Transmission of HBV

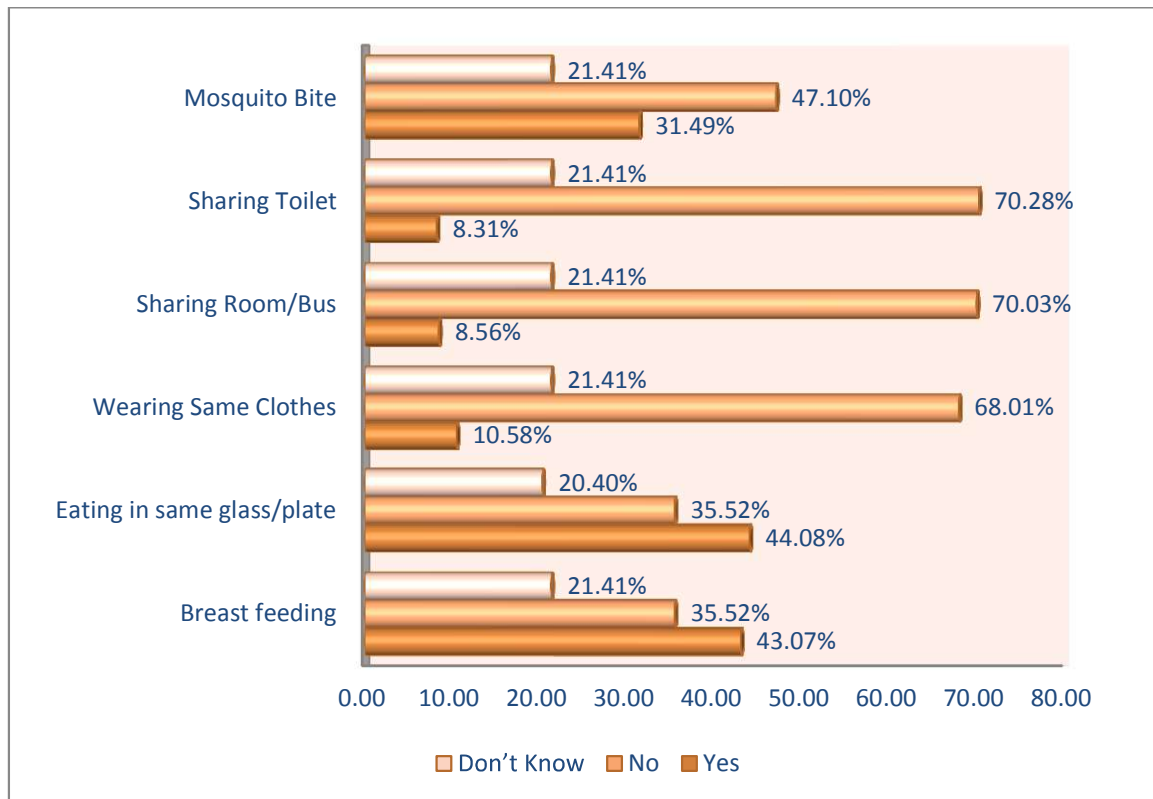


Figure 4.23: Knowledge Distribution about Incorrect Mode of Transmission of HBV

During the study it was found that most of the population of about 44.08% thinks eating in same glass or plate can be a way of transmission of HBV, where 43.07% population thinks breast feeding is a correct mode of transmission of HBV. Among all 31.49% of populations choose mosquito bite as a way of the transmission of HBV, where 10.58% of population believes that wearing same clothes is a correct mode of transmission of HBV. Populations of about 8.56% choose sharing room or bus can be a way of transmission. Population of about 8.31% thinks that sharing toilet can be a way HBV transmission.

4.24 Practices at the Work Place

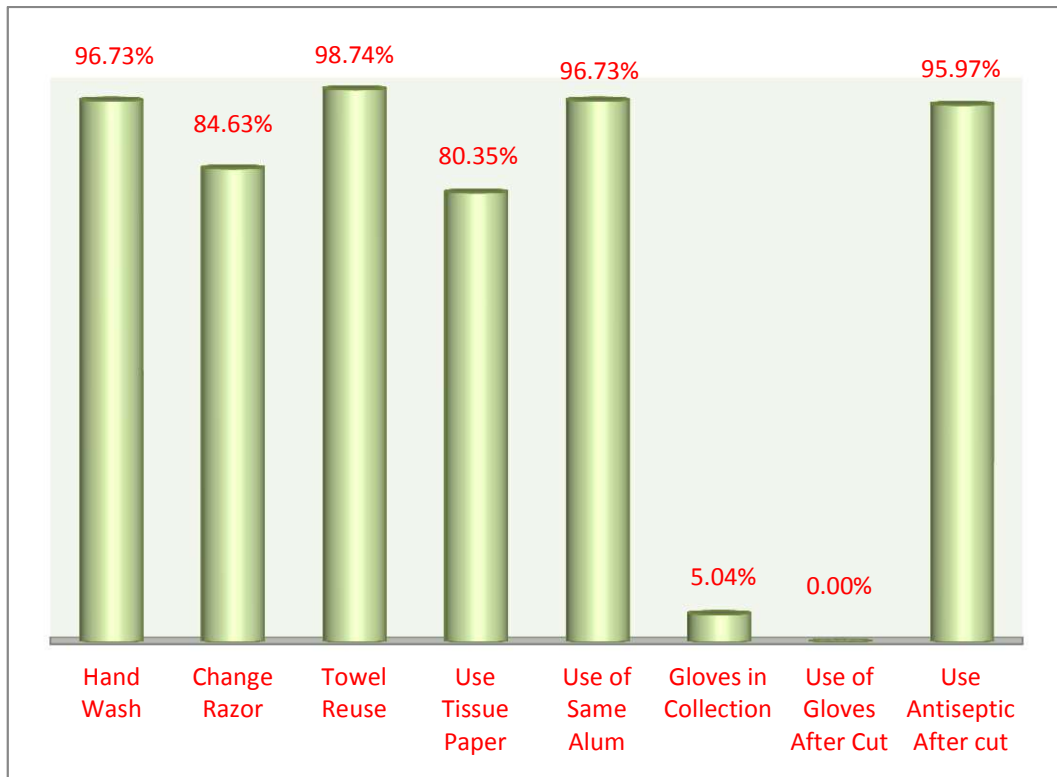


Figure 4.24: Practices at the Work Place

The study result shows that 98.74% of populations reuse their towel, where 96.73% of populations use the same alum each time. 96.73% of populations wash their hands for each customer. 95.97% of populations use antiseptics after cut. A population of about 84.63% change razor for every customer. 80.35% of populations use tissue paper. Only 5.04% of populations have disposable gloves in their collection, where 0.00% of populations use those gloves after cut.

4.25 Sterilization Methods Used by the Respondents

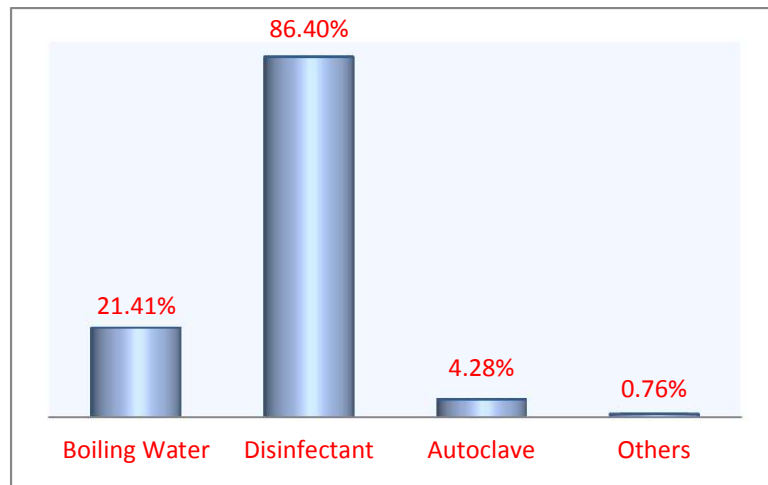


Figure 4.25: Sterilization Methods Used by the Respondents

Among all the respondents 86.40% of populations use different disinfectants like Dettol or savlon, where 21.41% of populations use boiling water as the way of sterilization. Among the others 4.28% of populations use autoclaving technique for sterilization. Populations of about 0.76% use other things like normal water and holy water for sterilization of their equipment.

4.26 Duration of Sterilization

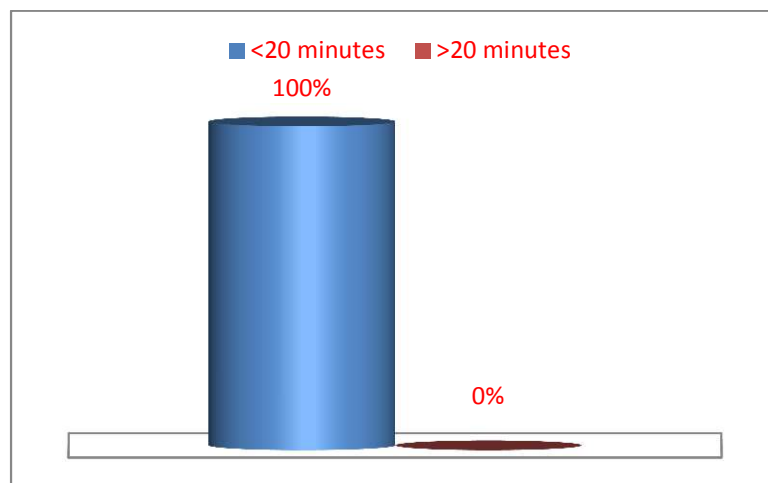


Figure 4.26: Duration of Sterilization

The study result shows that all the respondents sterilize their equipment for less than 20 minutes. No one was found to sterilize the equipment for at least 20 minutes.

4.27 Distribution of Willingness to Attend Biological Course

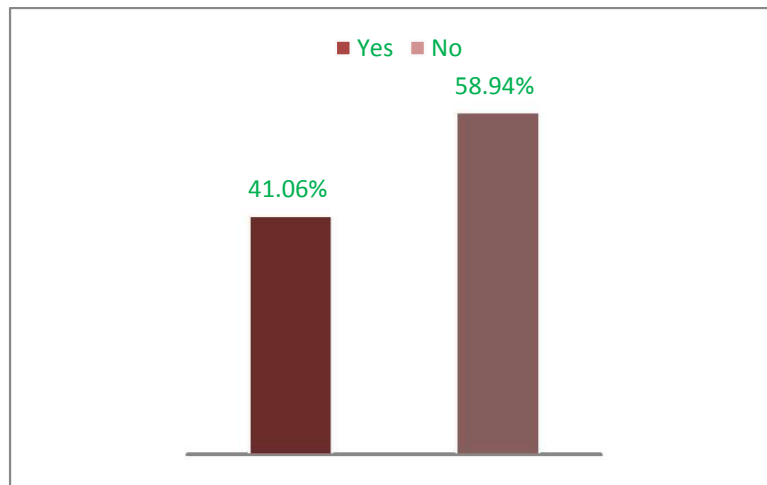


Figure 4.27: Distribution of Willingness to Attend Biological Course

During the study it was found that majority of populations of about 58.94% were not willing to attend any biological course. The rest of the populations of about 41.06% were willing to attend biological course.

4.28 Distribution of Reasons for not Attending Biological Course

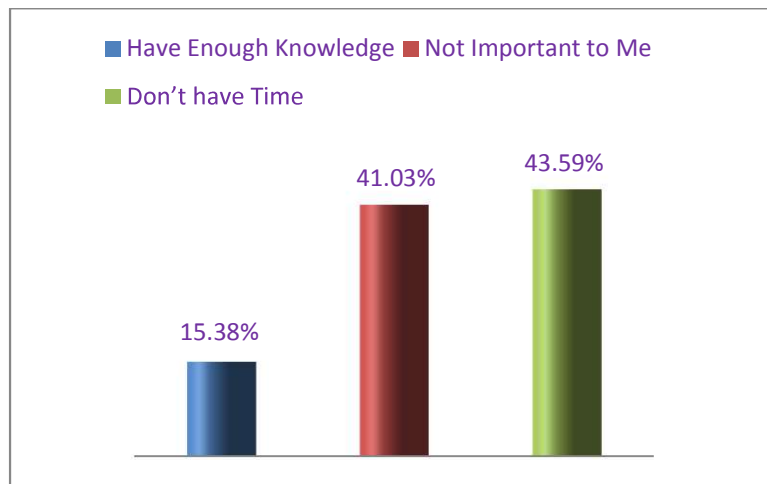


Figure 4.28: Distribution of Reasons for not Attending Biological Course

Among all the respondents who were not willing to attend any biological course, populations of about 43.59% said they don't have time, where 41.03% of populations said that it is not important to them. The rest of the populations of about 15.38% said that they have enough knowledge about HIV and HBV.

Chapter 5

Discussion

&

Conclusion

Discussion

Inappropriate barbering techniques may lead to the transmission of HIV and other blood borne diseases such as hepatitis B and hepatitis C. Razor sharing has been recognized as a key risk factor for HIV and HBV and also many other blood borne disease in many nations of the world. The aim of the study was to determine the knowledge, attitude and practice of preventive measures against HIV, HBV and other blood borne disease in salon workers. The study was conducted on 397 male respondents of which 73.05% populations were aged up to 30 years and rest of the populations which includes 26.95% were above 30 years. About 96.73% of them were working in enclosed salon and the rest of about 3.27% were open salon and 82.12% had working experience up to 10 years whereas 17.88% of the populations have a work experience above 10 years. Regarding the educational status 57.43% of them passed primary level, where 40.30% were illiterate. Around 2.02% populations passed SSC level. The rest of population includes 0.25% of population who passed HSC level.

Our study shows that all of them had heard about HIV. In case of HBV 81.61% had heard about it but only 16.85% of the population had idea about the affected organ (liver) due to HBV. A similar study was conducted on 105 barbers where only 60% had heard about HIV before. But in case of HBV 86.7% of population knew HBV produce disease to liver. (Amodio *et al.*, 2010)

In our study we found that about 100% of populations knew that blood transfusion is a correct mode of transmission of HIV. About 99.5% and 98.49% of population knew that sharing needle and razor sharing can be a correct way for transmission of HIV respectively. Population of about 42.57% knew that HIV can be transmitted to fetus from mother. But for HBV those who had the correct knowledge on mode of transmission were for blood transfusion (79.85%), sharing needle (79.35%), razor sharing (78.34%), from mother to fetus (20.34%). Amodio *et al.*, 2010 showed clear majority of respondents (93.3%) knew that blood-borne viruses like HIV and HBV can be transmitted by parenteral route (blood transfusion and needle sharing) and a similar percentage (92.4%) also recognized that razors and scissors could be a potential source of viral infections.

Our study population had better knowledge on HIV. The reason behind that may be the mass media or their life experience. But in case of HBV the knowledge of our population is poor when comparison is made with the other study.

There were many misconceptions too. Mosquito bite was considered as a correct mode in case of HIV (84.38%) and HBV (31.49%). Only 42.50% and 19.40% of population thought infection can transfer from mother to fetus in case of HIV and HBV respectively. Only 48.87% of population stated unprotected sex as a way for the transmission of HBV. Eating in same glass or plate (44.08%) and breast feeding (43.07%) were also in their thought as correct mode of transmission of HBV.

Again we can see that misconception in case of HBV is higher than that of HIV in our population.

Practices like reuse of towel (98.74%), use of same alum (96.73%), washing hands for each customer (96.73%), use of antiseptics after cut (95.97%), changing razor for every customer (84.63%), use of tissue paper (80.35%) were found in our population. Only 5.04% of populations had disposable gloves in their collection, where no one uses those gloves after cut. Amodio *et al.*, 2010 showed hand washing between different clients was practiced by 94 of 105 (89.5%). Towels and razors/blades were reused by 33.3% and 18.1% of respondents, respectively. Although disposable gloves were available to 68 hairdressers, only 15 (14.3%) of them declared to change gloves between different clients while the remaining 53 (50.5%) reused the same gloves. After an accidental cut of the customers, only 22 subjects (20.9%) urged to wear gloves while a large majority (79.1%) continued to work without precautions. A total of 87 (82.9%) respondents disinfected any injured area with antiseptic with alcohol-based solution.

Here we can see in case of practices like hand washing or changing razor are followed in higher rate but the matter of concern is that no one of our population uses disposable gloves after accidental cut. So our salon workers are at high risk of getting affected by blood borne disease. Reusing the towel and alum as antiseptic is also a matter of concern too.

As a preventive factor, existence of the vaccine was known to 56% population and only 0.76% of populations were vaccinated for HBV. Majority of the populations of about 37% didn't take the vaccine as they thought it is unnecessary. In another study Amodio *et al.*, 2010 showed 72.4% of population knows about vaccination as prevention of HBV infection and 44.8% were vaccinated for HBV and 55.2% were not.

Knowledge on vaccination in our population was very poor. which is a big matter of concern.

All the population of our study knew that boiling water and disinfectant can be used as a way of sterilization for the equipment. 86.40% of populations use different disinfectants

like dettol or savlon, where 21.41% of populations use boiling water as the way of sterilization. But no one sterilizes their equipment for at least 20 minutes which is required to kill HIV and HBV. Also Dettol or savlon cannot kill HIV and HBV. (TILZ, 2016)

So the cleaning procedure of our salon worker is very poor.

Although majority of the people had good knowledge on the transmission ways of HIV but in case of the attitude the states are quite moderate. 42.32% of population will not keep an infected person and quite similarly 41.36% of population will not give service to an infected person. In case of HBV almost 44% of population will not keep an infected at work and also will not give service to an HBV infected person.

We can come to a conclusion that our populations of the study possess a moderate attitude towards a HIV or HBV infected patients.

When they were asked to attend a special course on biological risk and its prevention, about 41.06% were willing to attend biological course. The rest of the populations of about 58.94% were not willing to attend any biological course. In another study only 32 hairdressers (30.5%) were willing to attend a specific course on biological risk and its prevention; 57 (54.3%) did not agree because of a lack of free time or because their knowledge were considered enough. (Amodio *et al.*, 2010)

Here we can see the result in case of both study is quite similar.

Conclusion

Based on the facts, it can be concluded that knowledge about the mode of transmission of HIV are quite good but in case of the transmission ways of HBV the knowledge is poor. Majority portion knew that there is vaccine available of the prevention of HBV but almost all were not vaccinated. There were certain portions of population which was not so small who think that it is unnecessary for them to take the vaccine. Even though many of them has a well knowledge on the transmission of those disease but a huge portion of them possess a negative attitude towards a HIV or HBV infected person to an extent that they does not want to work with them or to give service to an infected person. This attitude should be changed. Most of the population knows about the ways of sterilization but after the analysis it was found that they do not know the right procedure of those ways of sterilization. Some of the practices were found after the study which pushes the salon workers and their customers at risk of getting infected by HIV and HBV. But a little knowledge and awareness of the salon workers can change this situation. At this point, the only way to remedy is to promote health awareness and to arrange educational program to increase the knowledge of salon workers. Hepatitis B Vaccination campaign should be conducted in different place of the country. Training seminars should be arranged for them to teach them more about the working and cleaning procedure. These are mandatory steps to give protection to our salon workers and their customers against the risks that threaten their health. It is however need to be mentioned that this research was conducted on randomly chosen population and in a very small scale so it does not reflect the whole idea of the whole country. Therefore it is suggested that if a conclusive result about the knowledge, attitude and practice of the salon workers is desired, further large scale researches should be conducted.

Chapter 6

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