# SUBSTANCE USE AND HIV KNOWLEDGE AMONG PEOPLE LIVING WITH HIV/AIDS (PLHIV) IN RATANA METTA ORGANIZATION YANGON, MYANMAR

**Khaung Myitzu Hane, Chitlada Areesantichai***

College of Public Health Sciences, Chulalongkorn University, Bangkok 10330, Thailand

**ABSTRACT:** This cross-sectional study aims to identify the substance use risk behaviors and knowledge regarding HIV/AIDS of people living with HIV/AIDS in Ratana Metta Organization (RMO) in Yangon, Myanmar. The data was collected from 369 participants using interview questionnaire method. About 9.0% of respondents (1 female and 28 male) have used substance in their lifetime. Among the respondents who reported to have used substance in their lifetimes, more than 40.0% of respondents are found to have injected heroin, 14.3% of respondents used opium and others used methamphetamine, cannabis and methadone. Over 10% of those respondents used substance over six months ago and one respondent (0.3%) is found to have used injecting drug (heroin) within one month from the study. About 3% of respondents (1 female and 10 male) had intercourse experience while on drug in their lifetime and 4 of them did not use condom during intercourse. Regarding the HIV/AIDS knowledge of the respondents, over 80% of respondents obtained high knowledge score (154 female, 148 male and 2 gay men). There is higher number of male respondents than female and gay respondents in having risk behaviors. All in all, this study found out that 0.3% of total respondents have substance use behavior and 82.5% of respondents are found to have high level of knowledge regarding HIV/AIDS.

**Keywords:** HIV/AIDS, risk behavior, substance use, Ratana Metta Organization

## INTRODUCTION

Myanmar has one of the highest HIV prevalence and caseloads and ranked as a high-burden country in Asia [1]. Although HIV prevalence in Myanmar for adult population had declined compared to the past few decades, the prevalence among key affected groups remains high with 21.9% for male intravenous drug users and 9.4% for commercial sex worker. In 2010, HIV prevalence among male general population was 2.5%, however, the prevalence stood high at 28% for men who have sex with men. As of 2011, over 60% of the new infections occurred among female sex workers, their clients, men who sex with men and people who use drugs [2]. According to Population Services International (PSI), this trend is estimated to increase to 70% by the year 2015. HIV transmission which can be contributed to risk behaviors such as unsafe sex and drug abuse is worrying in Myanmar. Ratana Metta Organization (RMO) is one of the local non- governmental organizations, which provide HIV/AIDS treatment, care and support to people living with HIV who come from various part of Yangon area. Currently, there are about 3100 registered patients in RMO HIV/AIDS treatment, care and support Clinic [3]. The organization is operating the large-scale HIV/AIDS care and support projects. There is no previous study related to risk behaviors of PLHIV conducted in this particular organization although the organization is providing services to considerable number of HIV patients. In Myanmar, data availability regarding risk behaviors of the

* *Correspondence to: Chitlada Areesantichai*
*E-mail: chitlada.a@chula.ac.th*

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people living with HIV is too limited. This is the gap the study aims to address and the result can be used as data base for further studies and in taking appropriate preventive measures in HIV transmission. In this paper, substance use risk behavior, HIV/AIDS knowledge of participants and also their socio-demographic characteristics will be described.

## OPERATIONAL DEFINITIONS

**PLHIV**-People living with HIV (PLHIV) who are aged between 18 – 65 years.

**Risk behaviors** - Unsafe sex, substance use (injecting drug, sharing needles and other skin-penetrating equipment) and alcohol consumption.

**Substance use** – Using substance for pleasure which is harmful for the body. It is also defined as the use of any substance or chemical agent that alters the biochemical or physiological processes of tissues or organisms. Drugs which are commonly abused include opioid and its derivatives, sedatives, cough depressants, psycho depressants and stimulants. Route of administration for substance use can be intravenous, oral drugs or other [4].

**Sharing Needles** –Sharing the used needles and syringe among intravenous drug users to administer the drug.

## METHODOLOGY

A cross-sectional study was conducted in 369 PLHIV, aged 18-65 years who were registered at Ratana Metta Organization, Yangon, Myanmar. The data was collected by using interview questionnaire method in the ART clinic of Ratana Metta Organization. Purposive sampling was used. PLHIV who are mentally unstable, seriously ill, or in terminal stage were excluded to the study.

### Data analysis

Descriptive statistics, the frequency and percentage distribution was calculated for all variables. Chi-square was used to test the association between risk behaviors and its independent variables.

### Ethical consideration

The proposal was approved by the Ethical Review Committee for Research Involving Human Research Subject, Health Science Group, Chulalongkorn University (COA no.034/2014).

## RESULTS

### Socio-demographic characteristics of respondents

Total respondents of the study are 369 (184 female and 185 male). Among 185 male respondents, 2 respondents identified themselves as gay. These 2 respondents are put under the separate category titled “Gay” since they could have diverse characteristics and nature. Thus their responses shall not affect the responses of those who identify themselves as male and vice versa. The respondents are interviewed using structured questionnaire to describe the respondents HIV/AIDS risk behaviors. The questionnaire includes socio-demographic characteristics and risk behaviors regarding HIV/AIDS parts. In this discussion section, the findings will be discussed in the context of study objectives and research questions. Most of the respondents (81 female, 100 male and 1 gay) are from the age group of 30-39 (49.1%). Bamar represents the major race of the respondents with the total 329 among 369 respondents (89.2%). The marital status of 204 of the respondents is married (over 50%). Regarding education of the respondents, majority of the respondents (51 female and 76 males) have high school education (34.4%). There are 65 university grauates (17.6%) in the respondents, Table [1].

### Substance use behavior of respondents

The type of substance use and route of administrations are also explored. According to the data collected, 29 (7.9%) of respondents have had substance use experience in their lifetime. More than 40% of those 29 respondents used more than one type of substance. The major route of administration used by the respondents is injecting (38.6%). All 17 respondents who used injecting drugs are male. One respondent reported to use substance within one month, Table [2].

The respondent also reported to not have used disposable injecting equipment and shared with other drug users. About 3% of respondents (1 female and 10 male) had intercourse experience while on drug in their lifetime. Four of the respondents who had intercourse while on drug did not use condom during intercourse.

### Knowledge regarding HIV/AIDS of respondents

A ten-question set regarding HIV/AIDS knowledge is included in the interview and the knowledge levels are divided into three levels according to the score obtained [5]. Over 95% of respondents know that blood testing is very good way in finding out whether a person has HIV. They also have high knowledge regarding how condom use can reduce HIV transmission.

Over 80% of total respondents have high HIV/AIDS knowledge level scores, 154 female (83.7%), 148 male (80.9%) and 2 gays (100%). Thirty female (16.3%) and 30 male (16.4%) attain middle knowledge level scores. Five male respondents got low knowledge level score, Table [3].

**Table 1** Socio-demographic characteristics of respondents by gender

| Socio-demographic characteristics | Gender (n=369) | | | Total (n=369) |
|---|---|---|---|---|
| | Female (n=184) | Male (n=183) | Gay (n=2) | |
| | n (%) | n (%) | n (%) | n (%) |
| **Age (years)** | | | | |
| 20 – 24 | 4 (2.2) | 1 (0.5) | 0 (0.0) | 5 (1.4) |
| 25 – 29 | 23 (12.5) | 16 (8.7) | 0 (0.0) | 39 (10.6) |
| 30 – 39 | 81 (44.0) | 100 (54.6) | 1 (50.0) | 182 (49.3) |
| 40 – 49 | 59 (32.1) | 47 (25.7) | 1 (50.0) | 107 (29.0) |
| 50 – 65 | 17 (9.2) | 19 (10.4) | 0 (0.0) | 36 (9.8) |
| **Race** | | | | |
| Bamar | 165 (89.7) | 162 (88.5) | 2 (100.0) | 329 (89.2) |
| Mon | 3 (1.6) | 2 (1.1) | 0 (0.0) | 5 (1.4) |
| Rakhine | 1 (0.5) | 5 (2.7) | 0 (0.0) | 6 (1.6) |
| Shan | 5 (2.7) | 1 (0.5) | 0 (0.0) | 6 (1.6) |
| Karen | 7 (3.8) | 4 (2.2) | 0 (0.0) | 11 (3.0) |
| Chin | 1 (0.5) | 1 (0.5) | 0 (0.0) | 2 (0.5) |
| Other (Chinese, Panjub, Indian, Mixed Blood) | 2 (1.1) | 8 (4.4) | 0 (0.0) | 10 (2.7) |
| **Religion** | | | | |
| Buddhist | 174 (94.6) | 175 (95.6) | 2 (100.0) | 351 (95.1) |
| Christian | 3 (1.6) | 3 (1.6) | 0 (0.0) | 6 (1.6) |
| Islam | 7 (3.8) | 2 (1.1) | 0 (0.0) | 9 (2.4) |
| Hindu | 0 (0.0) | 3 (1.6) | 0 (0.0) | 3 (0.8) |
| **Marital status** | | | | |
| Single | 32 (17.4) | 69 (37.7) | 2 (100.0) | 103 (27.9) |
| Married | 101 (54.9) | 103 (56.3) | 0 (0.0) | 204 (55.3) |
| Separated/Divorced | 8 (4.3) | 4 (2.2) | 0 (0.0) | 12 (3.3) |
| Widow/Widower | 43 (23.4) | 7 (3.8) | 0 (0.0) | 50 (13.6) |
| **Educational level** | | | | |
| Primary School | 25 (13.6) | 16 (8.7) | 0 (0.0) | 41 (11.1) |
| Middle School | 51 (27.7) | 48 (26.2) | 0 (0.0) | 99 (26.8) |
| High School | 51 (27.7) | 76 (41.5) | 0 (0.0) | 127 (34.4) |
| University | 14 (7.6) | 18 (9.8) | 0 (0.0) | 32 (8.7) |
| University Graduate | 40 (21.7) | 23 (12.6) | 2 (100.0) | 65 (17.6) |
| Other (Illiterate, Monastic Education, Primary School Drop-out.) | 3 (1.6) | 2 (1.1) | 0 (0.0) | 5 (1.4) |
| **Occupation** | | | | |
| Unemployed | 98 (53.3) | 52 (28.4) | 1 (50.0) | 151 (40.9) |
| Professional | 18 (9.8) | 9 (4.9) | 0 (0.0) | 27 (7.3) |
| Skilled Worker | 29 (15.8) | 59 (32.2) | 1 (50.0) | 89 (24.1) |
| Unskilled Worker | 39 (21.2) | 63 (34.4) | 0 (0.0) | 102 (27.6) |
| **Monthly income in +USD (employed)** | | | | |
| USD 15 – 49 | 14 (16.3) | 8 (6.1) | 0 (0.0) | 22 (6.0) |
| USD 50 – 104 | 38 (44.2) | 50 (38.2) | 0 (0.0) | 88 (23.8) |
| USD 105 – 259 | 32 (37.2) | 63 (48.1) | 1 (100.0) | 96 (26.0) |
| USD 260 – 520 | 2 (2.3) | 10 (7.6) | 0 (0.0) | 12 (3.3) |

+ Exchange rate USD 1 = MMK 960 approx. (May 2014 rate)

**Table 2** Substance use behavior of respondents by gender

| Substance use behavior | Gender (n=369) | | | Total (n=369) |
|---|---|---|---|---|
| | Female (n=184) | Male (n=183) | Gay (n=2) | |
| | n (%) | n (%) | n (%) | n (%) |
| **Lifetime** | | | | |
| No | 183 (99.5) | 155 (84.7) | 2 (100.0) | 340 (92.1) |
| Yes | 1 (0.5) | 28 (15.3) | 0 (0.0) | 29 (7.9) |
| **Type of substance** | | | | |
| Heroin | 0 (0.0) | 18 (42.9) | 0 (0.0) | 18 (40.9) |
| Opium | 1 (50.0) | 6 (14.3) | 0 (0.0) | 7 (15.9) |

**Table 2** Substance use behavior of respondents by gender (cont.)

| Substance use behavior | Gender (n=369) | | | Total (n=369) |
|---|---|---|---|---|
| | Female (n=184) | Male (n=183) | Gay (n=2) | |
| | n (%) | n (%) | n (%) | n (%) |
| **Type of substance** | | | | |
| Methamphetamine | 0 (0.0) | 2 (4.8) | 0 (0.0) | 2 (4.5) |
| Cannabis | 1 (50.0) | 13 (31.0) | 0 (0.0) | 14 (31.8) |
| Methadone | 0 (0.0) | 3 (7.1) | 0 (0.0) | 3 (6.8) |
| **Above six months** | | | | |
| No | 182 (98.9) | 146 (79.8) | 2 (100.0) | 330 (89.4) |
| Yes | 2 (1.1) | 37 (20.2) | 0 (0.0) | 39 (10.6) |
| **Type of substance** | | | | |
| Heroin | 0 (0.0) | 17 (45.9) | 0 (0.0) | 17 (4.6) |
| Opium | 1 (50.0) | 6 (16.2) | 0 (0.0) | 7 (1.9) |
| Methamphetamine | 0 (0.0) | 1 (2.7) | 0 (0.0) | 1 (0.3) |
| Cannabis | 1 (50.0) | 11 (29.7) | 0 (0.0) | 12 (3.3) |
| Methadone | 0 (0.0) | 2 (5.4) | 0 (0.0) | 2 (0.5) |

**Table 3** Knowledge regarding HIV/AIDS of respondents by gender

| HIV/AIDS knowledge level | Gender (n=369) | | | Total (n=369) |
|---|---|---|---|---|
| | Female (n=184) | Male (n=183) | Gay (n=2) | |
| | n (%) | n (%) | n (%) | n (%) |
| Low knowledge (Score 0 - 3) | 0 (0.0) | 5 (2.7) | 0 (0.0) | 5 (1.4) |
| Middle knowledge (Score 4 - 6) | 30 (16.3) | 30 (16.4) | 0 (0.0) | 60 (16.3) |
| High knowledge (Score 7 - 10) | 154 (83.7) | 148 (80.9) | 2 (100.0) | 304 (82.4) |

**Table 4** The association between HIV/AIDS knowledge level and condom usage

| Knowledge regarding HIV/AIDS | Condom Usage (n = 369) | | *p*-value |
|---|---|---|---|
| | No (n=22) | Yes (n=347) | |
| | n (%) | n (%) | |
| **Knowledge level** | | | |
| Low & Moderate | 9 (40.9) | 56 (16.1) | 0.003* |
| High | 13 (59.1) | 291 (83.9) | |

* $p < 0.05$

**Association between HIV/AIDS knowledge and condom usage**

The association between HIV/AIDS knowledge of respondents and condom use is also explored as having unprotected sex is one of the high risk behaviors and there are respondents who had intercourse without using condom. It is found out that among the respondents who used condom during intercourse, over 80.0% of them have high HIV/AIDS knowledge level. The association between HIV/AIDS knowledge and condom usage is tested using Chi-square and the association is found with the p-value significant with <0.05. The association between HIV/AIDS knowledge level and condom usage, Table [4].

**DISCUSSION**

Over 7% of the respondents have substance use experience in more than six months. The participants are asked if they had used substance within 30 days, one participant responded to have used injecting drug and to have shared the injecting equipment with other drug users. A research done in Manipur, India, shows that more than one-fourth (27%) of intravenous drug users reported having had sex with multiple partners in the past. Although there is no association between respondents' current substance use behaviors and condom use, association is found between respondents' lifetime substance use behavior and condom use (*p*-value <0.05). The similar result has been found in a study done among African American Students showing female students who use substance were five times (OR=5.05, *p*= 0.02) more likely to report inconsistent condom use compared to those who did not [6]. In this study, it is also found that there is association between substance use behavior and having multiple sex partners (*p*-value 0.04). Substance use is also associated with anal intercourse (*p*-value <0.05).

It is found out that the respondents have high knowledge about HIV testing, HIV preventive measures. They have confusion regarding HIV transmission and difference between HIV and AIDS. Over 80% of the respondents obtained high knowledge score and 16.2% of the respondents obtained middle level score. Five male participants (1.4%) obtained low knowledge score in the test. Nonetheless, it is found out that knowledge level has no significant association in conducting risk behaviors except for association between having unprotected intercourse behavior and knowledge level (*p*-value 0.003). Substance use behavior shows no association with HIV/AIDS knowledge level of respondents. This finding is supported by a study done among drug addicted patients in Warsaw, Poland stating that attained knowledge is found to have no relationship in conducting HIV related risk activity [7].

## CONCLUSION

In conclusion, 369 participants who are mainly from age group of 30 – 39 (81 female, 100 male and 1 gay men). Total of 29 respondents (7.9%) have used substance in their lifetime. Among those 29 respondents, over 40.0% of the drug users used injecting drug (heroin) and also over 40.0% of the users used more than one type of substance. One respondent is reported to still use injecting drug. Also reported that respondent shared the injecting equipment with others. Overall HIV/AIDS knowledge level of respondents is high (82.4%).

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