# **Original Article**

# Knowledge, attitude and practice assessment of construction workers for HIV/AIDS in Sri Lanka

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#### Abstract

Background: Human immunodeficiency virus (HIV) prevalence is relatively lower in Sri Lanka than in other Asian countries; however, the number of HIV-infected persons has rapidly increased in recent years.

Methodology: A baseline study on HIV, acquired immunodeficiency virus (AIDS), and sexually transmitted infections (STI) knowledge, attitude, and practice was conducted at two construction sites in Sri Lanka from January to February 2007 to design an effective intervention strategy for the construction workers.

Results: Among 611 respondents (mostly males, mean age 32.8 years), nearly two-thirds lived away from home. Knowledge was fairly good on AIDS prevention but poorer on STI than on HIV. Some misconceptions were also observed. A high percentage did not consider HIV/AIDS as their own personal issue, and over 50% respondents expressed discriminatory attitudes towards HIV positives. Condom access was limited due to social and cultural norms. Mobility was not significantly associated with practice of prevention of HIV and STI.

Conclusion: This study showed that the construction workers were not specially at higher risk of HIV at that time. In order to minimize the potential risk of infection, however, it would be effective to reduce stigma and discrimination among them through the prevention program, working together with community or religious leaders in the areas. More comprehensive assessment among other population groups would also be beneficial to identify their risk of infection.

Keywords: KAP; HIV/AIDS; construction workers; Sri Lanka

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#### Introduction

As of the end of 2007, the estimated number of people over 15 years old who are infected with HIV in Sri Lanka is 3,800, and HIV prevalence is less than 0.1% [1]. Although HIV prevalence is relatively lower in Sri Lanka than in other Asian countries, the number of HIV-infected persons has rapidly increased in recent years, from 68 cases in 2003 to 129 in 2005 [2]. The cumulative HIV and AIDS cases at the middle of year 2008 are 996 and 274, respectively [3]. Risk factors such as low condom use, high STI prevalence, and domestic or international mobility are present in the country [4-5]; therefore, the future explosion of HIV to epidemic proportion might happen countrywide.

Construction workers may be vulnerable to HIV/AIDS. According to a document published by the International Labour Organization (ILO), they may have factors that increase the risk of HIV infection, such as mobility, working in geographically isolated and male-dominated environments, and working in a male-dominated profession [6]. In Asia, previous studies indicated that construction workers were characterized in general as male, less educated, young, single, and mobile [7-8]. They were more likely to engage in risky sexual behaviours including having multiple casual sex partners, having sex with commercial sex workers, and poor condom use [9-10]. Likewise, many construction workers in Sri Lanka are seasonal labourers, who move from one place to another from time to time. The National Strategic Plan for Prevention and Control of HIV/AIDS in Sri Lanka 2002-2006 prepared by the National STD/AIDS Control Programme (NSACP) did not include HIV/AIDS in the workplace [11]. Only short clauses on HIV/AIDS in the workplace were recently added in the new 2007-2011 plan [12], indicating that the activities focusing on HIV/AIDS targeting workers are still in the infancy stage.

On the other hand, many Asian countries have already responded in various ways to address HIV/AIDS in the workplace [13]. United Nations (UN) agencies have proposed to mainstream HIV/AIDS into various sectors and programs as its global action plan for prevention [14]. Employers must consider HIV/AIDS prevention as a part of their corporate social responsibility (CSR). In addition, it is important to achieve community participation in initiatives for the protection and safety of both construction workers and members of the community from HIV/AIDS [15].

The government of Sri Lanka recently developed the National HIV and AIDS Strategic Plan. The plan includes short clauses on HIV/AIDS in the workplace [12], but there has been no systematic study regarding HIV/AIDS and construction workers in Sri Lanka. Diverse ethnic backgrounds in Sri Lanka further complicate the socio-cultural factors that influence sexual behaviour. Particularly, in the next few years, Sinhalese workers may have more opportunities to engage in post-war resettlement projects after more than 25 years of battle in northeast Sri Lanka, where non-Sinhalese people are dominant. Thus it is important to obtain adequate information in order to develop appropriate HIV/AIDS intervention for them.

A baseline study was conducted to describe the HIV/AIDS-related knowledge, attitude, and practice (KAP) among workers and to identify the risk factors of HIV/AIDS at two construction sites in Southwest Sri Lanka.

# Methods

The study was implemented in the towns of Rathmanala and Althugama, Sri Lanka. Rathmanala is a high-population density area belonging to Dehiwala/Mt. Lavinia Municipal Council at the southern part of Colombo District, and the population in the council is approximately 210,000, as of 2001 [16]. Althugama is a suburban area located at 15 km south of Kalutara, the capital of Kalutara District. The population there is unknown, but there were approximately 37,000 people in the capital in 2001 [16]. In Rathmanala, an environmental improvement project around the lake was started in late 2005. The three-year project is currently in its peak period, with more than 500 construction workers engaged in drainage improvement. The construction project in Althugama, which has just started, is part of a highway construction that will connect two major cities. Colombo and Matara. There are less than 200 workers at the moment but approximately 1,000 people will be employed at the height of the project.

The study was conducted in January and February 2007. Among 687 workers, 611 agreed to participate in the study (response rate = 88.9%). Since the literacy level among Sri Lankans was 91.1% in 2001 [16], a structured self-administered questionnaire in English or Sinhalese was used. Face-to-face interviews were conducted for illiterate respondents and/or for those who were Tamil speakers. The questionnaire was about HIV/AIDS/STI knowledge, awareness, attitudes, and practices. The following items were also included as socio-demographic indicators: gender, age, marital status, level of education, religion, employment information, accommodation type, and daily activities. No other personal information such as name and address was obtained. The questionnaire was first developed in English, translated into Sinhalese, and back translated to English. Before the study, research assistants and interviewers were systematically trained. The questionnaire was distributed in the respondents' offices or project sites. After obtaining permission from their supervisors, they postponed their work and joined the study. Prior to the survey administration, written or oral informed consent was obtained from the participants. The study was approved by the ethical committees from Hokkaido University, Japan. Each respondent completed the questionnaire in approximately 15 minutes. When finished, the questionnaire was put in a sealed envelope and returned to the assistants or interviewers. The respondents were given a card containing contact information on the survey and a brochure about HIV/AIDS prevention in Sri Lanka courtesy of the ILO Sri Lanka office. No compensation was given for participation.

# **Statistics**

T-test and chi-square tests were applied to obtain the descriptive statistics. Odds ratios and 95% confidence intervals were calculated to compare the outcomes of two groups (travelling from own residence or not). Logistic regression analysis was also used to control potential confounders, such as age, marital status, educational attainment, and the type of occupation (either office worker or site labourer). EpiInfo<sup>IM</sup> Version 3.4. (30 April, 2007, Center for Disease Control and Prevention, Atlanta, USA) was used for the analysis.

Variables	ariables Subcategory	
Age	Mean (Range)	32.8
C		(16-72)
	Less than 30	303 (49.6)
	30 and above	276 (45.2)
	Missing	32 (5.2)
Gender	Male	592 (96.9)
	Female	15 (2.5)
	Missing	4 (0.6)
Marital status	Single	293 (48.0)
	Married	308 (50.4)
	Others (divorced/ widower etc)	6 (1.0)
	Missing	4 (0.6)
Level of education	Up to ordinary level	431 (70.5)
	Above ordinary level	150 (24.6)
	Missing	30 (4.9)
Religion	Buddhist	577 (94.4)
	Others	28 (4.6)
	Missing	6 (1.0)
Office vs. Field worker	Office	95 (15.5)
	Field	516 (84.5)
Previous work	Farmer	213 (34.9)
	Construction worker	90 (14.7)
	Factory worker	65 (10.6)
	None	78 (12.8)
	Others	137 (22.4)
	Missing	28 (4.6)
Current residence	Home	194 (31.8)
	Others	412 (67.4)
	Missing	5 (0.8)

**Table 1.** Characteristics of study population

#### Results

#### General information

Participants in the survey were 448 workers in Rathmanala and 163 workers in Althugama. The majority of the respondents were male (96.9%) with a mean age of 32.8 years with 49.6% below 30 years of age. Approximately half of them were single (48.0%). Nearly two-thirds of them reached an ordinary level education, and one-fourth finished at least advanced level curriculum. Buddhism was the most common religion (94.4%). Approximately one-third of the respondents (34.9%) were farmers before working in the current project. Only 14.7% were previously engaged in construction work. More than half of them have worked outside Colombo District. Most workers spent their income on family. One-third (31.8%) of the respondents travelled every day from their own residence to their workplace (Table 1).

#### Knowledge and awareness

Most respondents had heard about HIV/AIDS and STI (81.6% and 89.7% respectively). Around twothirds (67.0%) knew that HIV is the cause of AIDS. TV or radio was the most common source of information on HIV/AIDS and only a half of the respondents (51.6%) had read materials about AIDS. Despite the high awareness of STI (89.7%), most respondents could not identify the different types of STIs. Most respondents had no knowledge about the other modes of transmission and ways of preventing HIV/STIs. Particularly, only about a half was able to answer condom use (55.3%) and/or abstaining from sex (53.5%) as a preventive behaviour. Unsafe drug injection was poorly understood. Less than a quarter of the respondents recognized unsafe drug injection as a mode of transmission (21.8%), which was much

<b>Table 2.</b> Knowledge and awareness of HIV/AIDS among study por	oulation
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Variables	Current residence (%)		Total (%)	Adjusted OR **	
	Home	Others		(95% CI)	
Ever heard about STI $(n = 593)$					
Yes	175 (90.7)	357 (89.3)	532 (89.7)	0.94 (0.50, 1.77)	
No	18 ( 9.3)	43 (10.8)	61 (10.3)		
Ever heard about HIV $(n = 580)$					
Yes	165 (87.3)	308 (78.8)	473 (81.6)	1.73 (1.00, 2.99)	
No	24 (12.7)	83 (21.2)	107 (18.4)		
Ever heard about AIDS ( $n = 561$ )					
Yes	167 (92.3)	317 (83.4)	484 (86.3)	2.70 (1.30, 5.58)	
No	14 (7.7)	63 (16.6)	77 (13.7)		
Knows that HIV is the cause of AIDS (n =	549)				
Yes	126 (70.4)	242 (65.4)	368 (67.0)	1.08 (0.70, 1.67)	
No	53 (29.6)	128 (34.6)	181 (33.0)		
Ever read materials about AIDS $(n = 524)$					
Yes	111 (62.0)	174 (50.4)	285 (54.4)	1.32 (0.86, 2.00)	
No	68 (38.0)	171 (49.6)	239 (45.6)		
A person will not get AIDS from:*					
Using condoms during sex	102 (52.6)	233 (56.6)	335 (55.3)	0.75 (0.51, 1.10)	
Abstaining from sex	114 (58.8)	210 (51.0)	324 (53.5)	1.22 (0.84, 1.78)	
Testing blood for AIDS prior to	62 (32.0)	93 (22.6)	155 (25.6)	1.59 (1.01, 2.48)	
transfusion					
Avoiding unsafe drug injection	30 (15.5)	64 (15.5)	94 (15.5)	0.72 (0.42, 1.24)	
A person can get AIDS from:*					
Sexual intercourse	160 (82.5)	347 (84.2)	507 (83.7)	0.73 (0.44, 1.21)	
Blood transfusion	84 (43.3)	170 (41.3)	254 (41.9)	0.90 (0.59, 1.38)	
An infected pregnant mother to baby	82 (42.3)	159 (38.6)	241 (39.8)	0.98 (0.65, 1.47)	
Unsafe drug injection	51 (26.3)	81 (19.7)	132 (21.8)	1.20 (0.76, 1.91)	

\*\*: Controlled by age, marital status, educational attainment, and occupation type. The reference category is those who do not travel to work from their own residences.

lower than sexual intercourse (83.7%) and mother to child transmission (39.8%).

: Multiple responses

There was no association between residence and level of knowledge on HIV/AIDS. Though those who travelled daily there from his or her own residence were more likely to have heard of HIV/AIDS, there were no significant differences between the two current residence groups as regards to the knowledge on the mode of transmission and the relationship between HIV and AIDS. However, there were significantly more respondents who travelled daily from their own residences who knew blood testing prior to transfusion was a preventive means of HIV infection (OR = 1.59, 95% CI: 1.01-2.48).

#### Attitudes

More than a half of the respondents (53.7%) answered that an HIV-positive person should not be allowed to work in the same workplace. Most thought that both male and female partners were responsible for avoiding HIV/AIDS transmission (89.4%). More than 85% of them were willing to

take part in HIV/AIDS prevention programs, and local public health officers/midwives were the most preferred to plan and implement the programs. About three-fourths (78.5%) of the respondents believed that they were not at risk of getting HIV and 70% thought that they were protected from HIV/AIDS; the most common reason cited was "no extramarital sexual relationship", but some answers included "because I am clean" and "religious living". Only a quarter of the respondents (25.9%) were willing to be tested for HIV/AIDS. A majority (85.0%) would prefer to consult a doctor/nurse about sex or STI. Doctors/nurses were likewise the most preferred HIV/AIDS prevention program providers.

Current residence was the only variable associated with having a discriminatory attitude against HIV-positive persons. Those living away from their own residences were more likely to avoid HIV-positive co-workers (OR = 2.20, 95% CI: 1.45-3.35).

Table 3. Attitudes toward	HIV/AIDS among	g study	popu	lation
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Variables	Current residence (%)		Total (%)	Adjusted OR **		
	Home	Others	-	(95% CI)		
A person with AIDS should be allowed to work in the same place as you work ( $n = 572$ )						
Agree	82 (44.6)	104 (26.8)	186 (32.5)	2.20 (1.45, 3.35)		
Disagree	83 (45.1)	224 (57.7)	307 (53.7)			
Don't know	19 (10.3)	60 (15.5)	79 (13.8)			
Who is responsible for avoiding STI or H	IV/AIDS? ( $n = 5$	78)				
Both partners	170 (90.9)	347 (88.7)	517 (89.4)	1.32 (0.68, 2.55)		
Either partner	8 (4.3)	17 (4.3)	25 (4.3)			
Don't know	9 (4.8)	27 (6.9)	36 (6.2)			
Willing to participate in HIV/AIDS preve	ntion program (n	n = 577)				
Yes	166 (87.8)	339 (87.4)	505 (87.6)	0.78 (0.43, 1.44)		
No	18 ( 9.5)	36 ( 9.3)	54 (9.3)			
Don't know	5 (2.6)	13 ( 3.4)	18 ( 3.1)			
Who should provide the prevention progra	amme? *					
Employer	37 (19.1)	65 (15.8)	102 (16.7)			
Local public health officer	138 (71.1)	304 (73.8)	442 (72.3)			
NGO	14 (7.2)	40 (9.7)	54 (8.8)			
Other	11 (5.7)	25 (6.1)	36 (5.9)			
It is possible for you to get HIV/AIDS (n=	=581)					
Yes	12 ( 6.1)	36 ( 9.2)	48 ( 8.3)	0.50 (0.23, 1.08)		
No	142 (72.1)	312 (79.6)	456 (78.5)			
Don't know	33 (16.8)	44 (11.2)	77 (13.3)			
Ever thought of how to protect yourself from HIV/AIDS ( $n = 557$ )						
Yes	122 (68.5)	268 (70.7)	390 (70.0)	0.76 (0.49, 1.16)		
No	37 (20.8)	82 (21.6)	119 (21.4)			
Don't know	19 (10.7)	29 ( 7.7)	48 ( 8.6)			
Willing to be tested for HIV/AIDS ( $n = 576$ )						
Yes	55 (29.4)	94 (24.2)	149 (25.9)	1.30 (0.85, 2.00)		
No	129 (69.0)	271 (70.0)	400 (69.4)			
Don't know	3 (1.6)	24 (6.2)	27 (4.7)			

\*\*: Controlled by age, marital status, educational attainment, and occupation type. The reference category is those who don't travel to work from own residence. An adjusted OR is the indicator of whether the respondents answered positively as either of agree, both partners, or yes in comparison with other choices.

# Practices

There were more sexually active among people travelling to work from their own residences (72.9%) than those living away from their own homes (56.2%). Among those who were sexually active, only a small were not married or living with their sexual partners (14.7%), but 57.6% of them never used a condom. Only 16.9% used a condom during their last sexual intercourse and 37.0% reported that they knew how to use it. In Sri Lanka, people usually obtain condoms from pharmacies, but in this study approximately only one-third of the respondents (35.5%) did from these sources. Approximately half of them did not know if a condom is easy to obtain (46.3%) or affordable (53.6%). Only about one of ten (11.3%) were willing to use a condom if it was available from places other than pharmacies. Also, about 12% wanted the employer to provide free condoms. After controlling for age, marital status,

educational attainment, and occupation type, current residence was not significantly associated with HIV/AIDS practice.

# Discussion

This is a preliminary study to evaluate the knowledge, attitude, and practice (KAP) among Sri Lankan construction workers for HIV/AIDS, who may be vulnerable to HIV infection due to their work condition (temporary or seasonal) and mobility (domestic or international). Particularly, in Sri Lanka, workers with specialized skills (such as engineers and machine operators) are recruited from all over the country.

We found that most construction workers were young males with ordinary levels education. They were away from home for a month on average. These characteristics were consistent with the profile of

Table 4. Practices or	HIV/AIDS among	sample	population
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Current residence (%)		Total (%)	Adjusted OR **		
Home	Others		(95% CI)		
132 (72.9)	212 (56.2)	344 (61.6)	1.48 (0.90, 2.44)		
49 (27.1)	165 (43.8)	214 (38.4)			
arital partners for	the past 6 mont	hs (n = 307) *			
13 (10.9)	32 (17.0)	45 (14.7)	0.68 (0.32, 1.48)		
106 (89.1)	156 (83.0)	262 (85.3)			
53 (42.7)	87 (42.2)	140 (42.4)	0.69 (0.41, 1.18)		
71 (57.3)	119 (57.8)	190 (57.6)			
= 320) *					
17 (13.4)	37 (19.2)	54 (16.9)	0.55 (0.27, 1.12)		
110 (86.6)	156 (80.8)	266 (83.1)			
9)					
79 (47.6)	148 (41.9)	227 (43.7)	1.01 (0.67, 1.52)		
60 (36.1)	118 (33.4)	178 (34.3)			
27 (16.3)	87 (24.6)	114 (22.0)			
6)					
69 (35.6)	146 (35.4)	215 (35.5)	0.80 (0.54, 1.19)		
38 (19.5)	64 (15.6)	102 (16.8)			
87 (44.8)	202 (49.0)	289 (47.7)			
0, (110)	202(1)10)	202 (1117)			
87 (54.4)	154 (46.8)	241 (50.3)	1.08 (0.71, 1.65)		
6 ( 3.8)	10 ( 3.0)	16 ( 3.3)			
67 (41.8)	165 (50.2)	222 (46.3)			
61 (38.6)	114 (35.1)	175 (36.2)	0.99 (0.64, 1.52)		
25 (15.8)	24 (7.4)	49 (10.1)			
72 (45.6)	187 (57.5)	259 (53.6)			
Willing to use a condom if available from places other than pharmacy $(n = 487)$					
20 (12.8)	35 (10.6)	55 (11.3)	1.10 (0.59, 2.04)		
86 (55.1)	163 (49.2)	249 (51.1)			
50 (32.1)	133 (40.2)	183 (37.6)			
	$\begin{tabular}{ c c c c c } \hline Current reside \\ \hline Home \\ \hline 132 (72.9) \\ 49 (27.1) \\ 49 (27.1) \\ arital partners for \\ 13 (10.9) \\ 106 (89.1) \\ \hline 53 (42.7) \\ 71 (57.3) \\ \hline 6 (89.1) \\ 27 (16.3) \\ \hline 60 (36.1) \\ 27 (16.3) \\ \hline 61 (38.6) \\ 25 (15.8) \\ 72 (45.6) \\ n \ places \ other \ tha \\ 20 (12.8) \\ 86 (55.1) \\ 50 (32.1) \\ entry \ ent$	Current residence (%)           Home         Others           132 (72.9)         212 (56.2)           49 (27.1)         165 (43.8)           arital partners for the past 6 mont         13 (10.9)           136 (89.1)         156 (83.0)           53 (42.7)         87 (42.2)           71 (57.3)         119 (57.8) $= 320$ ) *         17 (13.4)         37 (19.2)           110 (86.6)         156 (80.8)           9)         79 (47.6)         148 (41.9)           60 (36.1)         118 (33.4)           27 (16.3)         87 (24.6)           60         38 (19.5)         64 (15.6)           87 (54.4)         154 (46.8)           6 (3.8)         10 (3.0)           67 (41.8)         165 (50.2)           61 (38.6)         114 (35.1)           25 (15.8)         24 (7.4)           72 (45.6)         187 (57.5)           n places other than pharmacy (n =           20 (12.8)         35 (10.6)           86 (55.1)         163 (49.2)           50 (32.1)         133 (40.2)	Current residence (%)Total (%)HomeOthers132 (72.9)212 (56.2)344 (61.6)49 (27.1)165 (43.8)214 (38.4)arital partners for the past 6 months (n = 307) *13 (10.9)32 (17.0)13 (10.9)32 (17.0)45 (14.7)106 (89.1)156 (83.0)262 (85.3)53 (42.7)87 (42.2)140 (42.4)71 (57.3)119 (57.8)190 (57.6) $= 320$ ) *17 (13.4)37 (19.2)54 (16.9)110 (86.6)156 (80.8)266 (83.1)9)979 (47.6)148 (41.9)227 (43.7)60 (36.1)118 (33.4)178 (34.3)27 (16.3)87 (24.6)114 (22.0)6)69 (35.6)146 (35.4)215 (35.5)38 (19.5)64 (15.6)102 (16.8)87 (54.4)154 (46.8)241 (50.3)61 (38.6)114 (35.1)175 (36.2)25 (15.8)24 (7.4)49 (10.1)72 (45.6)187 (57.5)259 (53.6)n places other than pharmacy (n = 487)20 (12.8)35 (10.6)20 (12.8)35 (10.6)55 (11.3)86 (55.1)163 (49.2)249 (51.1)50 (32.1)133 (40.2)183 (37.6)		

\*\*: Controlled by age, marital status, educational attainment, and occupation type. The reference category is those who don't travel to work from own residence. An adjusted OR is the indicator of whether the respondents answered positively as either of agree, both partners, or yes in comparison with other choices.

HIV/AIDS-vulnerable workers reported by the ILO and other international organizations [7-10]; however, our results do not strongly support the hypothesis that Sri Lankan construction workers are especially at higher risk of HIV/AIDS.

Regarding knowledge on HIV/AIDS, the construction workers were fairly familiar with the term "HIV/AIDS", but the awareness was not consistent with their knowledge. It was surprising that, despite the high percentage of those who had heard of HIV/AIDS/STI, many did not know about preventive methods. For example, only about half of the workers knew that condom use and abstaining from sex were ways to prevent HIV/AIDS. Likewise, they had poor knowledge regarding drug injection. A similar pattern was found among Sri Lankan three-wheel drivers [17]. Although almost all of them had

heard of HIV/AIDS, only 56.1% knew they can protect themselves from HIV by abstaining from sexual intercourse and only 54.4% knew that correct condom use is one way to prevent HIV transmission [17]. Construction workers and three-wheel drivers have similar profiles in terms of gender and educational attainment, and studies among these groups are useful in understanding the current knowledge of HIV/AIDS preventive intervention among the lower-educated, male population. Poor knowledge of HIV/AIDS was also observed among internal and external migrant workers around the world [18].

Discrimination against HIV-positive people was also serious. More than half of the respondents (53.7%) would refuse to work with people with HIV/AIDS. Especially, those who received only up to an ordinary level education were more likely to show negative attitudes against people with HIV/AIDS. This negative response seems to be analogous to other work sectors in Sri Lanka. Among three-wheel taxi drivers (all were male) 56.4% were not willing to work with someone with HIV/AIDS [17]. The same results were also observed among 61.3% of male factory workers from the Free Trade Zone [17]. On the other hand, the study among students attending junior or senior high schools showed that 55.6% agreed or weren't certain that they would get upset if a student with HIV/AIDS was in their classroom [19]. Hence this negative attitude may be related to the level of education of the study populations.

Our study showed that the percentage of those who have non-marital sexual partners seemed to be low among those who are currently sexually active. These findings are similar to the findings among other workers, such as factory workers in the Free Trade Zone [17]: Condoms were not widely used and, especially during the last sexual intercourse, the number of people who used a condom was fairly low. Even the number of those who have ever used condom was just less than half of the total respondents. These results indicate a higher proportion than that of other studies among young cohorts [20], but it seems that condoms are not yet strong tools for HIV/AIDS prevention as well as reproductive health matters in Sri Lanka. Although pharmacies are supposed to be the most common places to obtain a condom, many respondents were not aware of the availability of condoms in the pharmacies and therefore had no knowledge of condom costs. In Sri Lanka, reproductive health education is usually offered to pregnant women by a public health midwife but not to adult males, who only attended a small health education class during their school days. Condoms were used less often among those who are married, regardless of whether they wanted or didn't want to have children. Though we were not able to explore the relationship between condom use and willingness to have (more) babies from our limited data, more condom promotion as a reproductive health tool could be more or less beneficial for future HIV/AIDS prevention.

We assumed that current residence would be one of the most significant factors affecting one's sexual behaviour. We explored how current residence affected the respondents' KAP regarding HIV/AIDS, because those who stay in a temporary place may be exposed more to free, casual sexual contacts or engage in more high-risk behaviours. Though our study indicated no significant relationship between current residence and practices, people not travelling to work from their own residences were more likely to show a discriminatory attitude toward HIVpositive people. This attitude can be due to the lack of social cohesion and poor access to the information on HIV/AIDS in a new community. The number of people who had heard of HIV/AIDS as well as read the related materials was significantly lower among people living away from their own residences. According to an official of a construction company, the transient workers do not have any linkage with local health authorities so that if an accident occurred and employees were injured, they would be sent to private clinics contracted by the company [K Kanda, personal communication, 10 July 2007]. Lack of association with local medical providers would also imply that these construction workers are not reached by information regarding HIV/AIDS disseminated by local health authorities. The weak relationship between current residence and sexual practices implies that there are stronger factors affecting the sexual behaviours of Sri Lankans. Sri Lanka is a multi-ethnic country, but Buddhism is the most common religion practiced. Though there is no rule for abstaining from sexual activities until marriage, cultural norms dictate conduct, which could be a reason that Sri Lanka's HIV incidence is still low in comparison with that of other Asian nations. However, the recent termination of the 25-year war in the northeast area of the nation, where more Tamil or non-Buddhist minorities reside. will allow resettlement activities to soon resume, and there will be more opportunities for construction labourers to move into the region in next several years. In particular, people in this area are mainly of South Indian descent, and many of those who evacuated during the conflict may start to return to their hometowns in the near future. Increasing the awareness of HIV/AIDS among construction workers would be valuable to minimize the risk of infection for keeping the nation's HIV prevalence at a minimum level. The workshop on HIV/AIDS conducted by an experienced NGO in July 2007 was effective in increasing the awareness and the knowledge of construction workers working in the southwestern part of Sri Lanka [21]. Therefore, providing educational workshops organized by external professionals, such as local public health agencies (the preferred providers of such activities among respondents) for one to two hours or even for a half day would be one way to increase HIV/AIDS

awareness. If the construction companies could offer such workshops, the program could play a small but important part in reducing the stigma and discrimination towards HIV/AIDS, as well as assist companies in pursuing their corporate social responsibility (CSR).

Also, it is highly beneficial to obtain more comprehensive, epidemiological information among a diverse population to identify the risk of HIV infection among construction workers. Since this is the first survey to target this particular population in Sri Lanka, little comparative data are available to determine the actual HIV/AIDS risk. We explored to what extent construction workers had a potential risk contracting HIV/AIDS through a socioof epidemiological approach, but it was difficult to make a direct assessment of sexual and blood exposures as risk factors for HIV transmission because we simplified the terminology used in the questionnaires both to avoid confusion among respondents and because of the limited time available for data collection in the field sites. For example, "blood transfusion" was used for a possible mode of transmission instead of "blood exposure", which is not commonly used in the local languages. Likewise, the simple term "sexual intercourse" was used throughout the questionnaire, which included both hetero- and homo-sexual relationships. Therefore, additional robust figures would be valuable to strengthen the preventive framework of HIV/AIDS through future extensive research among various populations.

A limitation of the study may be in the sampling. Since the area was pre-selected, the profile, level of knowledge, and practices of our study population may not be representative of the construction workers in the other parts of Sri Lanka, such as those coming from more urbanized areas. A study that would include samples from various districts in the country may be more representative of the status of a Sri Lankan construction worker.

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