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Prevalence of risky behaviours and determinants of multiple sex partnerships among male Filipino seafarers

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ABSTRACT

Background. *This study describes the HIV/AIDS knowledge, attitudes, and related practices among male Filipino seafarers assigned to non-passenger vessels. It also identifies some factors associated with the seafarers' practice of having multiple sex partners.*

Material and methods. *An analytical cross-sectional study design, utilizing a standard interview schedule administered to 501 male seafarers from 12 large manning agencies in Metro Manila.*

Results. *Multiple logistic regression analysis shows that seafarers who are unmarried and who have a history of alcohol drinking are more likely to report multiple sex partnerships compared to married men and those who do not drink alcohol, respectively. Men who have inadequate knowledge about HIV transmission and prevention and those who are relatively young are also more likely to engage in multiple sex partnerships.*

Conclusions/Recommendations. *HIV prevention messages should target the unmarried and young seafarers. The HIV module during pre-departure needs to be reviewed for the seafarers' knowledge of HIV transmission and prevention to improve. The use of condoms during high-risk sexual encounters should be emphasized.*

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Key words: seafarers, HIV, risky behaviors

INTRODUCTION

An Overseas Filipino Worker (OFW) is a Philippine national who has been engaged in a remunerated activity in a country of which he/she is not a legal resident [1]. There are two types of OFWs: land-based, who usually have a two-year contract to work in a principal country; and sea-based, who renew their contract every three to four months [2]. Earlier studies carried out on Filipino seafarers showed that they worked at an average of six to ten months [3–5]. Data from the 2007 review of populations at risk for HIV infection reported that in 2005 to 2006 the number of nationally processed and deployed OFWs was 1,571,950 for land-based and 508,720 for sea-based. Data from the Philippines Overseas Employment Administration (POEA) showed that for the same period, seafarers made up 25% of the total number of OFWs deployed [6]. More recent POEA data showed that seafarers made up 21% and 23% of the OFWs deployed in 2008 and 2009, respectively [7]. Thus, the number of seafarers deployed during 2008–2009 increased by 26%. Most (97%) of the deployed seafarers in 2006 were males [8]. As of January 2010, HIV positive OFWs accounted for 30% of the total cumulative cases since 1984. Sexual contact was the predominant mode of transmission. Males com-

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posed 75% of all HIV-positive cases among OFWs. The median age was 37 years [9].

In 1998, the Joint United Nations Programme on HIV/AIDS (UNAIDS) proposed for use two terms that were related to contracting HIV infection — "risk" and "vulnerability". "Risk" is the probability that an individual may acquire HIV infection [10]. These are behaviours that set up, augment, and perpetuate risk of infection, such as multiple unprotected sexual partnerships, unprotected sexual contact with a partner whose HIV status is unknown, and injecting drug use with contaminated needles and syringes. These populations included sex workers, men who have sex with men, children of HIV-positive mothers, and injecting drug users. In addition, the sexual partners of individuals in high-risk groups, as well as the sexual partners of HIV-positive people, were also "at risk" of infection.

"Vulnerability" comes from a variety of factors that decrease the ability of a person or community to avoid HIV infection. UNAIDS identified three groups of factors which can create or exacerbate vulnerability, either alone or in combination. These are: (i) personal factors, like lack of knowledge and skills required to protect oneself and others; (ii) factors related to the quality and coverage of services, like the inaccessibility of services due to distance, cost, and other factors; and (iii) societal factors like social and cultural norms, practices, and beliefs, as well as laws which stigmatize and disempower some groups of people and which also act as barriers to basic HIV prevention messages. Examples of these populations are youths, migrants, and mobile people like refugees, truckers, miners, itinerant traders, transport workers, and seafarers [11].

The conditions encountered during seafaring may increase vulnerability and risk to HIV [12]. Among the predisposing factors include lack of access to HIV information, health services, and means of HIV prevention. When conditions in the area of deployment are unfavourable or unsupportive of migrants, physical, financial, and social insecurities erode their caring and coping mechanisms, which may result in high-risk sexual behaviour.

MATERIAL AND METHODS

This study described the levels of HIV/AIDS knowledge, attitudes, and practices among a sample of male Filipino seafarers employed in non-passenger vessels. More specifically, it was intended to identify the factors associated with multiple sex partnership among the seafarers. It also investigated some program-related variables, which can influence or modify policies to reduce migrant workers' risks and vulnerability and plan for more effective HIV prevention.

The study was an analytic cross-sectional study. Five hundred seafarers participated from 12 of the 20 biggest manning agencies in Metro Manila. Trained interviewers administered a standardized structured interview schedule to the study volunteers. The informed consent of the study subjects was sought before the interview was conducted.

The **variables** studied were grouped into two — (i) **vulnerabilities** (personal and intermediate factors) and (ii) **risky behaviours**. The **personal factors** were further categorized into socio-demographic [marital status, age, residence, and seafaring license status) and policy/programme/services-related factors (awareness, access to health facilities, use of HIV prevention information and services, number of contracts, and Pre-Departure Orientation Seminar (PDOS) attendance].

Intermediate variables were the seafarers' knowledge of and attitudes towards HIV. Knowledge of HIV transmission and prevention is an important factor that can mitigate a seafarer's vulnerability. Identifying misconceptions about HIV is just as important as the knowledge of the actual modes of transmission [13].

The data was encoded using Epic-Info 6 [14] and analysed using STATA 6 [15]. Whenever applicable, either Chi-square or Fisher's exact test was used to select the confounding variables which were included in the multiple logistic regression model to identify independent correlates of multiple sexual partnerships which may put seafarers at risk of HIV infection.

RESULTS

MANNING AGENCY RESPONSE RATE

Only the top 20 from a list of 313 manning agencies located in Metro Manila were selected as the source population of the seafarers for the survey. These 20 manning agencies deployed some 52,858 seafarers in 2006, which was almost half (47%) of the total number of seafarers deployed from the entire country. For various reasons, only 12 agencies gave permission for interviews, and these agencies were able to deploy 30% of the total seafarers nationwide.

A total of 525 respondents were invited to join the study, but only 501 gave consent. A typical seafarer was married/live-in, 35 years old, a college graduate, and had completed about nine contracts. The socio-demographic and employment characteristics of the respondents are shown in Table 1.

Table 1. Selected socio-demographic and employment characteristics of male Filipino seafarers, 2008

Characteristic	Number	(%)
Marital Status		
Married/Live-in	374	74.6
Single	116	23.2
Separated	10	2.0
Widowed	1	0.2
Total	**501**	**100.0**
Age (years)		
16–25	55	11.0
26–30	98	19.6
31–35	105	21.0
36–40	85	17.0
41–45	77	15.4
46–60	80	16.0
Total*	**500**	**100.0**
Mean ± SD	**36.04 ± 8.7**	
Median	**35**	
Educational Attainment		
High school	18	3.6
Vocational	21	4.2
College/ Graduate school	461	92.0
Total*	**500**	**100.0**
Contract Duration (months)		
1–6**	88	17.6
7–9	245	48.9
10–12	148	29.5
13–15	17	3.4
16–18	3	0.6
Total	**501**	**100.0**
Mean	**8.64 ± 2.4**	
Median	**9**	
Number of Completed Contracts		
1–5	174	34.7
6–11	170	33.9
≥ 12	157	31.3
Total	**501**	**100.0**
Mean = Median = 9 (± 6.7)		
License Status		
Licensed	138	27.5
Unlicensed	363	72.5
Total	**501**	**100.0**

*One respondent had no information; **There was one respondent whose contract duration was less than a month

HEALTH

The majority of the respondents (80%) admitted to, at some time, having consumed alcoholic drinks but 99% did not have a positive history of injecting drug use. The seafarers were asked if they had themselves tested for HIV every time they left for a new contract. Almost 70% of the respondents reported having had an HIV test with 65% saying that the tests were mandatory. About 37% of the respondents identified the HIV test as part of their pre-employment medical examination. The rest of the tests which the respondents identified included physical examination, blood exam, EENT, urine, and chest X--ray. Although the majority of seafarers undergo HIV test before they leave for a new contract, only 60% of the respondents who had had an HIV test knew the test result.

Almost all (98%) had heard of sexually transmitted infections (STIs), and 60% were able to identify HIV/AIDS. Aside from HIV were gonorrhoea, syphilis, herpes, body/pubic louse, and hepatitis B. In addition, some 70% of the respondents were able to correctly identify the symptoms of selected STIs. Only three respondents admitted that they had had abnormal discharges in the past 12 months, and no respondents admitted having had genital sores/ulcers in the same period.

To promote worker protection and welfare, seafarers were required not only by the manning agencies to attend the PDOS, but also by the POEA and the Overseas Workers' Welfare Administration (OWWA). The PDOS for seafarers was usually conducted by manning agencies duly accredited by the OWWA. The HIV module was part of a one-day orientation to prepare the seafarer for his job, and this orientation also covered other topics like employment contract, laws/restrictions, and processing of remittances. Financial matters like salaries, remittance, and allotment were the orientation topics most commonly recalled by the majority of the respondents. The HIV module being used in the PDOS ran for 45 minutes and contained information on the modes of transmission and prevention, and a discussion of the common myths regarding HIV, AIDS, or People living with HIV (PLHIV) [14].

Only 73% of the respondents said they attended the PDOS every time they left for a new contract, but almost all reportedly attended the orientation prior to their last departure. On average, the seafarers attended the PDOS some seven days before leaving the country.

Table 2. Distribution of correct responses on knowledge on HIV prevention (UNGASS Indicators) among male Filipino seafarers, 2008

HIV Knowledge Question	Number	(%)
1. Can people protect themselves from HIV/AIDS by having only one partner who is disease-free?	347	69.3
2. Can the use of condoms decrease your chance of getting HIV/AIDS?	381	76.1
3. Do you think that a healthy-looking person can be infected with HIV/AIDS?	406	81.0
4. Can a person get HIV/AIDS from mosquito bites?	240	47.9
5. Can a person get HIV/AIDS by sharing a meal with someone who is infected?	312	62.3

Table 3. Percentage of male Filipino seafarers who can both correctly identify ways of preventing HIV/AIDS and reject major misconceptions about HIV/AIDS transmission (UNGASS Indicators), 2008

Composite Score*	Number	(%)	95% CI
0–4	468	93.4	90.9–95.4
5	33	6.6	4.6–9.1
Total	**501**	**100.0**	

*Out of five questions

ACCESS TO HEALTHCARE FACILITIES WHILE ON TOUR OF DUTY

The majority (83%) of the seafarers knew of a health facility where they could get medical attention while on tour of duty. The most common facilities mentioned were the ship's infirmary, and hospitals and clinics at the ports. Some 92% of the respondents had availed of services from these health facilities.

HIV KNOWLEDGE

The level of the seafarers' knowledge was described using the 2007 UNGASS Indicators. Specifically, the percentage of respondents who could correctly identify ways of preventing the sexual transmission and reject major misconceptions about HIV/AIDS transmission was determined. The knowledge scores were determined by the number of respondents who were able to answer all the five questions correctly (Table 2); hence, the scoring system was categorized into 0–4 versus 5 correct responses (Table 3). Less than 7% of the seafarers had relatively good knowledge about HIV transmission and prevention.

ACCEPTING ATTITUDE TOWARDS PEOPLE LIVING WITH HIV (PLHIV)

A seafarer had a positive attitude if he was willing to do all of the following: (i) share a meal with an HIV-infected person; (ii) care for an HIV infected relative in his home; (iii) buy food from an infected vendor; (iv) send his children to a school which employs HIV-infected teachers; (v) disclose the presence of an HIV-infected family member; and (vi) work with an HIV-infected crew member. Only 4% of the respondents were able to give the desired response.

SEXUAL PARTNERS IN THE LAST 12 MONTHS

The majority of the seafarers (90%) reported that they were sexually active in the past year. Almost all of them (98%) preferred female sex partners, while seven preferred male partners. Only three respondents admitted having a male partner in the past 12 months. Three out of four respondents had at least one female sexual partner while one in five had two or more partners in the last 12 months. The distribution of respondents, according to the number of partners and the type of female sexual partner during the past year, is shown in Table 4 where commercial and non-commercial non-regular partners were combined into one category, i.e., non-regular partners. About 15% of the seafarers admitted to having engaged in commercial sex in the past 12 months [17].

CONDOM USE

Three out of four respondents said they knew that condoms could reduce the risk of HIV infection. About 12% of the respondents thought that condoms were ineffective because they can have holes. Other misconceptions about use of condoms for HIV prevention were — they can break during sex, they can leak because of factory defects, and they can come

Table 4. Distribution of respondents by number and type of sexual partners, 2008

Number of Partners	Sex Partner Type			
	Regular		Non-Regular*	
	Number	(%)	Number	(%)
0	23	4.6	363	72.5
1	419	83.6	48	9.6
≥ 2	13	2.6	44	8.8
Not Applicable	46	9.2	46	9.2
Total	**501**	**100.0**	**501**	**100.0**

*Commercial and non-commercial, non-regular sexual partners

Table 5. Distribution of male Filipino seafarers according to condom use and type of sexual partner, 2008

Condom use	Sex Partner Type			
	Regular		Non-Regular**	
	Number	(%)	Number	(%)
User	65	15.0	71	81.6
Non-user	367	85.0	16	18.4
Total*	**432**	**100.0**	**87**	**100.0**

*Total is more than 501 since respondents can have more than one type of partner
**Commercial and non-commercial non-regular sexual partners

off during sex. Some 478 out of the 501 respondents knew where to obtain condoms, such as at the pharmacy, shops, and on the ship.

The summary of the respondents' condom use during their last sexual encounter by type of sexual partner is shown in Table 5. Four out of five respondents consistently used condoms with sex workers and two out of five with their non-regular partners [18]. A little over three-quarters of the respondents reportedly used condoms during their last high-risk sex [19].

CORRELATES OF MULTIPLE SEXUAL PARTNERSHIPS

This section focuses on identifying the correlates of the practice of multiple sex partnerships among the seafarers. The association of 'multiple sex partnership' with seven independent variables (composite knowledge score, marital status, age, PDOS attendance, number of completed contracts, history of alcohol use, and consistent condom use) was assessed using a logistic regression model [20]. However, only two (marital status and history of alcohol use) were found to be significantly associated with multiple sex partnership. Knowledge score and age were only marginally associated with the outcome variable of interest. Although not significantly associated with the dependent variable, the 'PDOS HIV module' was forced into the model so that its independent relationship with the number of sexual partners could be assessed. The HIV module in pre-departure orientation of seafarers has significant policy implications, so it was important to assess its association, even indirectly, with the practice of multiple sex partners among the seafarers (Table 6).

The odds of having multiple sex partners was slightly more than two times among seafarers who were single compared to married seafarers; this association was statistically significant. The odds of having multiple sex partners were almost three times higher among respondents who had a history of alcohol consumption compared to those who did not, and this association was also statistically significant.

Although the association was only of borderline significance, seafarers who had better knowledge about HIV transmission and prevention were twice as likely to have multiple sexual partners compared to those who were less knowledgeable. Moreover, younger seafarers were two times more likely to have multiple sexual partners than were their older coun-

Table 6. Summary of the results of multiple logistic regression analysis on the association of selected independent variables and the outcome of multiple sexual partnerships, 2008

Independent variable	OR	95% CI	p-value
UNGASS knowledge score			
5 Items	2.2	0.9-5.4	**0.077***
0–4 Items	1.0	–	–
Marital status			
Single	2.4	1.3-4.5	**0.007****
Married	1.0	–	–
Age			
≤ 35 years old	2.1	1.0-4.5	**0.050***
≥ 36 years old	1.0	–	–
PDOS attendance			
Without HIV module	1.4	0.6–3.5	0.444
With HIV module	1.0	–	–
Number of completed contracts			
> 9	1.0	–	–
≤ 9	0.8	0.4–1.6	0.501
History of alcohol use			
No	1.0	–	–
Yes	3.0	1.1–7.8	**0.027***
Condom use			
Used condom every time	1.6	0.9–3.0	0.146
Did not use condom every time	1.0	–	–

*Statistically significant; **Highly significant

terparts. This association was, however, of borderline significance. The results of the multiple logistic regression analysis in Table 6 suggest that attending the HIV module in the pre-departure orientation, the number of completed contracts, and use of condoms were all not significantly associated with multiple sex partnerships.

DISCUSSION

Aside from measuring the prevalence of HIV risky behaviours, this study also identified significant correlates of having multiple sex partners. The use of logistic regression analysis allowed the identification of independent correlates of the said behaviour. The following paragraphs discuss the assumptions and some of the limitations of the study, as well as the implications of the results for HIV prevention and control among the target population.

There were only three respondents who admitted to ever having had a male sex partner in the last 12 months. This was expected since seafaring is associated with a "macho subculture". Thus, the analysis of risky behaviours was limited to female sexual partners only. Since the data was collected using face-to-face interviews, there was no way to verify the self-reports of the respondents. Thus, it was assumed that responses about condom use, number of sex partners, practice of commercial sex, and sex with partners other than regular sex partners were truthful and accurate. It was further assumed that the seafarers' responses about their attitudes towards HIV-infected persons were valid. Only two out of the seven variables included in the logistic regression analysis were significantly associated with having multiple sex partners. These were marital status and history of alcohol use. Single men were two times more likely than married men to have multiple sex partners, and those who had history of alcohol intake were three times more likely to engage in this high-risk behaviour. This should be a concern since

condom use was not significantly associated with multiple sex partnership and the men who engage in unprotected sex with non-regular sex partners could put their regular sex partners in danger of HIV and STI infection.

Age and level of knowledge regarding HIV were only marginally associated with multiple sex partnership. It seems paradoxical to discover that the likelihood of having multiple sex partners was two times higher among seafarers with high HIV knowledge scores compared to men with relatively low scores. It appears that knowledge alone was not sufficient to guarantee safe sex practices among the study population.

An issue that deserves mention with regard to condom use is whether it was a cause or an effect of some high-risk behaviour. With the knowledge that condoms offer protection against HIV and STIs, seafarers may become bolder and engage in high-risk behaviours, like having multiple sex partners, knowing that use of condoms will protect them against STIs. Conversely, it is also possible that seafarers who have multiple sex partners or those who engage in commercial sex may use condoms to reduce their personal risk of STIs during these high-risk sexual encounters. Thus, it is difficult to say from this cross-sectional study whether condom use is an effect or a cause of high-risk sexual practices. Another issue of interest is whether level of knowledge about HIV is associated with high-risk behaviours. The study revealed that the level of knowledge about HIV was not significantly associated with the type of sex partners and the seafarers' condom use. This finding could be due to the relatively strict definition of a high level of knowledge that was used in this study. The UNGASS knowledge composite score was chosen over others since it is the knowledge indicator that is recommended internationally to monitor and evaluate HIV prevention programs. Thus, the results can easily be compared with other studies locally and abroad.

The results also suggested that having an HIV module in PDOS was not significantly associated with having multiple sex partners. Although most of the seafarers were able to attend PDOS at least once, it seems that attendance was not associated with less risky sexual behaviours among the study population. This problem may go beyond the mere inclusion of an HIV module in PDOS, and may have something to do with the quality of HIV information in the module, the perception of risk, and the benefits of engaging in safer sex behaviours. It is also unreasonable to believe that an hour (or often a 15-minute) HIV module in PDOS is adequate to influence practice of risky behaviours over time. In a recently concluded study, Action for Health Initiatives (ACHIEVE) recommended an assessment of the existing training, education and advocacy framework, materials, and approaches to make them more relevant and responsive to the needs of Filipino seafarers and their families [15].

The study was able to identify a few significant correlates of multiple sex partners. However, there are situations when quantitative results seem to be highly inadequate to explain why seafarers engage in risky sexual practices. The results of quantitative studies may become more meaningful if they can be interpreted together with in-depth qualitative studies.

CONCLUSIONS AND RECOMMENDATIONS

The respondents have inadequate knowledge about HIV transmission and prevention, including misconceptions about safer sex. At least 15% had had commercial sex and 2% had had casual sex in the last 12 months, and these figures were likely to be under-estimates of the true practice. Some 20% engaged in unprotected sex with their non-regular partners. However, there are reasons to believe that self-reports of sex with non-regular partners was under-reported, and condom use with non-regular partners was over-reported.

The majority of the seafarers attended PDOS, which included an HIV module, about a week or a few days before leaving the country. However, PDOS attendance was not significantly associated with better knowledge of HIV transmission, nor was it associated with more accepting attitudes towards HIV-infected persons. Moreover, attendance at PDOS with an HIV module was not associated with reduced number of sex partners and use of condoms. While this KAP study was not an evaluation of the HIV module in PDOS, earlier studies suggest the need to revise the HIV prevention module in the PDOS to give particular attention to its content, core message/s, and correcting common misconceptions about HIV transmission. The assessment should also review the delivery of the PDOS — by whom and when and where. The PDOS HIV module may not be the only way to reach seafarers with HIV and STI prevention messages. Because of the peculiar situation of seafarers, some form of on-site education by trained peer educators might be needed to extend HIV prevention information to them in their places of work.

The seafarers should not be treated as a homogenous group of men employed in sea vessels. This study showed that these men have markedly varied vulnerabilities, some of which may be related to their demographic characteristics, previous exposures and experiences, and other factors related to the migration process itself. Being young and single may increase their vulnerability to HIV infection, specifically with respect to having multiple sex partners and/or having non-regular sex partners. Married seafarers are less likely to use condoms, especially with their regular partners. Some practices, such as alcohol bingeing, may further reduce their ability to assess personal risk and use protection. This information is useful for targeting seafarers who can benefit from a more intensive HIV IEC campaign, which should focus on reducing the vulnerabilities and risks of these different groups of seafarers.

The work of seafarers has been described as 'dirty, dangerous, and demeaning' [16]. Efforts to reduce risks and vulnerabilities to HIV/STI can be made in the broader context of public health promotion and protection as seafarers are also at high risk of injuries/accidents in the workplace and are prone to psychological and mental health problems due to their unique situation of being at sea for long periods of time away from their families.

Further qualitative research on seafarer attitudes towards unsafe sex, having multiple sexual partners, and condom use, as well as non-use of condoms with regular partners, is needed to aid in the design of more effective interventions. Also, further formative research on designing effective on-board (on-site) interventions (such as supporting and training peer educators, resisting peer pressure on alcohol use, and even information in websites that provide sexual health information for seafarers) may be needed to provide bases for the design of effective and appropriate HIV prevention strategies.

The role and involvement of manning agencies in HIV prevention needs to be reviewed, especially for the top sending agencies. Because of the sheer volume of seafarers they deploy, these agencies are ideal strategic partners in the scaling up of the HIV prevention effort among seafarers. Lastly, as seafarers also get information, especially on health facilities on site, from ship officials and their peers, it is also important to explore ways in which ship officials or peers can be involved in dissemination of information on HIV prevention.

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17. The proportion is derived from the number of respondents who have had sex with a commercial partner in the past 12 months divided by the total number of respondents.
18. The FHI indicator for consistent condom use is the number respondents who have used a condom every time they have had sex with any commercial partner over the last year against the number of respondents who have had sex with a commercial partner in the past 12 months.
19. The percentage of respondents who had more than one partner and who reported condom use during their last sexual intercourse; where the numerator is the number of respondents who reported having had more than one sexual partner, who also reported that a condom was used the last time they had sex, and the denominator is the total number of respondents who reported having had more than one sexual partner.
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