

## Abstract

**Background:** Gay saunas were the potential sites for transmitting HIV and other sexually transmitted diseases. There were seldom epidemiology studies to investigate the high-risk group in Taiwan. The object is to investigate the HIV-1 prevalence and sexual behavior among the men who have sex with men in gay sauna in Taiwan.

**Methods:** To provide anonymous HIV-1 antibody with pre-test counseling and condoms were given to patrons of gay saunas by team comprise of a nurse and peer educators. The patrons were encouraged to leave their contact numbers and participated in the follow-up program. Assessment of risk factors for HIV seroprevalence and seroconversion were carried out using univariate analysis.

**Results:** From January 2003 to November 2003, 486 men from 6 gay saunas participated in the study and 31 of them were infected with HIV-1 (prevalence=6.4%). Among them, 398 questionnaires were collected. The mean age of this study was  $33.6 \pm 9.8$  years old, 37.7% of them were single and 66.9% were self identify homosexual, 30.2% were self identify bisexual.

In terms of risk factors associated with HIV-1 infection, there was no significant difference of the demographic data between HIV-1 infected and uninfected men. Prior to this study, 41.5% of the participants have never been tested for HIV-1 infection. 23.1% of respondents have never brought condoms to sauna. The rate of their behavior in condom use 'every time' was low (39.7%). The mean numbers of sexual contract in past three months and male sex partners at sauna were 3.8 and 1.6 respectively. The average days of patrons consumed at sauna were 34.3 days. 25% of the HIV-1-infected men had history of enlargement of the urethra ulcer while only 10.2% of the HIV-1-uninfected men had that history. 14.8% of HIV-1-infected men had ever substance usage. Univariate analysis showed that risk factors substance use (OR= 4.0; 95% CI, 1.2-13.3) ; condom use 'never, sometimes, often' (OR= 2.9; 95% CI, 1.3-6.4) ; STD (OR= 2.9; 95% CI, 1.2-7.4) .

All the 29 HIV-1 isolates sequenced were subtype B. The results of phylogenetic analysis suggest that the virus strain is not unique epidemic from gay saunas in Taiwan.

**Conclusion:** The study results showed that MSM are still the highly risk group in terms of HIV-1. This study not only is very cost-effective, but also may have great impact on the prevention of HIV-1 infection for MSM in Taiwan. To ensure a high quality HIV prevention program becomes stand practice in these environments, it relies on the collaborations among different sectors which including the sauna managements, the community organization and public health advocates.

**Keywords :** Men having sex with men ; homosexuality ; HIV-1 ; AIDS ; and anonymous testing