Population size estimation of most at risk populations for HIV epidemic: A success story of multilateral partnerships in Sri Lanka

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1. Introduction

One strategy of the National STD/AIDS Control programme (NSACP) to achieve a low level HIV epidemic in the country is the multisectoral, multidimensional approach. The NSACP has worked with a variety of agencies including non-health sector government sectors, United Nations (UN) agencies, funding agencies, civil society organizations (CSO) and various local and international academic organizations towards this end. As of end December 2009, the estimated number of people living with HIV and AIDS in Sri Lanka is 3000 and the adult prevalence rate < 0.02%.[1] Furthermore, it is estimated that a total of 350 new infections occur each year (approximately one new infection per day).[1] The cumulative total of HIV cases reported since 1987 up to end of 2010 is 1317.[2]

Developing multilateral partnerships have been recognized as an effective way to scale up HIV/AIDS interventions and to enhance the effectiveness of programmes.[3] This article describes a success story of multilateral partnerships for determining the population size estimations of most at risk populations (MARPs) for HIV epidemic in Sri Lanka.

Sri Lanka is a middle income, multicultural and multi ethnic country with a wide range of social and cultural values and norms embedded in lives of people. However, with the influence of changing socio-economic scenarios and effects of urbanization and industrialization, it has been observed that the country is gradually shifting away from some of the traditional social values and norms and people becoming more vulnerable to behaviours that are favourable to the transmission and acquisition of conditions like sexually transmitted infections including HIV and AIDS.

In this back drop the first challenging task of National STD/AIDS Control Programme (NSACP) is to reach out people practicing high risk behaviours for the spread of HIV and bring about effective and sustainable behaviour change communication (BCC) interventions in order to protect them from sexually transmitted infections including HIV. The next challenge is to reach them in adequate numbers in order to achieve the acceptable rates of coverage which are estimated to prevent new infections.

The experts recommend that national programmes should increase the coverage to 80% of the most at risk populations and 60% should use condoms consistently to prevent the occurrence of new HIV infections.[3] In order to achieve this target the primary requirement is to know the size of the populations most at risk to HIV infection. Furthermore knowing the size of the population groups at risk would help to convince the policy makers on the existence and the magnitude of the sub populations at high risk to adopt effective policies and mobilize resources. In addition, coverage of the MARP by identified interventions is an important monitoring and evaluation indicator and is useful in making national HIV estimates and projecting HIV trends over time. However, it is a challenging task to obtain realistic population sizes especially among hidden populations in a society with a low level HIV epidemic.

The objective of this population size estimation study was to provide information on the size, characteristics of vulnerable key populations and projection for a national estimate through a comprehensive mapping intervention.

2. Methodology

Various methodologies have been recommended for the estimation of populations. Some are mapping-based methods such as census, geographic mapping, network mapping and enumeration methods, survey-based multiplier method, capture-recapture method and network scale up methods. Yet, all methods have its own credits and discredits when applying to a particular scenario. Application of more than one methodology increases the precision of the estimate.

It is well known that the behaviour factors are the risk for HIV infections. However, it is difficult to identify people and population groups using the behaviour attribute alone. Therefore, it is prudent to use societal and behavior related attributes to demarcate and identify these population groups. According to the sentinel surveillance and behaviour surveillance survey and ad hoc surveys carried out in Sri Lanka, it has been identified that risk behaviours are more concentrated among female sex workers (FSW), men who have sex with men (MSM), beach boys (BB), prison inmates and narcotic drug users.

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The NSACP sought the technical support of the Centre for Global Public Health, University of Manitoba for selection of the methodology and training of data collectors. Mapping by census approach was selected to estimate population sizes of female sex workers (FSW) and men who have sex with men (MSM) in Sri Lanka. Necessary funds were supplied by the UN partners such and the Joint United Nations Programme on HIV/AIDS (UNAIDS), United Nations Population Fund (UNFPA) and the World Bank (WB). Data collection was carried out by two civil society organizations (CSOs) that represent FSW and MSM. Coordination of the data collection was done under the technical support from NSACP. A steering committee was set up to coordinate this project and it comprised of members from National STD/AIDS Control Program, Ministry of Health, Civil society organizations (Community Service Development Foundation (CDSF) and Companions on a Journey) and representatives from World Bank, UNFPA, UNAIDS and the Centre for Global Public Health, University of Manitoba.

Based on review of epidemiological and feasibility factors, the research team in partnership with all stakeholders decided to implement this survey in the districts of Anuradhapura, Colombo, Batticaloa and Nuwaraeliya.

Study design was the mapping-based method which include initial mapping of FSWs and MSM hot-spots by site, number and typology followed by final quantification. Data collection was done by using two data collection forms for MSM and three for FSWs. These data collection tools were developed after broad base consultation with stakeholders and they were field tested among FSWs and MSM community groups before administration.

After pre-mapping stage of map studying and zone demarcation, two levels of data collection were carried out. The objective of the level one data collection was to identify hot spots while level two is to validate the identified hot spots for existence, activity, number and typology.

Finally data were analyzed by using pivot table facility in Excel and use of SPSS.

3. Results

The following results of size estimation unveiled the real size of FSWs and MSM populations in some selected district in Sri Lanka which need to be further expanded to include all districts for a better reflection of the reality on the ground. 4

Table 1. Estimates for Female Sex Workers (FSW) by district - 2009/2010

District	Average number	Range
Anuradhapura	1138	(991-1285)
Colombo	8332	(7367-9297)
Batticaloa	880	772-987
NuwaraEliya	1333	(1151-1515)

Table 2. Estimates for Men who have Sex with Male (MSM) by district - 2009/2010

District	Average number	Range
Anuradhapura	729	(615-844)
Colombo	8630	(7339-9918)
Batticaloa	570	(467-672)
NuwaraEliya	1007	(823-1189)

Based on four district data National estimates were calculated for the female sex workers (FSW) and men who have sex with men (MSM).

Regression model approach and percentile approach were used to estimate the number of FSWs and MSM for the entire country. Using the regression model approach, a mean number of 40,791 FSWs was estimated for the country (range 34,547 to 47,035), and a mean of 30,554 MSM (range 23,699 to 37,410). 5

Using the percentile approach, the medium estimate for FSWs for the country was 47,739 (range 28,542 to 54,564), and the medium estimate for MSM was 22,652 (range 12,549 to 30,475). 5

4. Discussion

The much needed sizes of the populations most at risk for HIV infection in the country was calculated using this study methodology. The policy makers, donors and implementers are now in a position to understand the magnitude of the sub populations that need to be reached out for a comprehensive package of prevention interventions in order to achieve the universal access targets for prevention, treatment care and support for HIV and AIDS. The mapping exercise has provided the staff of the NSACP with practical experience to scale up this exercise in other districts of the country and make district level estimates and use such data for future national estimates and determining the scale to which coverage of interventions have been achieved. This is the first time that

the size estimation of MARPs was carried out in the country using new technological approaches. We consider this a success story in Sri Lanka which could be replicated in other Asian countries.

5. Conclusions

This study has shown the usefulness of coordination and multi lateral collaboration and partnership with public, civil society and development partners to generate strategic information for policy planning and implementation of HIV/AIDS interventions and programme management. This success story could be shared with all partners in the field to work towards zero new infection of HIV in Sri Lanka.

6. References

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