aged between 20 and 59 years old surveyed 2.0 per cent reported having had sex with another man at least once in their lifetime. Applying the 2 per cent male same sex experience rate to male adult population figures obtained from the national census, the number of MSM in Japan is estimated to be over 682,000. Methodological issues, including the low number of younger age groups included in the Master sample and low response rates among the younger age groups surveyed means this figure may underestimate the number of men who have sex with men in Japan. However, using the 2.0 per cent same sex experience rate and applying it to reported HIV and AIDS cases among males aged 20 to 59 from 2008 AIDS surveillance reports, the prevalence of HIV and AIDS among MSM was estimated to be respectively 96 times and 33 times greater than that among non-MSM. The use of AIDS Surveillance data is most likely to be unrepresentative due to low rates of HIV testing among gay men's community samples in Japan (Lifetime 53.6%, Previous 12 months 29.1%)[10] in comparison with MSM in developed countries including Australia (life-time 83–93%, previous 6 months 40–55%), and the USA (life-time 92%, previous 12 months 77%).[11] The low uptake in HIV testing among gay men's community samples, and social stigma linked to homosexuality, may also inhibit declaration of same sex behaviour at HIV testing sites (or in behavioural research).

Social situation faced by MSM in Japan

8. Historically, male-to-male sex was sanctioned among Buddhist priests and samurai and was openly represented.[12] However in the Meiji and post Meiji eras (from 1868–1920s) medical-legal frameworks were imported from the West which defined male same sex behaviour as deviant.[13] Homosexuality is not illegal in Japan, but there is strong stigma and discrimination towards sexual minorities including gay and bisexual men.[14] Consistent with many Asian societies where individual sexual identity is subsumed under social norms that privilege heterosexual marriage and procreation, homosexuality is stigmatized rendering people from sexual minorities as invisible.[15] As a result, gay and bisexual men are stigmatized and face of strong pressure to conform to a conventional heterosexual life.

9. Research data indicates that Japanese gay and bisexual men experience negative psychological consequences relating to their sexuality. In a 1999 Internet survey of 1,025 gay and bisexual men, a little less than half (49.0%) of respondents had told no one about their sexual orientation.[16] A significant percentage of the sample had experienced abuse relating to their sexuality with 83.0 per cent reported being bullied at school and 54.5 per cent experiencing abuse related to their sexuality such as being called a homo or okama (a pejorative word similar in meaning to the English term 'faggot'). Seventy-one percent of respondents reported high levels of anxiety, while over fifteen percent had attempted suicide and thirteen percent showed high levels of depression. Other qualitative and quantitative research indicates that these men experience pressure to marry and psychological distress about fitting into heterosexual social institutions.[17]

10. A 2005 internet study among 5,731 gay and bisexual men also indicated that the school-based HIV prevention education that gay and bisexual men receive is inadequate. Only 4.3 per cent out of 5,731 gay and bisexual men in the survey reported receiving positive information about homosexuality in school. The majority (93.2 per cent) indicated they had received inadequate information, with this statistic comprised of almost 79 per cent of men who had received no information at all, and 15 per cent who received information that portrayed homosexuality in negative terms.18 These results have not changed since the internet survey was first conducted in 1999. Regarding the content of AIDS education received at school, a bit under half (47.4 per cent) of the respondents were taught about HIV transmission and prevention in relation to sex between men and women, while only eleven percent received any information on HIV transmission and prevention regarding sex between men. This indicates that the implementation of improved sexuality and HIV prevention education for MSM in schools is much needed.

11. Community mobilization towards HIV among gay men has followed a different trajectory to that seen commonly in the West. While there are a few gay men's groups who have lobbied openly for gay rights using a model similar to that seen in Western cities, many Japanese gay men do not follow Western notions of coming out, adopting a gay identity, or of fighting for gay rights.[19] While Japanese gay male protagonists have cited initial reluctance on the part of gay men's groups to address HIV within their communities,[20] gay groups conducting HIV-related activities are gradually increasing, but the overall number of individuals involved remains small.[21] The gay men's community, for the most part, consists of commercial facilities such as men's bars, shops, saunas

and dance parties concentrated in large cities, and small social and cultural groups such as gay music, sports, and university groups. This context explains why the number of gay NGOs nationally is still quite low. There is an established base for gay NGO and community involvement in HIV prevention and support activities, so there is potential for this involvement to increase. Ongoing government funding and commitment to increasing NGOs capacity to implements a community development approach, and fundraising activities among gay men themselves, could prove critical in increasing resources for gay HIV related-community activities.

The background to the increase in HIV infections among MSM in Japan

12. Early HIV education materials targeting the general population were inadequate in informing men about the transmission of HIV during anal sex, despite HIV-related information and free and anonymous HIV testing having been available nationwide at public health centres since 1989. This was partially due to lack of research identifying the specific prevention and support needs of MSM, but also due to lack of sensitivity to issues faced by sexual minorities, including gay and bisexual men. An early pamphlet published in 1987 distributed by public health centres referred to 'homosexuality' as one of the routes of HIV transmission (as opposed to anal sex regardless of sexual practice), and stated that HIV can be prevented by 'correct knowledge and normal lifestyles' (tadashii chishiki ni futsuu no seikatsu AIDS wa korede yobou dekimasu).[22] These early HIV prevention materials were not adequate in meeting the needs of MSM, and contributed to marginalizing and stigmatizing of gay men.

13. In Japan, HIV prevention programs for MSM commenced in the late 1990s. One barrier hampering prevention efforts was the weak partnerships that existed between researchers and gay men's groups, which delayed the translation of research results into the development of targeted prevention programs. At this time in the history of the epidemic, a top-down approach characterised relations between these two different groups.[23] [23, 25]. However, in the early 1990s partnerships between researchers and gay men saw the translation of behavioural surveys into prevention and support activities.

14. Successful collaboration between gay men, gay bar owners, and a local government health officer in Osaka led to the establishment of the gay NGO, MASH Osaka, in 1998. This partnership facilitated the conducting of a base-line and follow up surveys which collected data on HIV sero-prevalence and behavioural information between 1999 and 2002.[24] The research results obtained were instrumental in directing HIV prevention and support activities in Osaka, and this model, in which researchers work in partnership with and to support local gay NGO activities, was subsequently repeated in other regions funded by the Ministry of Health Labour and Welfare (MOHLW) as the Study Group on the Development and Implementation of Community-based HIV Prevention Interventions for MSM.

15. The increasing number of new HIV infections saw the Ministry of Health, Labour and Welfare (MOHLW) introduce a new infectious disease policy in 1999. In response to the yearly increase in HIV among MSM, documented through the Osaka and Minami Shinjuku HIV testing site data, the MOHLW released a MSM-related HIV policy in 2001. This policy is significant in that it was the first time that gay NGO representatives were included on a committee with researchers and medical doctors to develop the policy. This committee recommended a number of concrete policy measures including: the promotion of targeted information for MSM; improvement of HIV testing facilities for MSM; and the provision of support for local governments to conduct MSM targeted prevention and support activities. These recommendations led to the development of funding for much needed research and gay men's community centres in Tokyo and Osaka in 2003. The gay men's community centres represented the first specific and ongoing funding for MSM-related HIV prevention activities and since its inception there are now six gay men's community centres operating nationally.

16. Part of the reason for the lack of targeted programs for MSM lies in the low levels of funding for domestic community development activities in general and MSM targeted HIV prevention programs specifically.[25] This is despite the fact that Japan supports international aid that includes HIV programming in developing countries. Funding for all HIV prevention activities carried out by local governments (including telephone counselling services, HIV testing services, funding of NGO activities) is reported to have declined from 1.69 billion yen in 1997 to 557 million yen in 2004,[26] and only a few local governments have implemented HIV prevention activities specifically targeting MSM.[27] Earlier problems of poor working relationships between researchers and gay and bisexual

men have improved. Furthermore, epidemiological and behavioural data on the situation regarding HIV among MSM is conducted among gay men's community samples in a number of regional areas. However, the lack of commitment to increasing the capacity for NGOs to implement a community development response, including ongoing funding for national prevention and support programs remains a barrier to increased scale up of prevention and support programs for MSM

The community-based response by gay NGOs

17. Researchers, gay men, gay business owners and local government health officials established MASH Osaka in 1998, using pilot funding from the Ministry of Health, Labour and Welfare. This was followed by Rainbow Ring in Tokyo in 2002, Angel Life Nagoya in Nagoya in 2000, Love Act Fukuoka in Hakata in 2003, Yarokko in Sendai in 2005, and Nankuru in Okinawa in 2007. These groups have followed a similar model, in which an autonomous NGO made up of gay community members collaborates with researchers and in many cases, physicians working at designated HIV treatment centres. The approach follows a community development model, which encourages gay individuals and groups to carry out education and support programs developed by and for them, but with input by public health and other professionals.

18. Since 2003, with funding from the MOHLW administered through the Japan Foundation for AIDS Prevention in 2003, community centres were established to conduct HIV prevention and support activities for MSM in Tokyo and Osaka. Other centres were opened in Nagoya in 2004, Fukuoka in 2006, and Sendai and Naha in 2009. Run by gay men's NGOs in each area, the community centres have become important bases for promoting education and awareness campaigns. The gay community centres have been instrumental in networking with gay businesses, gay event organizers and other gay groups, as well as artists and individuals not necessarily interested in HIV-related activities. Through the holding of art, social and workshop-events, including dance parties, flea markets, language classes, and exhibitions, opportunities have been created to encourage many gay men to visit these community centres, where they are also exposed to information about HIV. Furthermore, gay male artists have been involved in the design of prevention materials, including the design of different condom packets, which are now collectors items, as well as posters and internet web pages.

19. In addition to gay men's NGOs working with the study group on the development and implementation of community-based HIV prevention interventions for MSM described above, a number of other NGOs providing HIV prevention and support services exist. Organisations in Tokyo include: PLACE Tokyo (an organisation providing support for people with HIV and their families and friends), JaNP+ (the Japan Network of People living with AIDS) and OCCUR (a gay and lesbian liberation organisation providing telephone counselling, HIV testing and support). In addition, Yokohama Cruise is a gay men's NGO working in Yokohama, and HaaT Ehime works in Ehime in the south of Japan.

20. Behavioural surveys, sociological research, and program evaluation research has been conducted to evaluate these activities. A survey of participants at a MSM club event in Osaka indicated that condom use during anal sex, HIV testing uptake and the purchasing of condoms has been steadily increasing, with similar results found in Tokyo. However, findings from the 2007 Osaka bar survey indicate lower uptake of HIV testing and condom use among MSM aged forty years and above.[28] This indicates that older MSM need to be the focus of future HIV prevention, education and support programs by NGOs working with MSM.

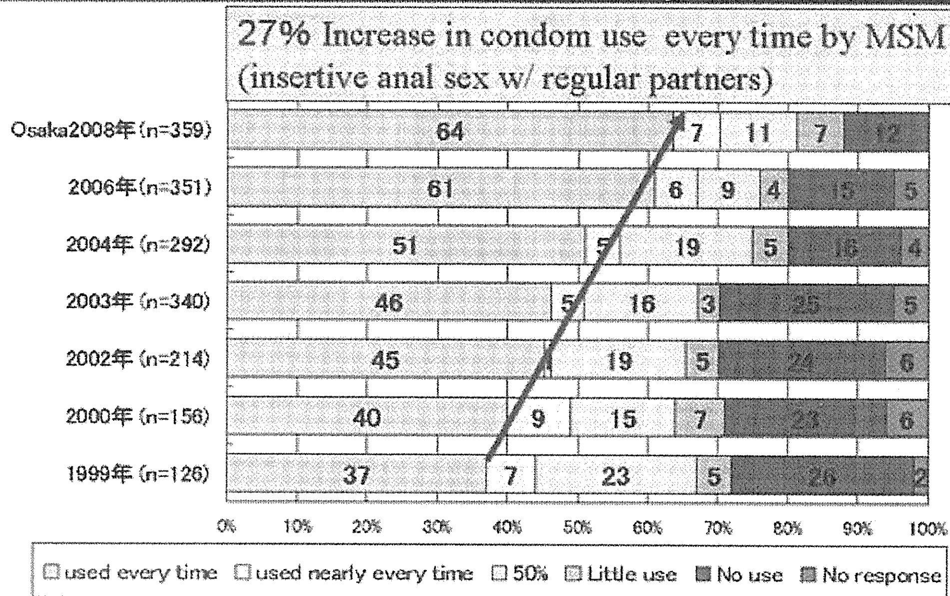

Table 5. Osaka Club Survey: Annual rates of condom use by MSM during insertive anal sex with regular partners (Source: S. Ichikawa, Research Overview, Study Group on the Development and Implementation of Community-based HIV Prevention Interventions for MSM Research Report 2008, Ministry of Health, Labour and Welfare, Tokyo, March 2009: 1–21 (in Japanese).

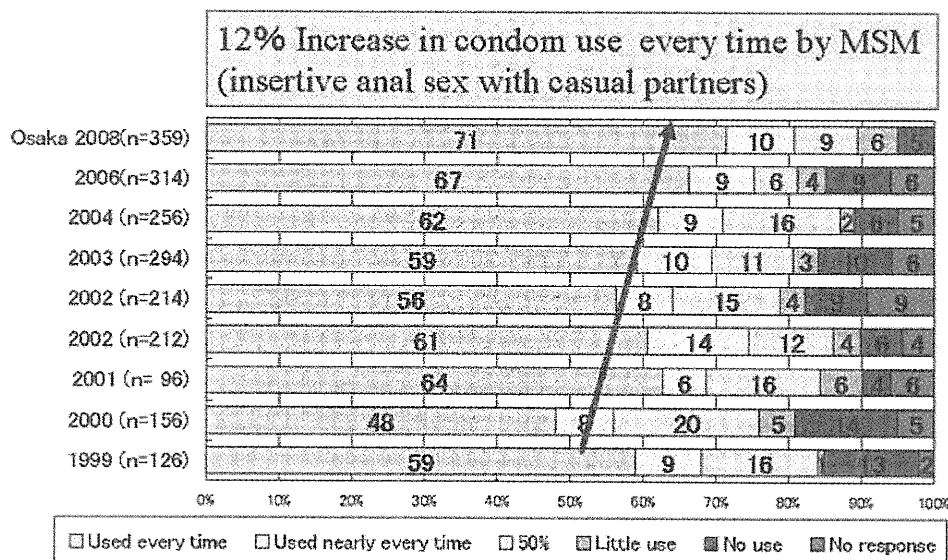

Table 6. Osaka Club Survey: Annual rates of condom use by MSM during insertive anal sex with casual partners. Source: S. Ichikawa, Research Overview, Study Group on the Development and Implementation of Community-based HIV Prevention Interventions for MSM Research Report 2008, Ministry of Health, Labour and Welfare, Tokyo, March 2009: 1–21, (in Japanese).

Increasing HIV testing and condom purchasing among MSM in Osaka & Tokyo (Club survey)

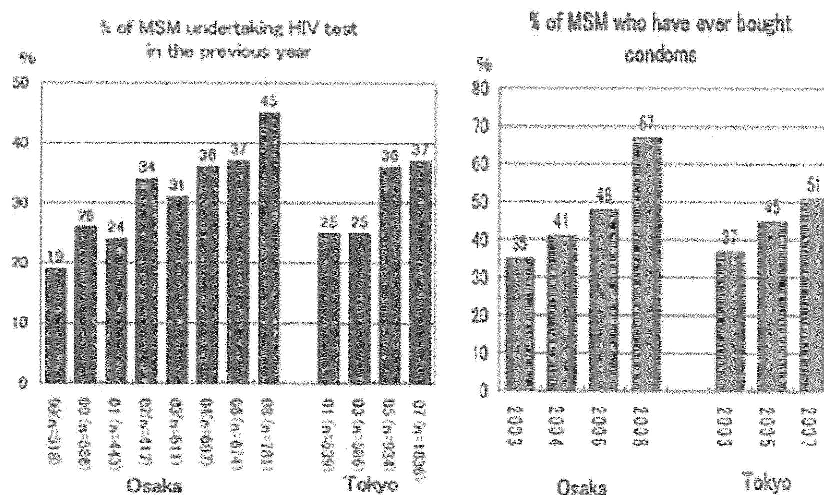

Table 7. Osaka Club Survey: Annual rates of HIV testing and condom purchasing. Source: S. Ichikaw a, Research Overview , Study Group on the Development and Implementation of Community-based HIV Prevention Interventions for MSM Research Report 2008, Ministry of Health, Labour and Welfare, Tokyo, March 2009: 1–21 (in Japanese).

Strategic Research for HIV prevention in Tokyo and Osaka

21. In 2006, the Ministry of Health and Welfare began funding a five-year "Strategic Research for AIDS Prevention among MSM" research project, which aims to double the rate of HIV testing and reduce the number of new HIV infections by 25 per cent among MSM in the Tokyo and Osaka areas. In order to achieve these goals, the research team, consisting of staff working in local HIV prevention NGOs and university and government public health researchers, developed and implemented programs to increase the awareness of the availability of HIV testing services and the merits of early detection. This was accompanied by capacity training for HIV testing staff working in public health centres to address the need for HIV counselling and testing that is sensitive to gay men's specific sexual and lifestyle issues. In addition, support services for MSM who are concerned that they might have HIV and for those who test positive have been set up.

22. While historically, gay men's groups tended to be rather disconnected in Japan, the Strategic Research project has facilitated the development of a number of collaborative projects between PLACE Tokyo (an NGO that provides support for people living with HIV, their families and friends) Rainbow Ring and JaNP+ (network of people living with HIV/AIDS groups). In order to raise the visibility of gay men and women living with HIV the Living Together Project is a forum through which people can talk about their experiences and thoughts concerning HIV testing and living with HIV. Stories from the project have been used in a number of different events, including readings accompanied by music, photographic exhibitions, and radio shows. These events have involved people living with HIV, medical professionals, government officials, popular singers, actors, artists and musicians. The Living Together slogan has also been taken up by the Ministry of Health and Welfare as the slogan for AIDS Day since 2007.

23. The model of community development described here has shown success in achieving HIV preventive behavioural change, increased awareness of the issues faced by people living with HIV and AIDS, and has led to improved collaboration between a wide range of gay community partners, local government agencies and research institutions. Current activities now should be taken to the next level, and become a national program. However, there are a number of challenges that need to be addressed in order to establish a national program for HIV prevention and care for MSM in Japan.

Challenges to HIV prevention, care and support among Japanese MSM

24. Despite the success of the community development model described above, a number of weaknesses remain. Current HIV prevention programming is based on pilot research projects. It is imperative that increased funding is secured to extend evidence-based HIV prevention and support services for MSM nationally. In the light of limited ongoing funding for a coordinated network for HIV prevention among MSM, and declining local government funding for HIV testing and prevention services, a well-funded long term vision and strategic plan is needed in order to arrest the increasing number of new HIV infections among MSM, and to give adequate support for MSM living with HIV.

25. Greater co-ordination is needed among government departments, including the Ministries of Health, Education and Justice, as well as within local government. In addition, the current system of re-deployment of civil servants means that government officials are moved after 2 to 3 years in a post. This means constant advocacy and sensitisation efforts by NGOs, and it is a barrier hampering the development of effective HIV policies. In order to improve co-ordination for prevention and support activities, a national coordinating body needs to be established, including representatives from the government, HIV-related NGOs, especially gay men's NGOs, researchers and clinicians. A similar body could also co-ordinate HIV research among MSM nationally, in order to identify research needs and priorities, distribute funding and oversee evaluation.

26. HIV research, and in particular, research with MSM attracts small numbers of researchers, most likely due to the stigma attached to researching sexuality in Japan. A greater number of researchers from a wide range of disciplines, including social science, public health, education, media studies, behavioural sciences, policy studies, cultural studies, gender studies and sexualities studies are needed to carry out research with MSM, in order to place the issue of HIV transmission and prevention among this group of men in its proper social context.

27. However, the most pressing need is to increase funding to and political commitment for a nation-wide expansion of efforts towards MSM community development in order to sustain, and optimally increase gay men's and women's community based activities and their coverage. These NGOs have made connections with some gay businesses mainly concentrated in inner-city areas, but more funding is needed to increase outreach to men's bars located outside of these areas that are patronised by different demographics of men. Furthermore, in many cities links with local government departments are still rather weak. Stronger partnerships are needed in this area to facilitate dialogue on the issues and problems faced by MSM and other sexual minorities, leading to local government programs which are more sensitive to and inclusive of the needs of these groups.

Conclusion

28. In the face of increasing HIV infections among MSM, survey results indicate that community development activities carried out by gay NGOs have shown some success in increasing HIV preventive behaviours among MSM evidenced by increases in HIV testing and condom use among some samples of gay and bisexual men in some regional areas. However, Japan's response to the HIV epidemic among MSM faces a number of challenges. There is a need to expand activities by gay men's NGOs to promote HIV awareness in a wider range of cities and regions and to target both the younger and older age groups of MSM, who appear to be at a higher risk. NGOs face a lack of full-time paid staff and are overly dependent on unpaid volunteers. There is a low level of public funding for gay community development activities. Gay NGOs are too dependent on research funding to conduct their HIV prevention education activities. Ongoing funding is needed for gay NGOs and community centres to continue conducting HIV prevention and support, including the provision of sexuality sensitivity training for health centre staff and promotion of information on HIV testing services. Furthermore, networking within and outside of gay communities is needed to strengthen policy and program efforts. There is an urgent need for intervention, for if the current level of effort is maintained, it is unlikely that the growing HIV epidemic among Japanese MSM will be halted.

Endnotes

[*] We use the term 'gay' in gay community, gay NGO and gay community centre to describe the related activities in the context of this paper, although the activities of some groups in some regional areas are more inclusive of a wider range of identities and sexualities. Many of the 'gay' NGOs are conscious of the labelling problems associated with the use of foreign and local terms and tend to rely on more inclusive language and imagery, which would be difficult to adequately

describe in the scope of this paper.

The authors acknowledge financial assistance from a Japanese Ministry of Health and the Labour Sciences Research Grant: Research on HIV/AIDS.

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Published with the support of Gender and Cultural Studies, School of Culture, History and Language, College of Asia and the Pacific, The Australian National University.
URL: http://intersections.anu.edu.au/issue26/koerner-ichikawa.htm
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Page constructed by Carolyn Brewer.
Last modified: 22 August 2011 1342

Regional Feature: Testing, treatment and prevention among gay and other men who have sex with men in Japan – an update

By Jane Koerner and Seiichi Ichikawa

Japan is a country with low HIV prevalence by international standards. In 2009, less than 0.1% of the total population were estimated to be living with HIV.[1] Despite this, the yearly number of cases of HIV in Japan has been steadily rising, with dramatic increases observed among men who have sex with men since 2000.[2]

At the end of 2010, there were a total of 18,342 cumulative reports of people with HIV and or AIDS in Japan; this cumulative figure consists of 11,573 people with HIV and 5,330 people with AIDS. Additionally, there were 1,439 reports of people becoming infected through blood products prior to 1986.[3]

In 2010, 68% of new cases of HIV were acquired through male-to male sexual transmission, while heterosexual transmission accounted for 18% of cases.[4] Gay men and other men who have sex with men are therefore deemed a priority population in terms of HIV prevention in Japan.[5] Continued increases in Japan's HIV rates, along with disproportionate rates of HIV among men who have sex with men have led gay community-based groups, through funding by the Japan's Ministry of Health, Labour and Welfare (MHLW), to focus on capacity development activities around testing and treatment, and to support the development of awareness campaigns targeting gay men and other men who have sex with men.

Japan's response to HIV is based around the provision of education, voluntary HIV counseling and testing, and access to high quality HIV treatments.[6] While gay men and other men who have sex with men are designated as a priority group in relation to HIV policy, efforts to date have not slowed the steady increase in cases of HIV among this group. This article summarises recent HIV testing, treatment and prevention initiatives in Japan, particularly those that target priority populations of gay men and other men who have sex with men, and makes recommendations for future directions.

HIV testing

Japan's HIV testing policy is based on the provision of free and anonymous testing at public health centres, but the majority of these centres only provide HIV testing for a two to three hour period one day per week.[7] A few local governments have contracted volunteer based non-government organisations (NGOs) to provide rapid HIV testing services in the evenings and on weekends and non-anonymous HIV

tests are also available at hospitals and clinics, but the cost is not fully covered by health insurance.

While there has been little research into the accessibility of HIV testing services, a survey conducted among men who have sex with men attending a community-organised HIV testing event in Nagoya found that 66.5% of respondents reported that HIV testing at public health centers is difficult to access due to limited available times for HIV testing is and lack of information on where to go for testing.[8]

In 2006, the MHLW provided funding through the Japan Foundation for AIDS Prevention for a five-year strategic research project that aimed to increase HIV testing rates and reduce AIDS diagnoses among the general population and men who have sex with men in the Tokyo and Osaka areas.[9] One of the project's aims was to increase gay and bisexual men's awareness of gay-friendly HIV counseling and support services, using gay community campaigns produced by NGOs. This was accompanied by workshops for public health centre staff to increase their capacity to address the needs of gay and bisexual men. Community campaigns promoting HIV testing and the merits of early diagnosis were also conducted in 2010.

While the final results of all this work are yet to be published, the project has fostered a range of collaborations between local government and NGOs that work with gay and HIV-positive people. The project has also successfully collated a range of information on HIV testing, counseling and support services for men who have sex with men. Furthermore, the NGOs involved with the project were able to extend their outreach to previously unreached groups piloting new information tools, and support HIV testing projects.

A future priority is to increase the availability and capacity of gay-friendly HIV testing services around the country, which at this time remain variable in their capacity to provide non-judgmental HIV testing and counseling. We believe that improving the accessibility and sensitivity of public health centre HIV testing would benefit not only gay, bisexual and other men who have sex with men, but also other groups using HIV testing services, including sex workers, young people, foreigners and people who use drugs.

Treatment

The standard of medical treatment for HIV available in Japan is high, with new antiretroviral drugs rapidly included into treatment regimen guidelines and made available at a minimal basic cost through health insurance. While health insurance is available to all Japanese residents, access requires legal residence status and is dependent on the payment of monthly health insurance premiums; people with low incomes and illegal foreign workers are precluded from accessing health insurance, and are therefore also unable to access subsidised HIV treatments.[10]

People living with HIV and AIDS also face high levels of social stigma and many people have concerns about employers and others finding out about their HIV status.[11,12] There have been a number of recent studies conducted regarding social isolation[13], work-related issues[14], and treatment issues[15] faced by people living with HIV. In relation to HIV-positive gay and bisexual men, research regarding attitudes and behaviours relating to safe sex practices indicates the need for more targeted programs to reduce stigma and increase condom usage among these groups.[16]

A recent internet survey of people living with HIV investigated respondents' experiences of receiving a positive HIV test. Of the 239 respondents, 49.8% stated that sex and sexuality-related issues were not adequately addressed by the medical professional providing the test result; only 48.5% were given follow-up information at the time of diagnosis (such as how to prevent HIV transmission; whether it was okay for them to have sex; how to prevent HIV transmission; whether it was necessary to disclose their status to sexual partners etc.).[17] These results indicate a reluctance among health workers to discuss sex and sexuality related-issues with HIV-positive people. This highlights the need for more post-diagnosis support and counseling services for gay and bisexual men – and more training for health practitioners, particularly in regional areas as HIV counseling and support services are concentrated in the largest cities of Tokyo and Osaka.

Prevention

The first baseline behavioural study – providing data on gay and bisexual men's HIV knowledge, HIV testing rates and condom use – was undertaken

continued overleaf

People living with HIV and AIDS also face high levels of social stigma and many people have concerns about employers and others finding out about their HIV status. There have been a number of recent studies conducted regarding social isolation, work-related issues, and treatment issues faced by people living with HIV.

continued from previous page

Survey location and sample	Tokyo Gay Club Survey					Osaka Gay Club Survey							Osaka Gay Bar Survey		
Survey year	2001[a]	2003[a]	2005[a]	2007[a]	2009[a]	1999[b]	2002[c]	2003[c]	2004[c]	2006[c]	2008[c]	2010[c]	2005[d]	2007[d]	2009[d]
Number of participants	n=539	n=529	n=934	n=1039	n=942	n=498	n=403	n=596	n=592	n=687	n=856	n=943	n=496	n=912	n=1315
Experience of HIV testing															
Past year	25.1	25.4	36.0	37.0	47.3	19.5	34.3	31.4	35.7	38.0	41.1	46.1	27.2	29.5	26.8
Lifetime	—	—	—	—	—	34.1*	—	—	—	—	—	—	—	54.2	51.8
Rate of condom use during anal sex with men in past six months															
100% use with casual partners	49.4	66.1	63.1	63.1	55.7	56.5	56.5	59.2	62.1	66.6	71.3	71.8	44.9	54.8	54.0
100% use with regular partners	42.8	54.9	56.6	55.4	54.4	45.9	45.9	46.2	51.4	61.2	63.6	62.4	34.1	39.2	42.6
HIV NGO program recognition															
Knowledge of gay community centre		21.0	42.3	—	—	—	—	26.2	44.4	33.6	48.7	52.0	30.0	39.8	59.3
Knowledge of gay community paper		—	—	—	—	—	—	38.2	52.0	33.4	40.2	48.2	73.4	64.4	70.6

Table 1 HIV testing, condom use and HIV NGO knowledge among men who have sex with men in Japan

a. Kimura, H., et al., *Osaka sex behaviour survey – Findings from the 2010 Osaka Club Survey, in Study Group on the Development and Implementation of Community-based HIV Prevention Interventions for MSM Heisei 22 Research Report*., S. Ichikawa, Editor. 2011, Ministry of Health Labour and Welfare: Tokyo. p. 168–179.

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* Past five years

in Osaka in 1999, following a successful partnership between gay men, researchers and a local government health official. The results obtained were instrumental in informing HIV prevention activities in Osaka, and this model was repeated in other regions, funded through research grants from the MHLW. However, it was not until 2003 that the first specifically targeted prevention programs for men who have sex with men were funded through the provision of grants to fund community centres.

The first centres were established in Tokyo and Osaka in 2003, and there are now six centres operating in Nagoya (since 2004), Fukuoka (2006), and Sendai and Naha in Okinawa in 2009. The establishment of community centres operated by NGOs and located in districts containing gay bars has been instrumental in facilitating networking between HIV prevention and support NGOs, gay commercial venues, community event organisers and individuals, but efforts were hampered by the lack of staff as most of the centers were only funded for one part time position (or less) per centre. In March 2011, the MHLW announced a new policy initiative to fund HIV programs for men who have sex with men in six cities, including Tokyo, Osaka, Nagoya, Sendai, Fukuoka, and Okinawa. This funding will be used to conduct information outreach delivering condoms and publications to gay commercial venues, and conduct other prevention and support activities. While this is an encouraging new step, NGO capacity remains rather weak, with small numbers of staff (currently nine positions nationally).

To date, HIV prevention activities have been evaluated through surveys conducted at gay clubs and gay bars, and mobile phone RDS surveys; survey findings indicate some success in increasing condom use, HIV testing, and NGO activities (see Table 1). Behavioural surveys indicate that prevention activities need to be extended to older gay and bisexual men, and that school-based HIV and sex education is needed for young gay and bisexual men.

While a few local governments have included men who have sex with men in their HIV testing and prevention policies and plans, the vast majority do not have any targeted HIV testing and prevention programs or plans. In order to extend prevention activities nationally, it is critical that NGO capacities are scaled-up and that local governments implement initiatives that include men who have sex with men in developing local HIV policies. Furthermore, a national coordinating body needs to be established, which includes representatives from national and local government to coordinate and direct the response in relation to gay and bisexual men. HIV policy is currently under review by the MHLW, with outcomes of the review expected in the next months.

Future challenges

This article has outlined initiatives which have attracted recent funding from the Ministry of Health, Labour and Welfare. There has been no commitment to maintain or scale up activities, and in view of the huge levels of government support needed for rebuilding efforts following the Northern Kanto tsunami and Fukushima nuclear reactor meltdown, there is a concern that resources will be diverted. In view of the continued increase in HIV infections among men who have sex with men in Japan, improved coordination and funding to increase gay friendly HIV testing, to support gay community HIV prevention efforts and to support people with HIV, must be continued.

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第58巻第13号「厚生の指標」2011年11月

投稿

日本成人男性におけるHIVおよびAIDS感染拡大の状況

－MSM（Men who have sex with men）とMSM以外の男性との比較－

塩野（シオノ） 徳史（サトシ）＊1　金子（カネコ） 典代（ノリヨ）＊2　市川（イチカワ） 誠一（セイイチ）＊3

目的　わが国におけるMSM（Men who have sex with men，これまでに同性間性的接触を有する男性）人口を推定し，さらに感染経路別にHIV感染者とAIDS患者の有病率，罹患率の推計に資するデータを得ることによって，日本成人男性におけるHIVおよびAIDS感染拡大の状況の一端を明らかにする。

方法　東北，関東，東海，近畿，九州の５地域に在住する20～59歳の日本成人男性を対象として，郵送法による質問紙調査を実施しMSMの割合を算出した。得られたMSMの割合と国勢調査人口を用いてMSMの人口を推定した。そしてエイズ動向委員会による報告を基に，日本国籍MSMとMSM以外の男性（日本国籍の男性からMSM人口を除いた男性全体）におけるHIV感染とAIDSの有病率と罹患率をそれぞれ推計し比較した。

結果　質問紙調査の有効回答者は1,659人（回収率：44.8％）であり，MSMの割合は全体で2.0％（95％信頼区間：1.32－2.66％）であった。MSM割合について居住地域間での統計学的な有意差はみられなかった（p＝0.170）。質問紙調査により得たMSMの割合2.0％を日本成人男性のMSM割合と仮定して有病率と罹患率をそれぞれ算出したところ，MSM以外の男性に比べてMSMは，HIV有病率では96倍，AIDS有病率では33倍の高さであった。罹患率については，MSM以外の男性では2001～2008年度の間にHIV罹患率は0.5～0.7，AIDS罹患率は0.3～0.5と大きな変化はみられなかった。一方，MSMでは，HIV罹患率は42.6（2001年）から103.7（2008年）と８年間で2.4倍，AIDS罹患率は11.6（2001年）から23.9（2008年）と８年間で2.1倍に拡大していた。

結論　20歳から59歳における日本成人男性のMSM割合の推定と，推定MSM人口を母集団としたHIVおよびAIDSの有病率と罹患率を算出した。日本人男性の中ではMSM集団において，HIV感染が拡大し，AIDS患者が増加していることが示された。わが国においてはMSM集団を対象としたHIVおよびAIDS対策を早急に実施していくことが重要である。

キーワード　HIV感染症，AIDS，有病率，罹患率，MSM，MSM割合

Ⅰ　緒　　言

日本を含むアジア地域におけるHIV感染者累計は470万人と報告されており，1990年代にピークを迎えた流行は2000年以降横ばい状態が続いている[1]。国や地域によって主要な感染経路は異なるものの，アジアでは薬物使用者，セックスワーカーとその顧客，MSM（Men who have sex with men，これまでに同性間性的接触を有する男性）がHIV感染の脆弱性が高く，これらの集団においてHIV流行が集中している[1)2)]。効果的なHIVおよびAIDS対策を進め

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るに当たっては，これらの脆弱性が高い集団の実態把握が必須となる。海外では，10,000人以上の大規模な成人集団を対象とした調査を行い，これらの脆弱性が高い集団の母集団の規模を推定している[3)-5)]。カナダでは，MSMやセックスワーカー，薬物使用者の集団の人口規模を推定し，各集団におけるHIV感染症の有病率を推計している。この推計により，MSMの間でのHIV感染の拡大やセックスワーカーや薬物使用者における感染の拡大を明らかにし，MSM等へのHIVおよびAIDS対策の必要性を示してきた[3)]。オーストラリアではMSMを対象にした質問紙調査を実施し，州別にMSMの有病率や罹患率を明らかにし，HIV/AIDS対策の効果評価に活用している[4)5)]。

わが国では，厚生労働省エイズ動向委員会（以下，エイズ動向委員会）によって未発症HIV感染者（以下，HIV感染者）およびAIDS患者の発生動向が報告されている。近年は，日本国籍男性におけるHIV感染者数やAIDS患者数の増加が著しく，報告された2008年のHIV感染者のうち約７割が男性同性間の性的接触を推定感染経路とする感染であった。このように日本では，MSMは最も実態把握と介入が必要な集団となっているが[6)]，MSMや薬物使用者などの母集団の規模を推定する研究はほとんど存在しないため，各集団における有病率や罹患率の推計は困難であった。

日本成人男性におけるMSMの割合については，1999年に行われた全国規模の調査では1.2％と報告されている[7)]。しかしこの調査は対面調査であったため，回答者自身のセクシュアリティ（性的指向）や同性との性行為については回答しにくさがあったことが考えられ，過小評価の可能性があった。また調査実施より10年が経過しており，割合が変化していることも考えられた。

そこで，本研究ではMSMにおけるHIVおよびAIDS感染状況を明らかにするために，郵送法による質問紙調査を実施し，調査により得られたMSM割合と国勢調査人口を用いてMSM人口を推定した。調査により得られたMSM割合とエイズ動向委員会による報告を基に，日本国籍MSMにおけるHIVおよびAIDSの有病率と罹患率を推計し，日本成人男性におけるHIVおよびAIDS感染拡大の状況の一端を明らかにすることを目的とした。

Ⅱ 方　　法

(1) 対象者と選出方法

本研究においてMSMとはこれまでに同性間性的接触を有した男性と定義し，MSM以外の男性については日本国籍の男性からMSM人口を除いた男性全体と定義した。したがってエイズ発生動向年報における異性間の性的接触，静注薬物使用者，輸血などに伴う感染例などがMSM以外の男性の中に含まれる。

MSM人口規模の推定について，対象者の選定は住民基本台帳に基づき関東，東海，近畿，九州地域を市郡規模で層化し，20歳以上60歳未満の男性3,000人を比例配分した。東北地域については検出力をあげるために他の地域よりサンプル数を増やし，同様の方法で700人を比例配分した。その数に基づき，（社）中央調査社の所有するマスターサンプルから男性の対象者を無作為に抽出した。本調査は2008年度厚生労働科学研究費補助金エイズ対策研究事業「男性同性間のHIV感染対策とその介入効果に関する研究」の一環として実施されたものであり，2008年度における介入対象地域である東北，関東，東海，近畿，九州の５地域のみを対象とした。

なお，本調査において使用したマスターサンプルは（社）中央調査社が定期的に実施している調査に，今後も回答に協力することを申し出た集団で構成されている。（社）中央調査社は世論調査，マーケティング調査などを主に行っており，健康分野に特化した調査対象者としては募集しておらず，健康問題に関心の高い者が偏っていることは少ないと考えられる。ただし，本調査で利用したマスターサンプルは日本成人男性母集団における年齢構成に比べて20～29歳層が少ない。

表1　回答者の基本属性

	総数	ブロック別集計				
		東北	関東	東海	近畿	九州
		青森県 岩手県 宮城県 秋田県 山形県 福島県	茨城県 栃木県 群馬県 埼玉県 千葉県 東京都 神奈川県	岐阜県 静岡県 愛知県 三重県	滋賀県 京都府 大阪府 兵庫県 奈良県 和歌山県	福岡県 佐賀県 長崎県 熊本県 大分県 宮崎県 鹿児島県 沖縄県
配布数	3 700	700	1 429	482	646	443
有効回収数	1 659	320	645	234	272	188
有効回収率(%)	44.8	45.7	45.1	48.5	42.1	42.4
平均年齢(歳)	45.6	46.8	45.3	45.8	45.1	45.5
標準偏差	9.7	9.5	9.7	9.5	9.7	10.2
最少－最高年齢	20-60	21-60	23-60	21-59	20-60	22-60
年齢構成						
総数（%）	1 659 (100.0)	320 (100.0)	645 (100.0)	234 (100.0)	272 (100.0)	188 (100.0)
20～29歳	114 (6.9)	25 (7.8)	41 (6.4)	13 (5.6)	18 (6.6)	17 (9.0)
30～39	355 (21.4)	48 (15.0)	160 (24.8)	45 (19.2)	63 (23.2)	39 (20.7)
40～49	511 (30.8)	99 (30.9)	192 (29.8)	84 (35.9)	85 (31.3)	51 (27.1)
50歳以上	679 (40.9)	148 (46.3)	252 (39.1)	92 (39.3)	106 (39.0)	81 (43.1)

（2）　質問紙調査の実施概要

質問紙調査は2009年２月から３月に実施し，総数1,659人の有効回答（有効回収率44.8％）があった。質問紙の配布と回収は郵送で実施した。本調査は個人情報を特定する項目は設けず，匿名での回答とした。回答者には質問紙とは別にはがきに謝礼発送先の記入を依頼し，調査票とは別に返送する仕組みを取り入れ，薄謝を郵送で配布した。本研究実施計画については名古屋市立大学看護学部研究倫理委員会より実施の承認を得た。

（3）　分析方法

本調査で同性との性交経験がある，または同性・異性と両方との性交経験があると回答した者をMSMとし，MSM人口割合を算出した。そして平成17年国勢調査で公表されている[8]全国の20～59歳成人男性人口に乗じて，MSM人口を推定した。また厚生労働省エイズ発生動向委員会により報告されている2008年のMSMとMSM以外の男性におけるHIV/AIDS感染者数のデータと推定した人口を用いて有病率と罹患率を算出した。データの集計および統計処理にはSPSS for Windows, Version J11.5を用いた。各質問項目と地域間の関連などの統計学的検定にはχ^2検定を用い，有意水準５％を指標とした。

Ⅲ 結　　果

（1）　質問紙調査回答者の基本属性（表１）

質問紙調査の回収率・年齢分布を表１に示した。平均年齢は，全体で45.6歳±9.7歳であった。性別はすべて男性であり，有効回収率は42.1～48.5%，平均年齢は45.1～46.8歳であった。有効回収率，平均年齢は地域によって差はみられるものの，χ^2検定による統計学的な差異はみられなかった。なお，全地域において20歳代の回答者は少なかった。

（2）　MSMの割合（表２）

性交渉の相手が同性のみ，または同性と異性の両方と回答した人の割合は，東北1.6%，関東2.5%，東海3.0%，近畿1.1%，九州1.1%であり全体では2.0％（95％信頼区間（以下，95％CI）：1.32－2.66％）であった。同性との性交経験のある男性（MSM）の割合は，地域によって異なるが，どの地域においても９割以上は「異性のみ」であった。

これまでに性的魅力を感じたことのある相手の性別については，同性のみ，同性異性どちら

もと回答した人の割合は，東北4.7%，関東3.4％，東海4.3%，近畿3.7%，九州2.7％であった。全体では3.7%（95％CI：2.82－4.65%）であり地域によって異なるが，どの地域においても９割以上は，性的魅力を感じたことのある相手が「異性のみ」であった。

同性への性的魅力を感じたことがある男性または同性との性交経験のある男性を合わせた群（以下，同性愛群）の割合は全体で4.3%（95%CI:3.31－5.25%）であった。同性愛群の割合は地域によって異なるが，χ^2検定による統計学的な検定で有意差はみられなかった（p＝0.696)。そのうち，同性への性的魅力を感じたことがあるが同性との性交経験を持たない人は53.5%（全体では2.3%)，同性との性的魅力を感じたことがありかつ同性との性交経験を持つ人は33.8%（全体では1.5%)，同性への性的魅力を感じたことはないが同性との性交経験を持つ人は12.7%（全体では0.5%）であった。

表２　地域別にみた同性との性交経験のある男性および同性への性的魅力を感じる男性の割合

（単位　人）

	総数		回収地域										p値[1]
			東北		関東		東海		近畿		九州		
	n	%	n	%	n	%	n	%	n	%	n	%	
性交経験	1 659	100.0	320	100.0	645	100.0	234	100.0	272	100.0	188	100.0	
①同性のみ	25	1.5	5	1.6	13	2.0	3	1.3	2	0.7	2	1.1	
②異性のみ	1 565	94.3	299	93.4	606	94.0	218	93.2	260	95.6	182	96.8	
③同性と異性の両方	8	0.5	0	0.0	3	0.5	4	1.7	1	0.4	0	0.0	
④したことがない	55	3.3	16	5.0	20	3.1	7	3.0	9	3.3	3	1.6	
⑤無回答	6	0.4	0	0.0	3	0.5	2	0.9	0	0.0	1	0.5	
（再掲）													
同性との性交経験あり[4]	33	2.0	5	1.6	16	2.5	7	3.0	3	1.1	2	1.1	
性的魅力	1 659	100.0	320	100.0	645	100.0	234	100.0	272	100.0	188	100.0	
⑥同性のみ	34	2.0	7	2.2	13	2.0	6	2.6	6	2.2	2	1.1	
⑦どちらにも感じる	28	1.7	8	2.5	9	1.4	4	1.7	4	1.5	3	1.6	
⑧異性のみ	1 571	94.7	298	93.1	613	95.0	220	94.0	259	95.2	181	96.3	
⑨どちらにもない	8	0.5	1	0.3	4	0.6	1	0.4	1	0.4	1	0.5	
⑩わからない	12	0.7	5	1.6	3	0.5	1	0.4	2	0.7	1	0.5	
⑪無回答	6	0.4	1	0.3	3	0.5	2	0.9	0	0.0	0	0.0	
（再掲）													
同性に魅力を感じる[5]	62	3.7	15	4.7	22	3.4	10	4.3	10	3.7	5	2.7	
性的魅力と性行為による分類	1 659	100.0	320	100.0	645	100.0	234	100.0	272	100.0	188	100.0	
同性愛群[2]	71	4.3	16	5.0	26	4.0	13	5.6	10	3.7	6	3.2	0.696
異性愛群[3]	1 588	95.7	304	95.0	619	96.0	221	94.4	262	96.3	182	96.8	

注　1)　χ^2検定によるｐ値
　　2)　同性への性的魅力を感じているか，または同性との性交経験のある男性
　　3)　全体から「同性愛群」を除いた
　　4)　①と③の計である。
　　5)　⑥と⑦の計である。

表３　MSMとMSM以外の男性における有病率

	MSM	MSM以外男性	MSM/MSM以外男性比
推定人口（人）	682 801	33 457 236	
HIV感染者報告累計数（2008年)（人）	4 731	2 416	
HIV有病率（人口10万人対）	692.9	7.2	96
AIDS患者報告累計数（2008年)（人）	1 290	1 930	
AIDS有病率（人口10万人対）	188.9	5.8	33

（３） MSMの人口規模の推定

MSMの人口を推定するに当たって，平成17年国勢調査第１次基本集計結果[8]を用いた。全国の20～59歳における男性人口は34,140,037人であり，本研究において算出したMSM割合2.0%を基にMSM人口を計算したところ，わが国の成人男性におけるMSM人口は682,801人（95%CI：450,648－908,125人）と推定された。

（４） MSMとMSM以外の男性の有病率（表３）

平成20年エイズ発生動向年報から日本成人男性の，20歳から59歳におけるMSMの累計HIV感染者報告数は4,731人であり，累計AIDS患者報告数は1,290人であった。MSM以外の男性の累計HIV感染者報告数は2,416人であり，累計AIDS患者報告数は1,930人であった。推定されたMSM人口を基に，HIVおよびAIDSにおける人口10万対有病率を求めたところ，HIV有病率はMSMでは692.9，MSM以外の男性では7.2であった。AIDS有病率は，MSMでは188.9，MSM以外の男性では5.8であった。MSM以外

図1　日本成人男性における感染経路別HIV推定罹患率の年次推移（2001～2008年）

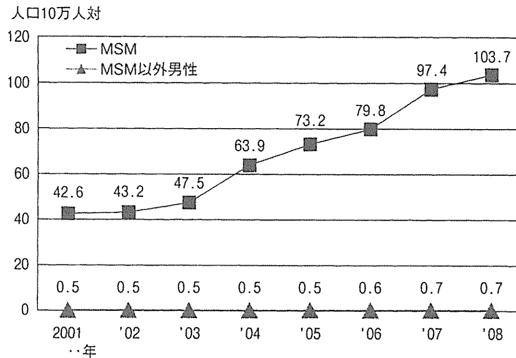
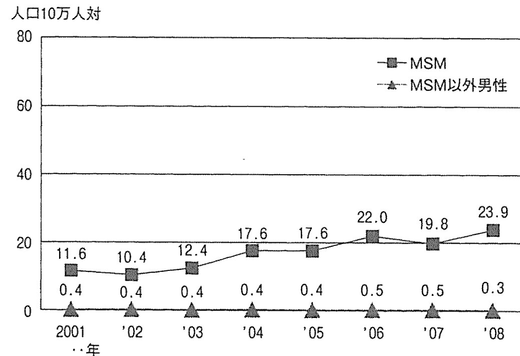


図2　日本成人男性における感染経路別AIDS推定罹患率の年次推移（2001～2008年）



の男性に比べてMSMのHIV有病率は96倍高く，AIDS有病率では33倍高かった。

（5）　MSMとMSM以外の男性の罹患率

郵送調査の結果から推定したMSM人口と平成20年エイズ発生動向年報の報告を用いて，2001年から2008年の罹患率を求め，経年的な推移をみた。HIVとAIDSそれぞれについて，MSMとMSM以外の男性別に人口10万対の罹患率を図1，図2に示した。MSM以外の男性では各年ともHIV罹患率は0.5～0.7，AIDS罹患率は0.3～0.5と大きな変化はみられなかった。一方，MSMでは，HIV罹患率は42.6（2001年）から103.7（2008年）と8年間で2.4倍，AIDS罹患率は11.6（2001年）から23.9（2008年）と8年間で2.1倍に拡大していた。

Ⅳ 考　　察

本研究では日本に住む成人男性におけるMSM割合を推定し，MSMとMSM以外の男性におけるHIVおよびAIDSの有病率と罹患率を比較した。以下に，本研究の限界を考慮したうえで，MSMとMSM以外の男性のHIV/AIDS感染状況の差異について考察する。

質問紙調査により算出したMSM割合は2.0％であり，同程度のサンプルサイズであった先行研究[7]の1.2％より高い結果であった。これは調査方法において先行研究が対面で行ったのに対し本調査では匿名性を保持した郵送法を用いたことが影響しているものと考えられる。また社会環境が10年前に比べて性的指向について受容的になり当事者が自身の性的指向を回答することに抵抗を持つ人が減ってきた可能性が影響していることも考えられる。

本研究で得られた回答者におけるMSM割合は，地域間で差はみられなかったため，全回答者におけるMSM割合である2.0％を日本成人男性におけるMSM割合と仮定し，日本におけるMSM人口規模を推定した。本調査には北海道，甲信越，中・四国地域は含まれていないが，対象地域となった東北，関東，東海，近畿，九州の5地域に在住する20歳以上60歳未満の男性人口は日本全国の男性人口の80.6％を占めている。したがって，質問紙調査により得たMSM割合の2.0％は，実際の日本成人男性のMSM割合に近似している可能性が高い。しかし，より正確なMSM割合の算出のためには，今後は全国を対象地域とした同様の調査を実施する必要があるだろう。海外では，代表性のある大規模人口集団に自動音声を用いた電話による調査を実施したMSM割合が明らかにされており，アメリカでは5.2％（2001－2006）[9]，6.5％（2005）[10]，オーストラリアでは6.1％（2003年）[11]，中国では2.2％（2009年）[12]と報告されている。本研究の結果は欧米より低く，中国に近い割合であった。

MSMとMSM以外の男性との比較結果につい

ては，本研究で分析対象となった集団の平均年齢±標準偏差は45.6歳±9.7歳と高く，20歳代の回答者が少ないことに注意する必要がある。20歳代に他の年代と同程度のMSMが存在している可能性を考慮すると，実際のMSM割合は本研究によって明らかにされた割合よりも高い可能性がある。またエイズ動向委員会により公表されているHIV感染者数およびAIDS患者数は，診断した医師の最寄りの保健所長に届け出により集計されているものである[6]。このサーベイランスでは，個人を特定していないため重複報告の可能性も指摘されており，実際のHIV感染者数およびAIDS患者数は報告数よりも少ない可能性がある[6][13]。したがって，推定されたMSMとMSM以外の男性の有病率における差異は過大評価となっている可能性がある。しかし，MSMにおけるHIV抗体検査受検経験は，オーストラリアにおいて85.3%（生涯における受検経験割合）[14]であるのに比べ，日本のMSMでは大阪で51.0%（2009年）[15]，東京で63.2%（2009年）[16]と低率であることが報告されている。先行研究では，MSMにおけるHIV検査の受検経験のない人（以下，未受検層）の推定感染者数は，日本における感染者数把握率の低さから報告数の約2～4倍であると推定されており[17][18]，MSMにおける実際の感染者数はエイズ動向委員会の報告数よりも多いと考えられている。一方で2001年から2008年までの8年間で罹患率がほとんど増加していなかったMSM以外の男性は，未受検層のHIV感染者数およびAIDS患者数においても同様に増加していないことが予測される。したがってMSMにおける未受検層を含めた感染者数は報告数よりも多いと考えられ，推定されたHIV有病率およびAIDS有病率は過小評価となり，MSMとMSM以外の男性の有病率における実際の差異はさらに大きい可能性がある。

医療環境には地域差があり，沖縄のような地方においては医師と患者との関係によっては，患者が実際の感染経路の申告を行わないケースが存在し，同性間の性行為感染であっても異性間の性行為感染として届けられる可能性があることが報告されている[19]。エイズ動向委員会の報告は，報告システムや医療体制にも影響を受けており，異性間感染と報告されている男性の中には，実際は同性間感染であった人も含まれている可能性がある。実際の同性間の性行為感染は報告数よりも多いことも考えられ，本研究により推定したMSMとMSM以外の男性の有病率における差異は過小評価となる可能性がある。

日本のMSM割合やMSM人口の年次推移を明らかにした先行研究はみあたらない。2001年から2008年までの日本成人男性人口はほぼ一定で推移しており，本研究ではこの間のMSM割合を2.0%と仮定してMSM人口を推定し，2001年から2008年までの罹患率と有病率の推移を検討した。2001年から2008年の間に，MSM以外の男性の罹患率はほぼ横ばいであったのに比べて，MSMではHIV罹患率は2.4倍，AIDS罹患率は2.1倍に増加していたことは，わが国におけるHIVおよびAIDS感染の拡大が，MSM集団を中心に起こっていることを示している。エイズ動向委員会の報告は新規感染者数ではなく新規報告数であり，罹患率とは異なるが，本研究において示したHIV罹患率の推移は実際の罹患率に近く，MSM以外の男性との差異は非常に大きいことが考えられる。

V 結　　語

本研究によって日本のMSM割合が明らかとなり，推定MSM人口を母集団としたHIVおよびAIDSの有病率や罹患率を求めることが可能となった。MSMにおける推定HIVおよびAIDSの有病率と罹患率から20歳から59歳における日本人男性の中ではMSM集団において，HIV感染が拡大し，AIDS患者が増加していることが示された。HIV感染者報告数は各地域の検査環境によって影響を受けることが考えられるが，AIDS患者報告数は診断した医師から報告されるため検査環境に左右されにくく[13]，AIDS患者の発生動向は報告時の数年前のHIV感染の状況を反映していると考えられる。日本人男性のAIDS患者報告数に基づく2001年から2008年ま

での罹患率では，MSM集団においてAIDS患者が増加していることが示され，MSM集団では早い段階からHIV感染が拡大してきたことが考えられた。今後，日本においてもMSM集団を対象として，HIVおよびAIDS対策を早急に実施することが重要であり，検査環境や医療環境の整備など支援体制を含めた予防介入を全国的に進めていく必要がある。

本研究は，2008年度厚生労働科学研究費補助金エイズ対策研究事業「男性同性間のHIV感染対策とその介入効果に関する研究（研究代表者：市川誠一)」により実施された。また本研究の実施にあたり，独立行政法人国立病院機構仙台医療センターの伊藤俊広先生にご協力を賜りましたことを特記し，感謝します。

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