

Full Length Research Paper

An exploration of human immunodeficiency virus (HIV) knowledge gaps among male migrant workers in Singapore

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The general objective of this study is to provide a rapid assessment of HIV knowledge gaps among male migrant workers (MMWs) in Singapore. A cross-sectional pilot study was conducted in June 2011, in Singapore. A 14 multiple choice closed question self-administered questionnaire was used to collect information on current HIV knowledge among MMWs. Sixty seven MMWs participated in the survey and a total of 58 valid questionnaires were collected. Findings are reported by grouping survey responses of current knowledge of HIV. Although 84.5% of respondents have an awareness of HIV/AIDS, participants generally scored poorly in the survey and beliefs about the causes of HIV and HIV prevention strategies. 30.7% of those surveyed responded correctly to questions on HIV/AIDS knowledge, whilst 31.7% responded incorrectly and 37.7% of participants were unsure how to respond. The results indicate that there are significant HIV/AIDS knowledge gaps among male migrant workers in Singapore. We recommend that further research is required which could lead to the development of culturally appropriate peer-based HIV prevention programs, which should aim at both equipping this vulnerable group of individuals with necessary knowledge about HIV/AIDS and correcting misconceptions and misunderstandings.

Key words: Male migrant workers, HIV knowledge, self-administered questionnaire.

INTRODUCTION

Globally, in 2010 there were approximately 214 million migrants and of these, 105 million were workers (Department of Statistics, 2010). Specific reasons for migration are varied, and many people who migrate voluntarily do so to access employment opportunities and better quality of life, while others are forced to migrate due to violence, war, ethnic tensions, human rights abuses, famine, poverty, persecution or forced displacement (UNAIDS, 2004). Mobile populations are often highly marginalized and stigmatized throughout the migration process, whether in transit, in the host community or upon their return to their country of origin, and are often vulnerable to discrimination, xenophobia,

exploitation and harassment and may have little or no access to legal or social protection (Yang and Derlega, 2005). In addition to lack of social and legal protection, host countries are often unwilling to invest in health education and health services for migrant workers, and many national health care plans discriminate by excluding migrant workers completely or by limiting their service delivery to emergency care only (UNAIDS, 2004).

Singapore has a low unemployment rate and is increasingly reliant on migrant workers to undertake low paid work that their local counterparts are unable or unwilling to do, particularly due to low wages and poor working and living conditions. Other occupations which local workers may shun are seasonal, and require a complement of foreign workers (Global Commission on International Migration, 2005). Approximately half a million foreign workers were employed in Singapore in

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2010 (Department of Statistics, 2010). Female domestic workers accounted for almost 160,000 and were recruited from Indonesia, the Philippines and Sri Lanka. The remaining 340,000 male migrant workers were mainly recruited from Bangladesh, India, Thailand, Indonesia and China, many of whom were unskilled construction workers (Matteelli and Carosi, 2001).

Under the Employment of Foreign Manpower Act: "the employer shall send the foreign employee for a medical examination by a registered Singapore doctor as and when directed by the Controller" (Ministry of Manpower, 2011). Foreign workers who are unable to pass the medical examination, which includes those who have been diagnosed with active pulmonary tuberculosis and/or HIV, are repatriated. After medical clearance, both unskilled migrant male and female employees are granted a work permit, which does not allow them to bring their spouse or children to Singapore. Working permit holders are not allowed to marry Singaporean citizens or Permanent Residents without the prior approval of the Controller of Work Passes.

There are a multitude of conditions and factors that encourage the spread of HIV infection among migrant populations, as in most cases migration implies a dramatic change in cultural environments, which challenge the norms and behaviours prevalent at place of origin (Parrado and Flippen, 2004). The United Nations Development Program (2008) suggests that the age composition of MMWs in tandem with migrants' language barriers in the host country, often reduces the possibilities for establishing long term monogamous intimate relationships. Family separation, social isolation and depression, coupled with a perception of anonymity, often renders migrants more likely to indulge in risky sexual behaviour, such as engaging in unprotected sexual activity, with multiple partners and/ or commercial sex workers at place of destination (Duckett, 2001).

Human immunodeficiency virus (HIV) infection occurs by the transfer of blood, semen, vaginal fluid, or breast milk and the four major routes of transmission are through unprotected sexual relations, contaminated needles, breast milk, and transmission from an infected mother to her baby at birth. The majority of HIV infections are acquired, however, through unprotected sexual relations, and complacency about HIV remains a key risk factor in acquiring HIV infection (Cunningham and Donaghy, 2010). National Research Council and Institute of Medicine (2005) states that no HIV prevention method is 100% effective for sexually acquired HIV, but with correct and consistent use the male latex condom reduces expected risk by 80 to 90%.

METHODOLOGY

Sample and procedure

Participants were recruited from a sample of 67 MMWs in Singapore at the Humanitarian Organisation for Migration

Economics (HOME) office, which is a small NGO involved specifically in the welfare of migrant workers. MMWs visit the HOME office for a variety of reasons. Some MMWs visit to obtain legal advice, for example if employees are exploiting them by not paying wages, whilst others visit the centre to attend computer classes. Other MMWs visit merely to socialise on their day off.

Included in the sample were working male permit holders over the age of 18 from all nationalities and employed in all industries. Excluded were women, males aged 18 and under and persons who participated in the pre-testing of the questionnaire.

In total, 58 valid questionnaires were collected. Participants were initially recruited from a convenience sample, which is subject to selection bias; however, there were few alternatives due to the difficulties in accessing MMWs in Singapore. As a large section of MMWs were not able to be identified through convenience sampling alone, snowball sampling was utilized. In this type of sampling, participants identify other possible participants and they then in turn identify others (Taylor and Kermod, 2006). This method was used to target the unknown sample size of MMWs in Singapore. The main advantage of this sampling method is that it ensured that as many MMWs as possible were identified and included in the study. Due to this type of sampling, the final sample size was not able to be determined until the data collection was completed (Sarantakos, 2005).

Convenience and snowball sampled participants were asked to complete a 14 closed question self-administered survey, in the presence of a volunteer translator if required, in June 2011. The questionnaire took approximately 10 min to complete. The survey took place under the supervision of the Executive Director of HOME.

A questionnaire was chosen as the data collection tool as questionnaires are easy to analyse and possibly the only effective way of obtaining baseline data of HIV knowledge gaps among MMWs in Singapore. Additionally, multiple choice questions were chosen, as their results lend themselves to statistical analysis (Cohen and Manion, 2000). The survey questions covered the objectives of the research.

To improve overall response rates (Hopkins and Gullickson, 1992) the purpose of the study was clearly explained, questions were clear and concise and confidentiality was assured as the questionnaire did not require participants to identify themselves.

The survey consisted of questions related to HIV knowledge only. Due to confidentiality issues, socioeconomic and demographic data and HIV knowledge variables with specific forms of risky sexual behaviour such as visiting commercial sex workers, and having multiple non-commercial sexual partners were excluded from the survey. Likewise, knowledge about the relationship between such forms of risky sexual behaviour and STDs were not included. Secondly, due to the sensitivity of the topic, the determinants of condom use as a protective behaviour or lack of condom use as a risky sexual behaviour could not be explored.

Due to possible language or cultural barriers, well-informed translators were employed to avoid no or poor responses. 55.2% of participants required the assistance of a translator to complete the questionnaire, whereas 44.8% were able to complete the questionnaire without assistance. As part of the pre-testing of the questionnaire, the researcher set aside time before the pre-testing of the questionnaire with five participants to brief two volunteer translators of the purpose of the research and the questionnaire. The questionnaire was modified on the basis of feedback provided by the translators.

Ethical approval for conducting the survey was obtained from Curtin University Ethics Committee and an approval letter for the dissemination of the questionnaire was provided by the Director of HOME (Ramsden, 2011). All completed questionnaires were given to HOME after the data were coded. A Participant Information Form included the aim of the study, and was explained to all potential participants. However, as the topic is particularly sensitive, a signed

Table 1. Groups of questions.

Group 1	Group 2	Group 3	Group 4
General Information	The following can cause HIV:	HIV can be prevented by the following:	General knowledge of HIV
Q2. Have you heard of HIV/AIDS? Yes/No	Q4. A mosquito Bite? True/False/Not sure	Q9. Washing your self after having sexual intercourse? True/False/Not sure	Q12. Someone who has HIV looks sickly and thin? True/False/Not sure
Q3. Where did you learn about HIV/AIDS? At my school, at pre-departure by my agent in my home country, on TV, from friends, other	Q5. Having a meal with someone who has HIV/AIDS? True/False/Not sure	Q10. Using protection (a condom)? True/False/Not sure	Q13. HIV can be cured? True/False/Not sure
Q14. Would you like to know more about HIV/AIDS? Yes/no/not sure	Q6. By <u>not</u> using protection (a condom)? True/False/Not sure	Q11. By taking medicine? True/False/Not sure	
	Q7. Having more than one partner? True/False/Not sure		
	Q8. By visiting prostitutes? True/False/Not sure		

consent form which could identify participants was not required. This action conforms to the National Health and Medical Research Council (NHMRC) guidelines which clearly state that where consent to participate is required, there are alternatives such as the return of a survey and a recorded agreement to obtaining signed consent forms (National Health and Medical Research Council, 1999).

The questionnaire

Questions were divided into four groups for ease of analysis (Table 1).

RESULTS

Group 1: General information

Of the participants that were surveyed, 84.5% reported that they had heard of HIV/AIDS, and 15.5% of participants reported that they had not heard of HIV/AIDS. Those who had heard of HIV/AIDS, a total of 58 males, were asked questions on their knowledge of HIV/AIDS. All these responses are reported below.

Of the respondents who had heard of HIV/AIDS, 37.9% reported that they had learnt about HIV at school, 3.4% at pre-departure training in their country of origin, 13.8% from friends, 41.4% from TV and 3.4% from other sources (Figure 1).

When participants were asked if they wanted to know more about HIV/AIDS, 79.3% of participants indicated that they would like to know more about HIV/AIDS, 15% did not wish to know more about HIV/AIDS and 5.2% were unsure whether they wanted to know more about HIV/AIDS (Figure 2).

Group 2: Knowledge of the cause of HIV/AIDS

Figure 3 summarises the responses for the questions on the knowledge of the causes of HIV/AIDS. The responses give an indication of the level of knowledge that the MMWs have of the causes of HIV/AIDS. For example, the two questions where the 'true' response is greater than the 'false' response are for questions related to safe sex practices: using protection (a condom) and visiting prostitutes. On the contrary, the questions which represent some of the myths of the causes of HIV/AIDS - sharing a meal with someone that has HIV can cause HIV/AIDS and a mosquito bite can cause HIV/AIDS - both receive large false responses. For all the questions in Figure 3, however the proportion of the responses that are unsure indicates that there are considerable knowledge gaps amongst the MMWs in the sample.

In interpreting the answers, it is important to note that the questions about multiple partners and CSWs do not

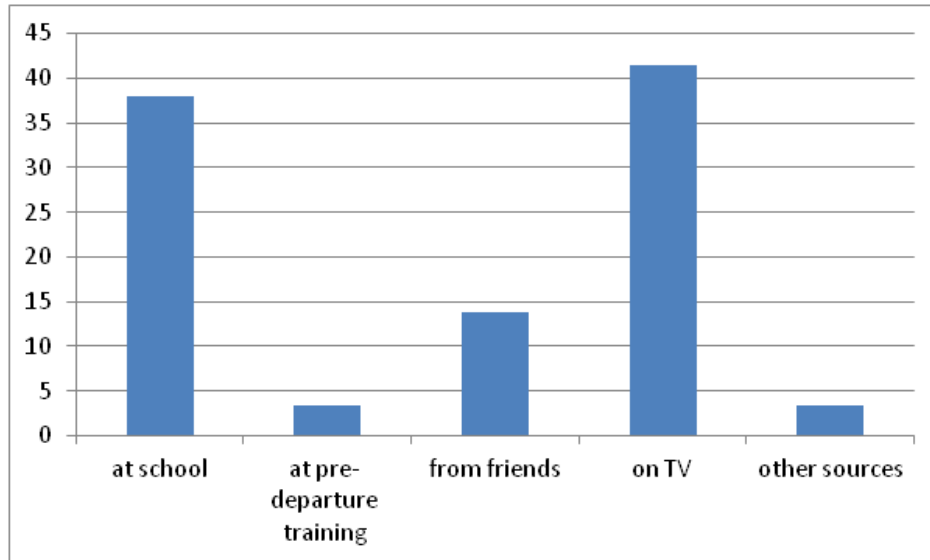


Figure 1. Where did you learn about HIV/AIDS?

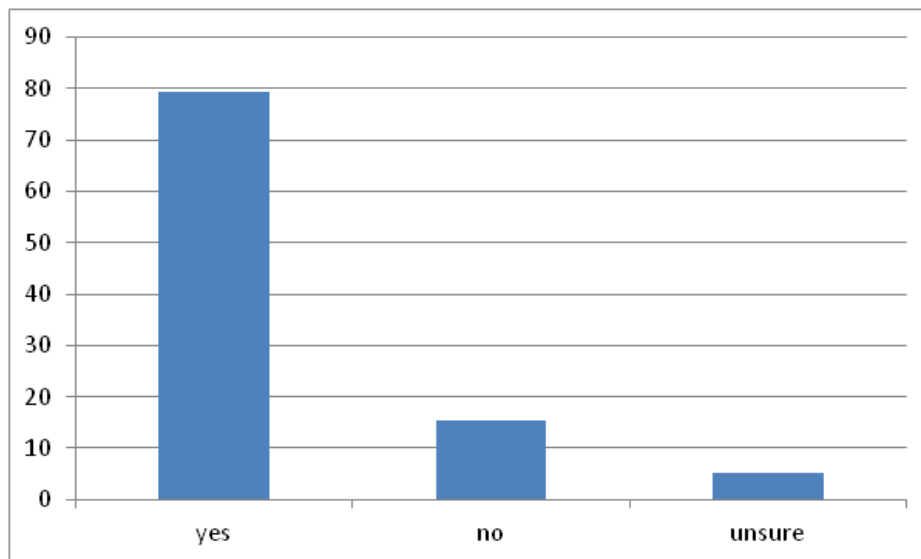


Figure 2. Would you like to know more about HIV/AIDS?

have straightforward answers. Sexual behaviour involving multiple partners and CSWs raises one's risk of acquiring HIV, but cannot be said to necessarily cause it. The degree to which risky sexual behaviour causes HIV depends on the extent to which given individuals take risks.

In this group of questions (Figure 3), which aims to determine the cause of HIV/AIDS, 37.9% of participants believe that HIV can be caused by mosquito bite. This is less than the findings of a survey conducted by the China HIV/AIDS Media Partnership and others in China (China

HIV/AIDS Media Partnership (CHAMP); UNAIDS, 2008), where it was found that more than 48% of migrant workers believed that a mosquito bite can cause HIV. 48% of those surveyed in the same study in China, believed they could get infected by eating a meal with an HIV-positive person, which is more than the 20.7% of respondents in this research study who believe that sharing a meal with someone who has HIV/AIDS can cause HIV/AIDS. When asked if not using a condom can cause HIV, 34.5% believed that not using a condom can cause HIV. In addition, 37.9% of respondents believe that

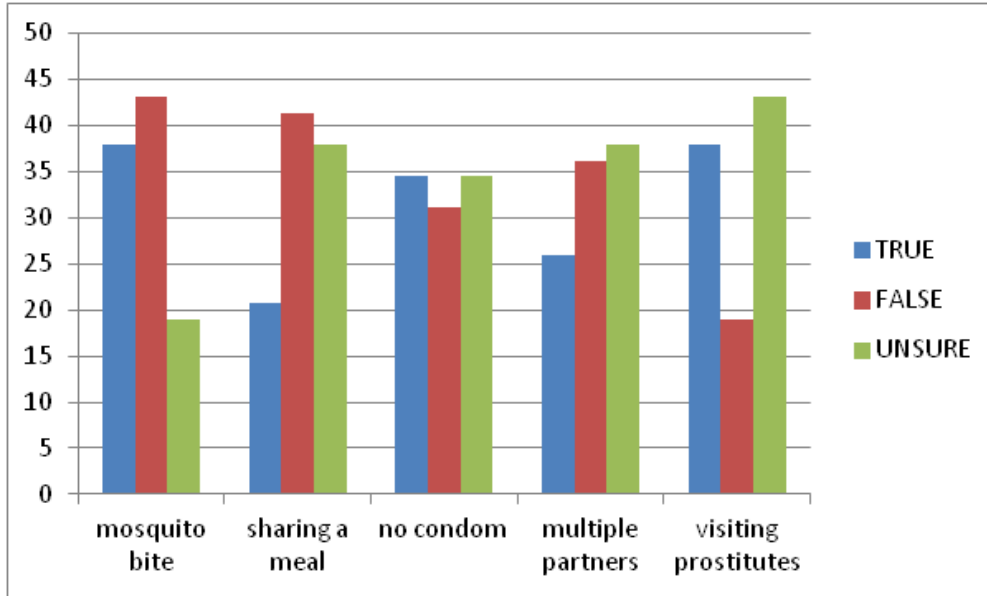


Figure 3. Knowledge of the cause of HIV/AIDS.

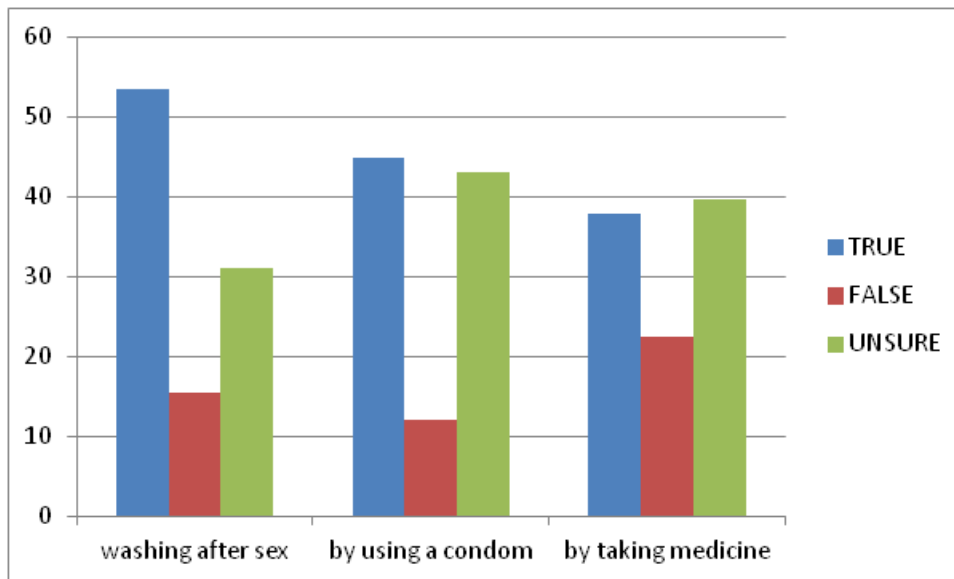


Figure 4. Knowledge of the prevention of HIV.

visiting a commercial sex worker could cause HIV and 25.9% believe that having more than one partner can cause HIV. These findings support the suggestion of Greig et al. (2008) that equate masculinity with sexual risk-taking, and have been shown to be associated with less condom use, more partners and more casual partners. The findings also accord with the Chinese survey which found that only 19% of those surveyed use condoms with new partners (China HIV/AIDS Media Partnership (CHAMP); UNAIDS et al. 2008).

Group 3: Knowledge of the prevention of HIV

Figure 4 shows the response to 3 questions on the ways of preventing the spread of HIV. For all the questions, the true responses outweighed the false responses, but the false responses were outweighed by the unsure responses. A considerable proportion of the sample questioned, between 31 and 43%, were unsure of the correct response to the questions on prevention of HIV.

Adding together the false and unsure responses to the

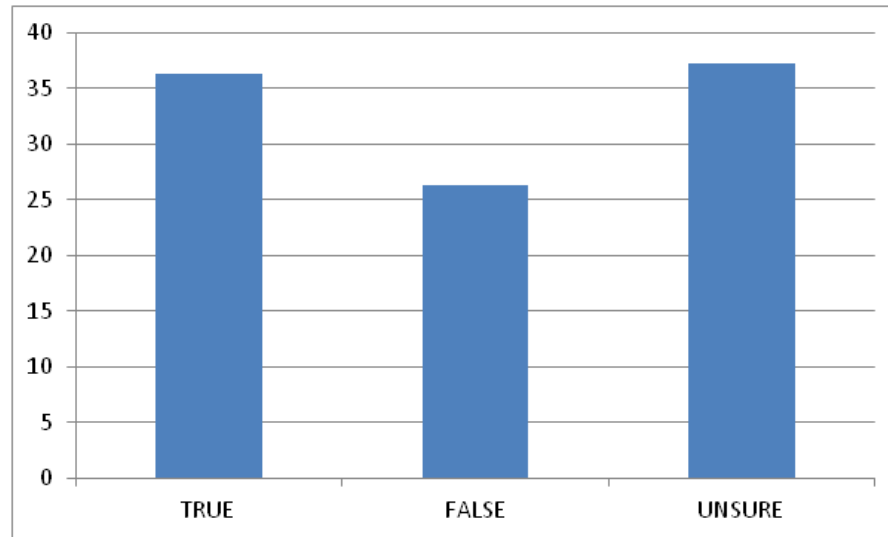


Figure 5. General knowledge about HIV.

question on use of condoms to prevent HIV indicates that the majority of the respondents (55%) were not familiar with a basic practice for safe sex.

The proportion of 53.4% of participants who believed that by washing themselves after sexual intercourse HIV could be prevented, was significantly higher than the results from a study by Metsch et al. (2001) which reported that among IDUs in the United States, 30% believed that washing themselves after sexual intercourse could prevent HIV. In addition, when asked if HIV could be prevented by taking medicine, 39.7% of participants believe this to be true. When asked if HIV could be prevented by using a condom, 41.4% of respondents believe HIV can be prevented by using a condom. These findings are significantly less than the results of the Institute of Population and Social Research survey conducted in Thailand in 2003, where it was reported that 79% of MMWs knew about the use of a condom as a means of preventing HIV infection (Chamrathirong and Boonchalaksi, 2008).

Group 4: General knowledge about HIV

Figure 5 shows the participants' overall general knowledge of HIV based on 2 basic questions. The first question sought to assess whether the MMWs thought that you can tell whether someone had HIV/AIDS by their appearance of being sickly and thin. Approximately 41% of the respondents thought that this was true and a higher percentage were unsure. The respondents were equally divided between true and false on the question of whether HIV/AIDS can be cured.

The unsure responses combined with the false responses in Figure 5 highlight again the extent of HIV/

AIDS knowledge gaps held by the MMWs.

In the fourth group of questions, 41.4% of respondents agreed that if someone has HIV/AIDS they looked sickly and thin, which is similar to the finding in a study conducted by Van Huy et al. (2011) in Hanoi, Vietnam, where 55% of MMWs believed that you can tell by looking at someone if they have HIV/AIDS. In the same study, 64% of MMWs in Vietnam believed that there is a cure for HIV, compared to 29.3% of participants in this study who believe that HIV/AIDS can be cured.

DISCUSSION

Consistent with most of the findings in the literature, the survey reveals that MMWs in Singapore have significant deficits in HIV knowledge. Although 84.5% of participants have an awareness of HIV/AIDS, misconceptions about the causes of HIV and HIV prevention strategies are common. Participants generally scored poorly in the survey, which is demonstrated by the average response rates to questions 4 to 13 (Figure 6). The combined score of incorrect and unsure responses (69.2%) outweighed the sum of correct responses (30.8%). Details on questions 4 to 13 can be found in Table 1.

The main source of information about HIV for participants in this study was through school (37.9%) and from TV (41.4%) (Figure 1). Schools play a pivotal role in providing HIV/AIDS education for young people, as not only do schools have the capacity to reach a large number of young people, but school students are particularly receptive to learning new information (UNESCO, 2008). Therefore schools are a well-established point of contact through which young people can receive HIV/AIDS education. Unfortunately, however,

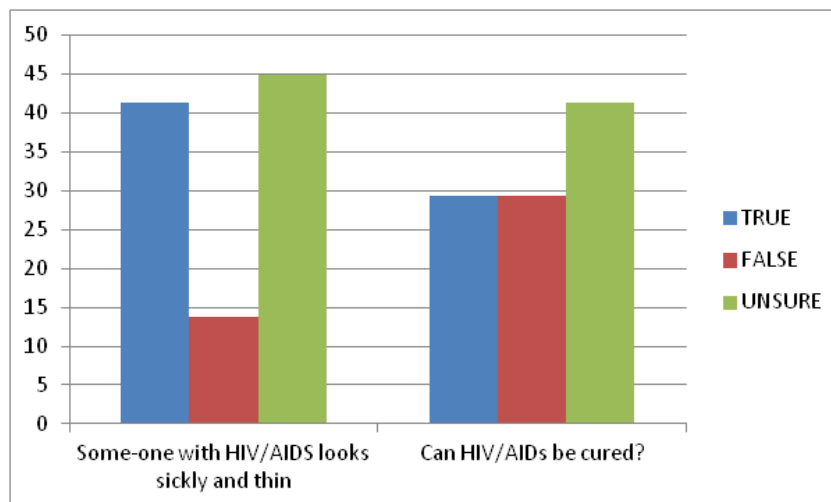


Figure 6. Average response rates of HIV/AIDS knowledge

many of the participants in the survey stated during informal conversation that at their school, teachers who provided HIV education were considered to be ill-informed, condescending about the virus and labelled people that had HIV/AIDS as 'dirty'.

UNAIDS (2007) points out that although HIV education and behaviour programs contribute to awareness and knowledge, they have weak to moderate effects on reducing the rate of risky sexual behaviour, as awareness of HIV does not necessarily mean that people are motivated to use condoms consistently with CSWs and multiple non-CSW partners. We must therefore consider that HIV education alone does not promote safer sexual behaviour.

LIMITATIONS

While this research provides important insights into the HIV knowledge gaps of MMWs and thus provides support for better HIV prevention efforts for MMWs in Singapore, the findings must be interpreted with consideration of some limitations. As is true of a number of investigations, the information collected is based on self-reports, which are usually subject to social desirability bias. However, as participants were not asked about their sexual behaviour, social desirability bias in this study was not particularly a concern, and in order to reduce this potential bias further, an anonymous clear and concise closed question survey was conducted, with the purpose of the study clearly explained to participants. The sensitivity of the subject matter, combined with the vulnerability of the migrant population in Singapore meant that efforts to obtain more extensive and qualitative rather quantitative information were curtailed.

As the questionnaire was translated into three or four different languages and 55.2% of participants required

assistance from a volunteer translator to complete the questionnaire, there is a possibility of translation bias, whereby translators translate questions inconsistently or incorrectly. In order to reduce this potential bias, a number of steps were taken including: pre-testing of the questionnaire with five participants, briefing two volunteer translators of the purpose of the research and the questionnaire; asking translators to provide feedback on the content of the questionnaire; amending the questionnaire prior to the final survey on the basis of that feedback; and asking both translators to be consistent in the way in which they translated questions, provided prompts and interacted with the respondents. Further limitations include the study sample obtained in this research, which may not be representative of the overall MMWs population in Singapore, as access to MMWs was difficult, and information was obtained from one location only. Furthermore, as the objective of the study was to explore HIV knowledge gaps among MMWs, it did not explore the relationship between the socio-demographic data and HIV knowledge variables with specific forms of risky sexual behaviour, due to confidentiality issues and the sensitive nature of the topic. Therefore, risk levels for exposure to HIV/AIDS including risky sexual behaviour and STDs, for this sample group were not able to be determined. Lastly, data were collected from migrant men only, and the exclusion of migrant women in this research is an acknowledged shortcoming.

RECOMMENDATIONS

Studies to ascertain the determinants of the knowledge and behaviours of HIV susceptible individuals are important to provide information for developing program strategies. The present study has found that MMWs remain vulnerable to HIV due to their level of knowledge.

Thus, potentially, MMWs in Singapore may contribute to the spread of the HIV epidemic in the Asian region. A deeper understanding of different migrants needs in Singapore could lead to better evidence based interventions. Therefore, it is important to gather accurate data and information on MMWs sexual behaviour and their knowledge on the conditions of STD.

Future research may therefore wish to investigate the relationship between socio-demographic data and HIV knowledge variables with specific forms of risky sexual behaviour such as frequenting CSW and having multiple non-CSW sexual partners. Likewise, the relationship between such forms of risky sexual behaviour and STD should be explored.

In addition, future research could explore the determinants of condom use as a protective behaviour or lack of condom use as a risky sexual behaviour. Researching these additional variables could provide future researchers with the opportunity to analyse the determinants of motivation of preventive behaviours amongst MMWs in Singapore as well as the effect of cultural variables. Lastly the cross-sectional nature of this research design precludes causality assessments to determine if lack of HIV knowledge leads to risky sexual behaviour. Further research, ideal with an intervention or a longitudinal design is therefore needed to determine causal relationships among model elements, such as STD as well as the effect of interventions on MMWs sexual behaviour. Besides improving HIV-related knowledge, there is a great need to enhance and foster motivation towards safer sexual behaviours.

Given the HIV knowledge gaps among MMWs in Singapore, public policy changes are recommended to avert a potential increase in new HIV/AIDS cases in the Asian region. Further research could lead to the development of culturally appropriate peer-based HIV prevention programs specifically targeted at MMWs in Singapore.

Socio-economic instability, poverty, unemployment, political unrest and the unequal distribution of resources are all-important issues which are likely to sustain voluntary and forced migration in the foreseeable future. As such, HIV/AIDS will continue to become an unavoidable global priority. The global community must therefore capture the greatest benefits towards global development by combining its own resources, along with migration experts and other Non-Governmental Institutions. The development of well-informed HIV policy for migrant workers in countries in the Asian Region could potentially contribute to the achievement of the Global Millennium Development MDG number six, which aims to halt and reverse the spread of HIV/AIDS by 2015.

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