

**HIV sero prevalence Study among inmates of Welikada Prison**

**National STD/AIDS Control Programme, Sri Lanka**

**July 2011**

## 1. Introduction

Prisoners tend to be among the most marginalized and discriminated against populations in society due to the concentration of people such as injecting drug users (IDUs) and sex workers, among whom HIV prevalence is much higher than in the general population. Incarceration may be the only point of contact with the healthcare system for many in this transient and often inaccessible population. Given the high prevalence of HIV and the public health impact of undiagnosed infection on both the individuals and the communities they return to, HIV testing within prisons and jails is critically important. With the risk of transmission highest among the untreated and undiagnosed when viral loads are high, as well as the demonstrated decrease in risk behaviours after diagnosis, testing for HIV has both individual and public health benefits.<sup>[1]</sup> HIV prevalence in prisons is often significantly higher than in the general population. While most prisoners living with HIV contract their infection outside the institutions before imprisonment, the risk of being infected in prison through sharing of contaminated injecting equipment and unprotected sex is great, and contributes to further transmission of the virus.<sup>2.</sup>

Prisons do not exist in isolation from the community. The majority of prisoners return to the cities and towns they came from. Resumption of risk behaviours such as unprotected sex and drug injecting shortly after release from prison is common. HIV-positive prisoners, who may be unaware of their HIV status, risk passing the virus on to their sexual partners and those with whom they share injecting equipment. The high

degree of mobility between prison and the community also means that other sexually transmitted infections (STIs), communicable diseases and related illnesses transmitted or exacerbated in prison do not remain there.

Although prisoners are necessarily denied some basic rights such as freedom of movement, they retain all other human rights, including the right to health and to be treated with dignity. HIV prevention, care and treatment programmes must have as their basis the promotion of and respect for human rights. Prisoners have a right to receive health care of the same standard available to the general community, including preventive measures.

Advances in HIV prevention and care for the incarcerated community will require an accurate and timely description of the magnitude of the HIV epidemic in correctional settings. These data are needed to guide programmatic efforts to reduce HIV transmission in prisons and the jails and in the general community upon release and ensure needed risk reduction and health care services for incarcerated persons<sup>3</sup>.

At any given time, there are over 37,000 people in 34 prisons in Sri Lanka, with an annual turnover of 37,000 moving from prison to the community and back again<sup>4</sup>. When people living with HIV are released from prison and return to their communities, their partners face an increased risk of HIV infection and may not be aware that they are at risk. The extent to which this is the case cannot be underestimated.

## **2. Aim and Objectives**

This study aimed at estimating the sero prevalence rate of HIV among inmates of Welikada prison.

## **2.1. Objectives**

- To assess the VDRL test status among inmates of the Welikada prison
- To estimate HIV sero prevalence rate among inmates of the Welikada prison
- To study the basic demographic characteristics by HIV ,VDRL sero status among inmates of the Welikada prison.

## **3. Method**

This was an institutional based cross-sectional descriptive study .

### **3.1. Study Setting**

Among 34 prisons in Sri Lanka, Welikada prison shelter to the highest number of prisoners. There were 4000 male inmates and 600 female inmates at the time of planning this research. After series of discussions with the prison authorities and the officials of the National STD/AIDS Control Programme, individual prisoner codes were obtained to prepare the sampling frame.

### 3.2. Participants

The following inclusion and exclusion criteria will be used when selecting participants:

1. Prison inmates remand, convicted, unconvicted in the Welikada prison  
exclusion criteria:
2. Prison inmates who do not have the capacity to give informed consent .

### 3.3 Sample Size

#### Background information, assumptions & requirements

Estimated prevalence of HIV – 1.0%

Number of male inmates ~ 4000

Number of female inmates ~ 600

Non response rate – 10%

Acceptable width of 95% confidence interval – 1.5%

#### Sample size

Required sample size for males – 645 (calculated size 643 rounded to 645)

Required sample size for females – 355 (calculated size 354 rounded to 355)

The following formulae were used for the calculation

$$n_0 = \frac{z^2 (pq)}{d^2}$$

$n_0$  – Required sample size without finite population correction

Z – 1.96 (for 95% CI)

p – Proportion to be estimated

q – 100 –

$$n = \frac{n_0}{1 + \left(\frac{n_0}{N}\right)}$$

n - Required sample size with finite population correction

N – Size of the population

### 3.3. Procedures

A random sample of prison inmates were recruited for this study. They were given group pre test information and awareness about HIV/STI. Verbal informed consent was sought before enrolment to the study by NSACP staff. Prison staff were kept away from the consent procedures. Prison inmates were explained about the voluntary participation and the right to dissent from the study on one on one basis. 5 ml of venous Blood samples were collected from the study participants under strict aseptic procedure. Extensive STI/HIV group awareness session conducted by a senior registrar in Venereology prior to the study enrolment. Leaflets about STI/HIV prevention were handed in to all the research participants. Blood drawing and all the documentation took place in a separate room. At the end of participation refreshments were provided to the survey participants.

Blood samples were safely transported to the NSACP reference laboratory and test results were kept confidential. Only the PI had access to this data. After five year period the data files will be destroyed.

Ethical clearance for the study received from the Faculty of Medicine Colombo ERC in November 2010.

Data collection spanned from December 2010 to February 2011.

#### **4. Ethical Issues**

Data collection was commenced only after obtaining ethical clearance from the Ethical Review Committee of the Faculty of Medicine of the University of Colombo.

The risks to participants are negligible in this study. There is a small chance that the participant may get upset discussing issues on STIs/HIV. However none of the participants stated that they have any distress due to study participation. VDRL test positive participants were referred to the central STD clinic for necessary follow up.

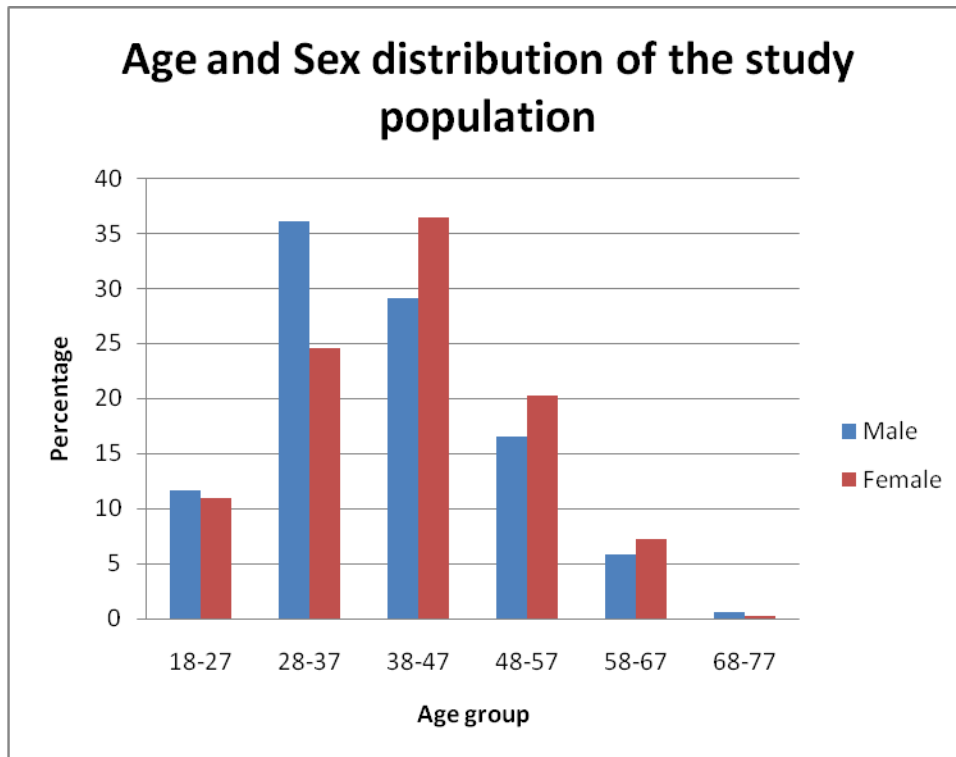
#### **5. Data Analysis**

Data was entered to the computer using Excel spread sheets and data was analysed using SPSS version 16 software.

#### **6. Results**

There were 640 male inmates and 345 female inmates among the survey participants. There were not a single non response in the survey.

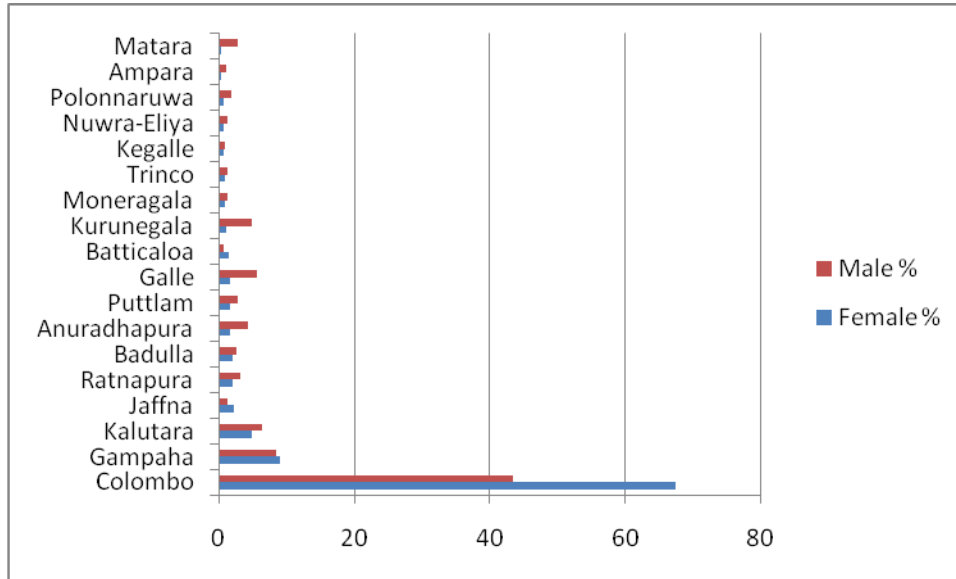
Figure 1.



Mean age of the male study participants was 39 years (range 19 – 73 years) while for females it was 41 years (range 18 – 72 years).



Figure 2: Distribution of study participants by District of residence



Majority of the study participants were from Colombo district (67.4% Males and 43.5% Females).

Table 1. VDRL,TPPA,HIV test results of the study population

Sex	Number VDRL and TPPA tests positive	Syphilis Rate	HIV positivity rate
Male	02	0.003(3 per 1000)	0
Female	12	0.03(3 per 100)	0

HIV screening test (ELISA test) carried out after delinking the specimens.

Unlinked anonymous testing method for the HIV testing was adopted as the Prison authorities requested to do so as they can't assure adequate confidentiality in the

prison setting. However all the blood samples reported negative for HIV. Thus sero prevalence of the study population for HIV estimated to be zero.

## **7. Conclusions**

Among prison inmates at Welikada prison Syphilis infection rate found to be 3/1000 among male inmates and the same for the female detainees was 10 times higher (3/100).

However the HIV prevalence rate among both male and female detainees was zero.

## **8. Recommendations**

Observed low prevalence of STI and HIV infection rates among prison inmates at Welikada prison need to be maintained. Continuous and regular behaviour change and modification programmes in relation to STI/HIV control and prevention for the prison detainees need to be carried out.

Prison authorities should take the ownership of these programmes and coordinate with the National STD/AIDS Control Programme.

## **Acknowledgement**

The National STD/AIDS Control Programme wishes to thank the World Health Organization for funding the survey.

We appreciate valuable guidance given by Professors S. Sivayogan and A. Pathemshwaran in all stages of this survey.

The Commissioner General and staff of the Department of prisons are acknowledged for their co-operation in planning, implementation all stages of this survey.

Prison hospital staff for their valuable inputs are acknowledged with gratitude.

Senior registrars, Medical officers PHIs Nursing officers, Data entry operators, Public co-ordinating assistant, Cinema operator, Drivers and all the staff attached to the National STD/AIDS Control Programme

Last but not least, all the participants of this survey are acknowledged with special thanks.

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