CHAPTER – 5

Discussion

Three survey (positive net work, Government hospital and NGO) showed that HIV is predominant in Namakkal District Madurai comes next and Salem comes third. From the statistical analysis it was evident that HIV infection is more predominant in both male and female community (4353) have same number of infection in Namakkal, Madurai and Theni districts. From the cumulative data, it was clearly identified that among 29 districts Virudhunagar have more HIV infection among casual sex workers. Comparative studies in 29 districts showed that male (8083) have high infection than female (7869). In all the districts HIV infection is more predominant in 26 – 30 years (3438). Based on survey factors like age, sex, occupation, treatment, mode of transmission, literacy results were discussed here under.

5.1. Chennai

Chennai is a highly populated metro politean city. Migrated people from different parts of the country are working in Chennai. In the present investigation the number of patients admitted in Government hospital was high. The literacy rate also very high in Chennai, which improved the awareness of the people about HIV transmission and control measures. Due to this reason, maximum HIV infected patients are using the antiretroviral therapy. Tamilnadu Government established 14 ARV canters in the state. Among them one of the biggest ARV centre located in Tambaram, Chennai. Thus Chennai was placed in 5th position in HIV infection.
5.2. Coimbatore

In industrialized city Coimbatore, daily labours are mainly affected with the HIV infection and the number of literate people also high. Compared to other occupational status, the Government employees are less affected with HIV infection. One of the Government organized ARV centre is located in Government hospital, Coimbatore. Availability of the free ARV treatment and the educational status of the people decreased the high risk of infection. Literacy dependent HIV was reported earlier by Asha Krishnakumar (2004) and Bhupesh(1992). This investigation also proved the same. Thus Coimbatore was placed in 12th position in HIV infection.

5.3. Cuddalore

In Cuddalore, the educational status of the people was high. The number of daily labours was very high. The infection was mainly transmitted through heterosexuals. The availability of ARV treatment in Cuddalore district decreased the rate of HIV infection. Thus it was placed in 13th position.

5.4. Darmapuri

The people in Darmapuri district are literate. 24 cases of mother to child transmission and 2 blood transmission were reported from this district. Mainly daily labours and house wives were infected with HIV. Among 433, 160 people were utilized ART.

5.5. Dindigul

Most people are illiterate in Dindigul district. The main affected people in Dindigul district was daily labours .The sexual mode of transmission was mainly seen in this district. 61 cases of mother to child transmission were observed through the district.
ARV centre was not established in this district. People in this district were mainly depends upon the nearest ARV centre, Madurai.

5.6. Erode

In the present study revealed that the daily, labours and tailors highly affected with HIV. They are getting infection mainly through hetero sexual. 47 children’s were also infected with HIV from their mother. Mother to child transmission were reported by Dinesh Varma (2007), Green Blatt et al, 1988, Jaya Shreedhar, 1997 and WHO (2005). This present investigation observed the mother to child transmission in high number.

5.7. Kanchipuram

Sexual mode of transmission was the main way through which the HIV infection is transmitted. ARV treatment was mainly used by 255 people in this district. The daily labours are commonly affected with HIV. 29 CSW are reported to be infected with HIV. ARV centre was not established here. Thus it was placed in 17th position for HIV infection.

5.8. Kanyakumari

In the present investigation, 3 CSW, 1 MSM, 1 homosexual were found here. Tourism can be the main reason for the transmission of HIV reported by Blanchard (2005), Dunn et al, 1995, David Gisselquist (2004), Elias and Heist (1994). Kanyakumari is also a main tourist place in Tamilnadu. Government had placed one ARV centre in this district.

5.9. Karur

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affected with HIV. The main way of transmission is through is heterosexuals. The ARV centre established in Karur district

5.10. Krishnagiri

HIV infection was observed in krishnagiri district for heterosexuals. In 34 cases, mother to child transmission was observed. Mother to child transmission was the main cause of infection in children. Similar findings were reported by Supriya Sahu (2007).

5.11. Madurai

In the present study, it was interesting to note that all occupational status are equally affected with HIV. It was found that heterosexual transmission was very high. 7 members were infected with HIV by unknown reason. This due to the fact that, Madurai is one of the tourist centres in Tamilnadu. One of the biggest Government hospital (Rajaji GH, Madurai) was situated in Madurai and peoples from various part of the state were approaching for them better treatment. The increased rate of infection through migrated peoples. It was also one of the Major ARV centre in Tamilnadu.

5.12. Nagapatinum

Control measures and treatment was highly utilized by the people, due to the educational status and awareness programs. The rate of infection very low in this district. According to the present investigation, only daily labours alone infected with HIV when compare to the other occupational status.

5.13. Namakkal

In the present study, it was found that rate of drivers are very high in Namakkal because it was an industrialized area. They are migrated people and are the main reasons for the transmission of HIV in this district. HIV infection was found to very high in

5.14. Perambalur

It is one of the most backward areas in Tamilnadu. It was found that educational status was very low. It is found that, the daily labours and quarry workers are highly affected with HIV. 4 casual sex workers and 1 homosexual person were found in Perambalur. There was no ARV centre in Perambalur, still the number of people utilized the nearest ARV centre is found to be satisfactory.

5.15. Pudhukottai

Both the literate and illiterate people are equal in Pudhukottai district. Daily labour, house wives and quarry workers were mainly affected with HIV infection, 34 mother to child transmission and 2 unknown cases were identified.

5.16. Ramnad

Illiteracy is the major problem faced by the Ramnad district. Here major mode of transmission is sexual. 3 homosexual, 1 CSW and 3 MSM were recorded from this district. One of the major ARV centre was available here, 1 unknown mode of transmission was also recorded.

5.17. Salem

In the present investigation reveals that 16 CSW’s were found in Salem. 2 blood transmission cases were identified. The mean value of HIV infected was highly increased in Salem district. The number of infected Government employers and tailors was
decreased. Salem district was ranked in 3rd position for HIV infection. CSW is one of the main reasons for the transmission of HIV. Similar findings made by Woodman (2003), Singh et al, (2003), SNP+ 2004.

5.18. Sivagangai

Two CSW were identified from this district. 22 cases of mother to child transmission and heterosexual mode were also reported from Sivagangai. Daily labours and house wives are mainly affected with HIV.

5.19. Thanjavur

Thanjavur was highly attracted by tourist and it was one of the pilgrim centres in Tamilnadu. This increased the risk of getting infection from the migrated people from different parts of the country. According to the present investigation one MSM, one CSW and one homosexual were found. One of the main ARV center was found here and 273 people were utilized ART.

5.20. Theni

The investigation recorded that, decreased number of literate people was found in Theni. 16 CSW’s and 1 homosexual person was identified in Theni. Among quarry workers the highest number of infected people was found in Theni. Only one case of infection through blood transmission was reported from this district. One ARV centre was located in Theni. Recently a Government hospital was established with highly sophisticated facilities for the better treatment, peoples from the various parts of the states were migrating. It was one of the major ARV centre in Tamilnadu. Similar report was submitted by TDNP+ (2006) and TANSACS (2006).
5.21. Thiruvallur

Among 485 people, 238 were utilized ARV. 4 CSW, 30 mother to child, 2 MSM were reported from the Thiruvallur district. The main mode of transmission was through sexually.

5.22. Thiruvannamalai

Thiruvannamalai is one of the tourist places in Tamilnadu. Migrated peoples are commonly affected with HIV. Here also daily labours and quarry workers are mainly affected. 19 cases of mother to child transmission were identified from this district. Only sexual transmission was commonly seen.

5.23. Thiruvarur

21 cases of mother to child transmission were identified. Daily labours and quarry workers were mainly infected with HIV. One CSW was also reported from this district.

5.24. Trichy

Trichy is one of the major city in Tamilnadu and the biggest GH with ARV centre was available. In the present investigation, literate people were very high compared to illiterate. The infection was only transmitted through heterosexuals. Among the cities the number of HIV infected people was low. Because more than 3 NGO and 1 positive network was available here, through this awareness were created. According to TDN+ (2005) and TANSACS (2006), due to higher amount of literacy people and awareness, HIV infection was decreased in Trichy.
5.25. Thirunelveli

7 MSM were found to be HIV infected in Thirunelveli. One of the major ARV centre was situated in this district. According to this investigation 294 people were utilized ART. 7 homosexual cases were recorded from this district. Thus it was placed in 7th position in HIV infection.

5.26. Tuticorin

According to this investigation, 6 MSM and 6 homosexuals are found here. Compared to other occupational status daily labours are highly affected. Among the 14 ARV centres, one of them was established here. Mean value of 219 people were utilized ART. 3 blood transmission cases are also reported from this district.

5.27. Vellore

Vellore was one of the major city established with medical facilities. Multi specialty hospitals were found here. The number of HIV infected people was very low due to the awareness, utilization of control measures and literacy. ARV centre was also found in vellore district.

5.28. Villupuram

The educational status of the people is very high. This district has only very low number of HIV infected people. Among the 29 people, 20 were utilized ART. 4 mother to child transmission were identified. Main mode of transmission is through heterosexuals.

5.29. Virudhunagar

It was interested to note that the number of CSW (mean value of 91) was high compared to other district. 2 MSM were also identified from this district. 2 transgender and 2 homosexuals were reported from Virudhunagar. The educational status of the
people was very low. 1 unknown mode of transmission was also identified. The main mode of transmission was through sexually. Daily labours, business peoples and house wives were mainly affected. CSW was one of the main modes of transmission of HIV infection. This investigation was similar to WHO (2005), UNAIDS (2002), Wig et al, (1998), Sanchita Sharma (2007).

5.30. Occupation

The occupation data showed daily labours have more HIV infection than others. This is because the literacy ratio is very less when compare to others. The most affected district based on type of occupation is Namakkal because the number of daily labours and drivers are high. Madurai comes next where as Salem comes third. The reason for HIV infection is because of the literacy ratio. These districts having less literacy and number of daily labours, quarry workers and Drivers are high. The data of female occupation showed the house wives are mostly affected than casual sex workers. Because house wives are mostly getting their infection mainly by sexual mode from their husband or vertical mode during the time of pregnancy by using unsterilized materials. Based on the occupational status, the number of HIV infected people was varied. Similar statement reported by Bozzette, 2000 and Gelmon and Singh, 2006.

5.31. Mode of transmission

Mode of transmission of HIV infection indicated that mostly they are transmitting through sexual mode and by mother to child transmission. This investigation was similar to Supriya sahu (2007). In Namakkal district nearly 1753 are infected with HIV by sexual mode. Where as Villupuram having 25 HIV infected patients by sexual mode. The data
showed that among 17,033 infected patients in all districts, 15,941 are infected by sexual mode, 1042 infected by mother to child transmission and 30 infected by blood transmission.

5.32. Physical exercise

Being HIV positive is no different from being HIV negative when it comes to exercise. Regular exercise is part of a healthy life style. For those individuals needing inspiration or affirmation that exercise should be part of their daily routine (David Kietrys, 2004). Increased muscles mass that can boost the total amount of energy, the patient's body produces. In turn, elevated energy levels can enhance the immune system even more. Some HIV medications increase the amount of fat in that blood but exercise can help protected against the associated risk of heart disease. Disability assessment and rehabilitation intervention have implications for specific stages is of HIV disease, with the intention of maximizing over all function and decreasing the burden of care.

Early in the AIDS epidemic, HIV positive persons had many health problems. They often had trouble keeping their normal weight and muscle mass. People wasted away and died. Now that anti HIV drugs become available, many long time survivors have stronger immune systems. Newly infected persons have hope for a normal lifespan, if they take care of their bodies. The amount of exercise can reduce risks of developing coronary heart disease, high blood pressure, colon cancer and diabetes (Bennell et al., 2002, David Kietrys, 2004, Galantino and Reynolda 1995 and Glenn, 2001).

Aerobic exercise

Two types of exercise are resistance training and aerobic exercise. Resistance training some times called strength training helps to build muscle mass. Aerobic exercise
is importance because it can help offset the loss of muscle some times caused by the disease. This form of exercise involves exertion of force by moving (pushing or pulling) objects of weight. They can lift barbells, dumbbells or machines in gyms. Common household objects such as plastic milk containers filled with water or sand can use own body weight in exercise such as push – ups or pull- ups. The purpose of resistance training is to build muscle mass.

In the present investigation Physical exercise therapy had been given to volunteers in three sets. I set consist of patients under going only Physical exercise. The number of patients taken for I set was to 10 second set consist 10 patients undergoing both herbal and physical exercise. III set (10 patients) were undergone physical and ARV therapy. Last set patients were kept as control those who undergoing ARV (10 patients) therapy only. CD4+ count of each patient was analyzed patients those who have 200 and below were chosen and regular exercise by the consultant Doctor, were given to each patients according to health condition of each patients. Step wise exercise was given for resistance to increase CD4+ count. Comparing with the data of physical exercise, It was clearly evident that physical exercise alone increased CD4+ count 578 during the course of six months where as the herbal treatment of some with physical exercise showed increased CD4+ count 606 when compare to physical exercise and ARV treatment (CD4+ count 580). ARV treatment alone increased CD4+ count 527 during the course of six months. This level may best, as the stress of more intense workout or competitive sports might have an adverse effect on people infected with HIV. Regular exercise maintains or builds muscle mass, reduces cholesterol and triglyceride levels (less risk of heart disease), increases energy, regulates bowel strengthen bones(less risk of
osteoporosis), improves blood circulation, increases lung capacity, helps with sound, restful sleep, lowers stress improves appetite. Exercise may come easily to people who have always exercised or participated in sports. However if the patients have never exercised regularly, exercise may seem like learning a new language. In an ideal world one could hire a fitness professional who works with people with HIV to design a programme that is perfect for infected individuals. However not all fitness professionals know about the special needs of some one with HIV or one may not be able to afford one.

Aerobic exercise strengthens lungs and heart. Walking, jogging, running, swimming, hiking and cycling are forms of this exercise (Galantino et al., 1998). This movement increases the rate and depth of breathing, which in turn increases how much blood and oxygen of heart pumps to muscles. To achieve the maximum benefit of this kind of exercise, should reach heart rate the target rate for atleast 20 minutes. Schlenzig et al., 1993, Green and Bennell (2003), Hammel and Rieder (2005). From that each of one will come to exercise with a diffused level of fitness and a different attitude toward exercise. HIV treatment may also determine what types of exercise are appropriate for infected one. Exercise can play a role in controlling some of long term side effects such as altered composition and elevated cholesterol, triglyceride and blood glucose.

5.33. HERBAL EXTRACT

Bitter melon, widely used as food as well as medicine in Tamilnadu. The Bitter melon is an anti diabetic, which is believes to increase the number of beta cells by the pancreas. The fruit juice of momordica was found to significantly improve the glucose tolerance of 73% of the patients, with these findings the current study was performed to
treat HIV infection. (Leatherdal et al., 2002) A water soluble extracts of the fruits significantly reduced blood glucose concentrations during a 50 gram oral glucose tolerance test in the diabetics and after force feeding in the rats. Investigations were carried out to evaluate the effect of momordica (bitter melon) on the glucose tolerance of maturity onset diabetic patients (Welihinda et al., 2002).

Bitter melon contains an array of biologically active plant chemicals including triterpenes, proteins and steroids. Laboratory studies have shown that a protein in bitter melon called MAP 30 may have antiviral activity. The antiviral activity of plant extracts have been proved in recent studies (Jill Davis, 2000, Che - yi Chao and Ching -Jang Hung, 2003) showed that the herbal approaches stimulate the immune system and this produce more immune cells and immuno chemicals. The specific use of antiviral herbs disrupts the replication cycle so the virus cannot survive. The anti HIV activity of the plant substances is discussed according to the mechanism of action, (Cos et al., 2001, Grover and Yadav, 2004, Tursi and Jermyn, 2002 targeting the critical steps of the HIV replicative cycle.

Extracted plant protein was given to HIV infected volunteers in various concentrations like 30ml, 40ml and 50ml daily in the morning. CD4+ count was monitored. The result showed that CD4+ count in Herbal therapy (single therapy) was less when compared to double therapy (herbal + physical exercise). During the first month of observation, the change is not observed in CD4+ count. During the course of 6 months, the count increased to average of 505 to those patients who were given 30ml of herbal extract. But the double therapy showed average of 537 where as ARV therapy showed 517 among the volunteers.
In case of 40ml dose, CD4+ count was raised up to 527 where as dual therapy showed average of 582 and ARV therapy showed average of 527.

50 ml dose of CD4+ count revealed that the count rose up to 526 where as dual therapy count raised up to 630 and ARV treatment showed that the count was same during the course of six months treatment. Comparative studies showed that the CD4+ count was higher in dual therapy (herbal + physical exercise) where as ARV comes next and single therapy that is herbal it comes third.

According to Silvia lee – Huang et al., (1991) a purified protein comprising a MAP 30 protein obtainable from the fruit or the seed of the plant Momordica charantia, having a molecular weight 30 KD or sodium dodecyl sulfate poly acrylamide gel electrophoresis and including the amino acid sequence. This protein having anti HIV activity in vitro in p24 expression or reverse transcriptase assays The above said dose are based on traditional scientific theories, or limited research. This investigation also proved the same.