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**Title: Awareness and Attitudes toward HIV/AIDS among Residents of Kandy, Sri Lanka**

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## **Abstract**

Currently, interventions for HIV/AIDS control in Sri Lanka are only carried out among the most-at-risk populations. This study was conducted to identify the level of awareness and stigma related attitudes among the general population of Sri Lanka. A cross-sectional study was carried out among 869 residents of 18-64 years of age in Kandy, Sri Lanka. A self-administered questionnaire was utilised to obtain information about stigma, discrimination and HIV/AIDS-related knowledge. Chi square test and multivariate analysis were applied to find possible associations between HIV-related variables and socio-demographic indicators. Response rate was 82.0%. Overall, 93.5% of the participants have heard of HIV/AIDS but the knowledge on HIV/AIDS was low with an average score of 51.7%, no statistically significant difference between genders ( $p=0.352$ ). Only 58.1% were aware that a condom was an effective tool for its prevention. There were many misconceptions related to epidemiology of HIV/AIDS. The participants showed more positive attitudes towards HIV/AIDS and people living with HIV/AIDS (PLHIV) for all questionnaire items except for those listed under shame and blame. Positive attitudes towards PLHIV were observed to be greater among those with a better HIV/AIDS related knowledge score. There was no significant association between the attitudes towards PLHIV and socio-demographic characteristics such as ethnicity and religion. There is a greater need of making attempts towards educating the public regarding HIV/AIDS to eliminate misconceptions prevalent in the society. Stigma related attitudes are mainly due to shame and blame associated with the disease. As the attitudes towards PLHIV were more positive among those with a better HIV/AIDS related knowledge score, targeted HIV/AIDS-related health education interventions maybe recommended in this regard.

Keywords: awareness; attitudes: stigma; general population; Sri Lanka

## **Introduction**

Health-related stigma can be defined as “a social process or related personal experience characterized by exclusion, rejection, blame or devaluation that result from experience or reasonable anticipation of an adverse social judgement about a person or group” (Weiss & Ramakrishna, 2006). In health-related stigma, this judgement is based on an enduring feature of identity conferred by a health problem or health related condition. Stigma is linked to poor knowledge on HIV, inadequate accessibility to antiretroviral therapy, misconceptions and fear of the disease due to the serious nature and fatality associated (Castro & Farmer, 2005; Genberg et al., 2008; Ulasi et al., 2009). It is known that HIV-related stigma reduces an individual’s willingness to disclose his/her HIV status, voluntary HIV testing, seeking and adhering to treatment, access to care and support (Singer, 2007). However, stigma and discrimination are particularly poorly understood in resource constrained, low HIV/AIDS prevalent countries such as Sri Lanka. Therefore, the purposes of this study were to determine the knowledge and attitudes towards PLHIV among the general population in Sri Lanka and to understand practices useful in developing the prevention and control strategies for HIV/AIDS in the country.

## **Methods**

A cross-sectional survey was conducted among the residents of Kandy, Central Province, Sri Lanka, in September 2010. The population of Kandy in 2005 was 118,305 (Department of Census and Statistics of Sri Lanka [DCS], 2006). Sri Lanka is a multi-ethnic and multi-religious country and the population of Kandy represents all races and religions. All the residents above 18 years of age, living within the Kandy municipality were considered eligible for the study. A sample of 869 was selected using a two-stage sampling technique. In the first stage, six ‘public

health midwife areas' were selected in the municipality. Then rows of households were randomly selected and household residents in every other household were surveyed. Response rate was 82.0%.

A structured questionnaire was developed after a thorough literature review on the similar surveys conducted in Sri Lanka and other countries (Castro & Farmer, 2005; Genberg et al., 2008; Genberg et al., 2009; Kanda et al., 2009; Kanda et al., 2010; Parker & Aggleton, 2003; Ulasi et al., 2009; van Brakel, 2006). The questionnaire included various questions on socio-demographic variables, knowledge of the participant on HIV/AIDS, attitudes related to stigma and discrimination, and practices related to HIV/AIDS. Particularly, the attitudes related to stigma and discrimination were assessed using questions on fear of infection, shame and negative attitude, relationship with PLHIV, exposure resistance and discriminatory attitudes towards those living with HIV/AIDS. The questionnaire was formulated in English, translated into Sinhala and Tamil, and then back-translated into English. It was self-administered to the participants at their own houses by trained interviewers. Written informed consent was obtained from all participants and anonymity was maintained throughout the study. Ethical clearance for the study was obtained from the Ethical Review Committee at the Faculty of Medicine, University of Peradeniya.

The data were analysed using SPSS Ver. 14.0. Chi-square test was used to ascertain statistical significance. As the significant associations were observed between HIV/AIDS-related variables and socio demographic factors, multivariate logistic regression analysis was performed to identify possible associations between the attitudes towards those PLHIV and socio demographic factors by controlling confounding effects of third variables.

## Results

After cleaning the data, 713 out of 869 in the original sample were used as the valid sample for analysis (Table 1). Most participants (93.5%) have heard of HIV/AIDS and 9.8% have acknowledged that they know PLHIV. Overall, the knowledge on HIV/AIDS was low and the average correct response rate was 51.7%. The knowledge on epidemiology was in particular poor, such as the mode of transmission including mosquito or tick bites (58.4%) and staying with people who have HIV/AIDS at school or workplace (40.7%).

[Table 1 near here]

They were more likely to show positive attitudes toward HIV/AIDS and PLHIV except for those items under shame and blame. More than a half of the respondents (58.2%) claimed that they would like to support the PLHIV. About 75% of both genders felt shame on the infections with HIV of own and family, while more than 50% to 70% blamed PLHIV. However, gender was found to be significantly associated with three of the HIV/AIDS-related attitude items. Males showed more positive attitudes towards ‘PLHIV for bringing the disease to the community’ (item 11) ( $p=0.026$ ) and ‘PLHIV to be treated in the same way as others in the community’ (item 13) ( $p=0.011$ ) (Table 2). However, their attitude was more negative than the females where the 15<sup>th</sup> item was concerned, i.e., ‘keeping own infection a secret’ ( $p=0.015$ ) (Table 2).

[Table 2 near here]

Logistic regression analysis showed no significant associations between the positive attitudes and the major socio-demographic factors. In contrast, statistically significant more positive attitudes were observed among those who scored high for HIV/AIDS related knowledge questions by adding knowledge score as an independent variable (adjusted odds ratio=1.174; 95% confidence interval: 1.124-1.229).

## **Discussion**

The attitudes of the participants towards HIV/AIDS and PLHIV were mostly positive except for the items under shame and blame. Similarly, the study on Iranians showed that the attitudes were mainly positive (Montazeri, 2005). For most of the attitudinal items, no significant gender difference was noted. Of the 713 participants, almost 76% responded that they would be ashamed if they were infected with HIV. The responses under discrimination were in particular positive. It was obvious that they valued equity as almost 69% agreed that PLHIV should be treated in the same way as the others in the community. On the whole, 58.2% felt they wanted to support PLHIV but around 40% were scared of sharing a room or a toilet with a PLHIV. The Afghan study also reported that 48.3% have shown a reluctance to share a public toilet with someone with HIV/AIDS (Mansoor et al., 2008).

Religiosity and sexuality have been found to be closely linked to each other, particularly in relation to certain aspects of sex related issues such as abstinence, birth control and abortion (Edwards et al., 2008; Lefkowitz et al., 2004; Nonnemaker, 2003). However, our study did not disclose any significant relationship between religion and the attitudes towards PLHIV. Some studies have shown that there is a significant positive association between educational level and the attitudes towards PLHIV (Chi-Chiao & Sambisa, 2008; Li et al., 2010; Tee & Huang, 2009).

This was not evident in our study. As there was a significant positive association between participants' attitudes towards PLHIV and HIV/AIDS related knowledge score, it would be beneficial to carry out targeted HIV/AIDS related educational programmes for those in all educational strata.

The sample studied is more or less similar to the general population characteristics of Sri Lanka. Though our study was confined to the residents of Kandy, the evidence gathered through this study remains significant and informative for the control and prevention programmes in the country. One limitation includes that, due to the nature of the sensitive topic that HIV-related stigma is often deeply rooted in one's subjective feelings, it is required to reveal one's awareness and attitude toward HIV/AIDS not only by quantitative but qualitative research, such as a mix-method approach. This could be the direction of further research particularly on Sri Lankan contexts.

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Tables:

Table 1. Socio-demographic characteristics of the study participants (n=713) in Kandy, Sri Lanka

Variables	Male	Female	Total
	n (%)	n (%)	n (%)
<u>Age (years)</u>			
18-19	34 (10.8)	24 (6.1)	58 (8.2)
20-29	79 (25.0)	92 (23.4)	171 (24.1)
30-39	70 (22.2)	129 (32.8)	199 (28.0)
40-49	73 (23.1)	86 (21.9)	159 (22.4)
50-59	44 (13.9)	45 (11.5)	89 (12.6)
60-64	16 (5.0)	17 (4.3)	33 (4.7)
<i>Total<sup>a</sup></i>	<i>316 (100)</i>	<i>393 (100)</i>	<i>709 (100)</i>
<u>Education level</u>			
Up to grade 10	39 (12.5)	43 (10.9)	82 (11.6)
Ordinary level	135 (43.1)	174 (44.2)	309 (43.7)
Advanced level	108 (34.5)	140 (35.5)	248 (35.1)
University or above	31 (9.9)	37 (9.4)	68 (9.6)
<i>Total<sup>a</sup></i>	<i>313 (100)</i>	<i>394 (100)</i>	<i>707 (100)</i>
<u>Religion</u>			
Buddhism	208 (66.2)	263 (66.8)	471 (66.5)
Hinduism	51 (16.2)	41 (10.4)	92 (13.0)
Islamic	42 (13.4)	69 (17.5)	111 (15.7)
Christianity	13 (4.1)	21 (5.3)	34 (4.8)
<i>Total<sup>a</sup></i>	<i>314 (100)</i>	<i>394 (100)</i>	<i>708 (100)</i>
<u>Ethnicity</u>			
Sinhalese	215 (68.0)	275 (69.6)	490 (68.9)
Tamil	59 (18.7)	51 (12.9)	110 (15.5)
Muslim	39 (12.4)	69 (17.5)	108 (15.2)
Others	3 (0.9)	0 (0.0)	3 (0.4)
<i>Total<sup>a</sup></i>	<i>316 (100)</i>	<i>395 (100)</i>	<i>711 (100)</i>
<u>Occupation status</u>			
Housewives	0 (0.0)	193 (51.0)	193 (28.2)
Private sector	31 (8.2)	89 (29.2)	120 (17.5)
Government sector	51 (13.5)	62 (20.3)	113 (16.5)
Self employed	19 (5.0)	55 (18.0)	74 (10.8)
Student	32 (8.4)	38 (12.5)	70 (10.2)
Unemployed	49 (12.9)	30 (9.8)	79 (11.5)
Others	8 (2.1)	28 (9.2)	36 (5.3)
<i>Total<sup>a</sup></i>	<i>380 (100)</i>	<i>305 (100)</i>	<i>685 (100)</i>

<sup>a</sup> The total number doesn't add up to 713 due to missing data.

Table 2. The participants' attitudes towards HIV/AIDS by gender (Kandy, Sri Lanka)

	Male			Female			p-value
	Agree	Disagree	Don't know	Agree	Disagree	Don't know	
	n (%)						
<b><u>Fear</u></b>							
1. Afraid of sharing a room with a PLHIV <sup>a</sup>	138 (43.5)	157 (49.5)	22 (6.9)	176 (44.4)	190 (48.0)	30 (7.6)	0.897
2. Afraid of sharing kitchen utensils	129 (40.7)	166 (52.4)	22 (6.9)	148 (37.4)	214 (54.0)	34 (8.6)	0.549
3. Afraid of sharing the toilet	126 (39.7)	170 (53.6)	21 (6.6)	169 (42.7)	184 (46.5)	43 (10.9)	0.058
4. Afraid of buying vegetable/food from a shopkeeper or food seller who has HIV/AIDS	127 (40.1)	171 (53.9)	19 (6.0)	164 (41.4)	190 (48.0)	42 (10.6)	0.058
5. Scared of caring for a family member who has HIV/AIDS	158 (49.8)	141 (44.4)	18 (5.7)	197 (49.7)	166 (41.9)	33 (8.3)	0.367
6. I'm scared to allow my child to play with a child who has HIV/AIDS	109 (34.4)	187 (59.0)	21 (6.6)	143 (36.1)	221 (55.8)	32 (8.1)	0.618
<b><u>Shame/Blame</u></b>							
7. I would be ashamed if I were infected with HIV/AIDS	247 (77.9)	59 (18.6)	11 (3.5)	308 (77.8)	64 (16.2)	24 (6.1)	0.221
8. I would be ashamed if someone in my family was infected with HIV/AIDS	240 (75.7)	66 (20.8)	11 (3.5)	297 (75.0)	75 (18.9)	24 (6.1)	0.225
9. People with HIV/AIDS should be ashamed of themselves	222 (70.0)	74 (23.3)	21 (6.6)	265 (66.9)	91 (23.0)	40 (10.1)	0.253
10. Acquiring HIV/AIDS is a punishment	174 (54.9)	111 (35.0)	32 (10.1)	230 (58.1)	115 (29.0)	51 (12.9)	0.176
11. People with HIV/AIDS are to be blamed for bringing the disease to the community	212 (66.9)	83 (26.2)	22 (6.9)	261 (65.9)	85 (21.5)	50 (12.6)	<b>0.026</b>
<b><u>Discrimination</u></b>							
12. I would discriminate people with HIV/AIDS	98 (30.9)	201 (63.4)	18 (5.7)	125 (31.6)	237 (59.8)	34 (8.6)	0.297
13. PLHIV should be treated in the same way as others in the community.	241 (76.0)	62 (19.6)	14 (4.4)	272 (68.7)	84 (21.2)	40 (10.1)	<b>0.011</b>
14. PLHIV should be allowed to work with others	188 (59.3)	109 (34.4)	20 (6.3)	212 (53.5)	149 (37.6)	35 (8.8)	0.221
<b><u>Exposure resistance</u></b>							
15. If I were found to be infected with HIV/AIDS, I would keep it a secret.	105 (33.1)	180 (56.8)	32 (10.1)	104 (26.3)	226 (57.1)	66 (16.7)	<b>0.015</b>
16. If any of my family members were found to be infected with HIV/AIDS, I would keep it as a secret	111 (35.0)	177 (55.8)	29 (9.1)	121 (30.6)	230 (58.1)	45 (11.4)	0.356

The shaded cells represent the positive attitudes in relation to stigma; <sup>a</sup>PLHIV= People living with HIV/AIDS.