Age pattern of sexual activities with the most recent partner among men who have sex with men in Melbourne, Australia: a cross-sectional study

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ABSTRACT

Background Sexual behavioural studies among men who have sex with men (MSM) are predominantly focused on penile-anal intercourse. Other non-anal sexual activities are under-studied. This study aimed to examine the age pattern of a range of sexual activities among MSM with the most recent male sex partner.

Methods We conducted a survey among MSM attending the Melbourne Sexual Health Centre in 2017. This survey asked about nine different sexual activities with their most recent regular and casual partner. A Chi-square trend test was used to examine the age patterns of each sexual activity.

Results A total of 1596 men answered the survey and their median age was 30 (IQR 25–37) years. With casual partners, kissing was the most common activity (92.4%), followed by performing penile-oral sex (86.0%) and receiving penile-oral sex (83.9%). The least common activity was insertive rimming (38.1%). Young men were more likely to engage in kissing (p_{trend}<0.001), receptive rimming (p_{trend}=0.004) and receptive penile-anal sex (p_{trend}<0.001) but they were less likely to have insertive penile-anal sex compared with older MSM. With regular partners, the most common activity was kissing (97.4%), followed by touching penises (90.0%) and performing penile-oral sex (88.3%). Age was not associated with most types of sexual activity with regular partners except mutual masturbation and receptive penile-anal sex. Younger men were more likely to masturbate mutually (p_{trend}=0.028) and engage in receptive penile-anal sex (p_{trend}=0.011).

Conclusions The pattern of sexual activities shows age-related differences with casual partners but less so with regular partners in MSM.

Key messages

- Kissing was the most common sexual activity among men who have sex with men (MSM), and younger MSM were more likely to kiss their casual partners than older MSM.
- Insertive or receptive rimming was the least common sexual activity among MSM. MSM were more likely to perform insertive rimming with their recent regular partner than casual partners.
- There was no age pattern in touching, receiving and performing oral sex, and mutual masturbation with the most recent casual partners.

INTRODUCTION

Sexual activities among gay, bisexual and other men who have sex with men (MSM) are heterogeneous. Although penile-anal intercourse is considered as the main sexual activity in MSM, past studies have found that not all MSM have penile-anal sex, rather engaging in other activities like kissing, oral sex and mutual masturbation.[1 2] Non-anal sex activities are not often the focus of behavioural and HIV research in MSM as they are considered as lower risk activities in relation to HIV transmission. In Australia, the Gay Community Periodic Surveys (GCPS) is the largest annual community-based behavioural survey collecting detailed sexual activities among MSM since 1996

and anal sex is the only sexual activity that is currently collected in GCPS. Although oral sex was asked about in the 1990s and 2000s, it was removed in the 2010s. Understanding sexual activities other than anal sex is important because sexually transmitted infections (STIs) can be transmitted through non-anal sexual activities.[3–7]

The implementation of biomedical HIV preventions such as pre-exposure prophylaxis have been associated with reductions in HIV incidence in MSM, but with substantial rises in STIs including gonorrhoea and syphilis.[8–10] Rises in STIs could be due to changes in sexual activities in MSM such as increased condomless sex, although data on sexual activities other than anal sex are limited.[10 11] The largest behavioural survey with detailed sexual activities was conducted in the US among 24 787 MSM in 2010. This survey asked about sexual activities with the most recent sexual partner but did not stratify between regular and casual partners.[2] A similar survey has never been done among MSM in Australia.

Furthermore, past studies have shown some STIs vary across age among MSM.[12] For example, younger MSM have a higher rate of acquiring gonorrhoea, particularly oropharyngeal gonorrhoea, compared with older MSM.[12] This observation could be explained by the evidence of younger MSM having more kissing partners than older MSM,[13] suggesting that younger MSM may be at a higher risk of acquiring oropharyngeal gonorrhoea as they have more kissing partners compared with older MSM. Furthermore, several studies have reported that *Neisseria gonorrhoeae* and *Chlamydia trachomatis* can be detected in saliva,[14 15] suggesting that STIs could be transmitted via saliva such as using saliva as a lubricant for anal sex or masturbation.[5 6] Understanding the age pattern of these activities is important for designing future STI prevention strategies.

The aim of this study was to gain a better understanding of whether sexual activities vary across age among MSM attending a sexual health clinic in Melbourne in Australia.

METHODS

A cross-sectional study was conducted at the Melbourne Sexual Health Centre (MSHC) in Victoria in Australia, between 6 April 2017 and 7 September 2017. MSHC is a major public sexual health clinic in Melbourne which provides free HIV/STI testing and management. All new clients who attend MSHC and clients who have not attended for more than 3 months are asked to complete a questionnaire using computer-assisted self-interview (CASI) which collects a history of sexual activities and demographic characteristics as part of the routine clinical care and management. During the study period, a voluntary short survey was added via CASI after the routine clinical questionnaire. This short survey was only restricted to clients who were (1) men who had had sex with another man in the last 12 months and (2) aged 16 years or above. This short survey collected detailed information on nine different types of sexual activities that they had engaged with their most recent regular and/or casual male sexual partner within the last 12 months which were not asked as part of the routine clinical questionnaire. Participants were asked to provide consent to participate in this survey by selecting 'yes' on the consent page via CASI. The nine sexual activities included (1) kissing each other, (2) touching penises (ie, two penises touched), (3) mutual masturbation using saliva as a lubricant, (4) insertive rimming (ie, participant's month touched/licked partner's anus), (5) receptive rimming (ie, partner's mouth touched/licked participant's anus) (6) receiving penile-oral sex (ie, participant's penis in partner's mouth), (7) performing penile-oral sex (ie, partner's penis in participant's mouth), (8) insertive penile-anal sex (ie, participant's penis in partner's anus) and (9) receptive penile-anal sex (ie, partner's penis in participant's anus).

Descriptive and frequency analyses for each sexual activity, stratified by age and type of partners (regular and casual), were performed. Age was categorised into four groups from 16–25, 26–35, 36–45 and ≥46 years. A Chi-square trend test was performed to examine the association between age group and each activity. All analyses were performed using Stata (Version 14; StataCorp LLC, College Station, TX, USA). This study was approved by the Alfred Hospital Ethics Committee, Melbourne, Australia (Number 512/16).

RESULTS

Characteristics of the study population

During the study period, 4443 MSM attended MSHC and completed the routine clinical questionnaire via CASI. All 4443 MSM were invited to participate in the additional voluntary short survey, and 1596 (35.9%) men consented to participate and completed the survey. There was no difference in the median age of those who chose to participate versus those who did not (30 vs 30 years, p=0.347). However, men who chose to participate in the survey had a higher median number of male partners in the last 3 months than those who declined to participate (3 vs 2, p<0.001). There was no significant difference in participation between Australian-born and overseas-born MSM (36.9% vs 34.9%, p=0.178). New clients were also more likely to participate in the survey compared with existing returning clients (45.1% vs 33.0%, p<0.001).

Of the 1596 MSM who completed the survey, the median age of participants was 30 (interquartile range [IQR] 25–37) years. The majority were born in Australia (52.2%, n=833). There were 588 participants (36.8%) reported having a sexual encounter with regular partners in the last 12 months and 1524 participants (95.5%) reported having a sexual encounter with casual partners in the last 12 months.

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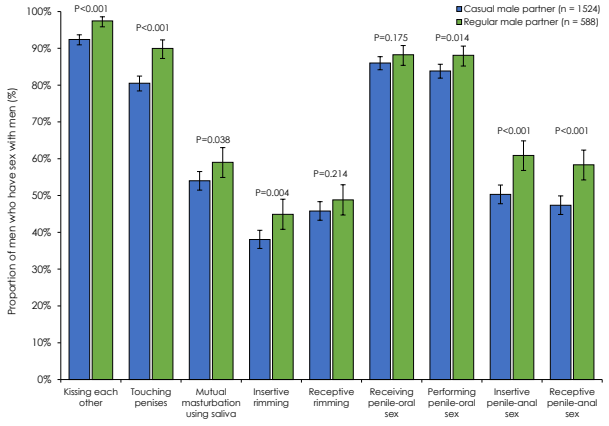

Figure 1 The proportion of men who have sex with men engaged in each sexual activity with the most recent male partner, stratified by the type of partner.

A total of 521 participants (32.6%) reported having both a regular and casual sex partner in the last 12 months.

Sexual activity with the most recent casual male partner

Among 1524 MSM who had casual partners, the most common sexual activity with the most recent casual male partner was kissing (92.4%, n=1408), followed by performing penile-oral sex (86.0%, n=1311) and receiving penile-oral sex (83.9%, n=1278) (figure 1). Rimming was reported as the least common activity with the most recent casual partner (ie, 38.1%, n=580 engaged in insertive rimming and 45.8%, n=698 engaged in receptive rimming). table 1 shows the frequency distribution of the number of sexual activities engaged with the most recent casual partner. Of the nine sexual activities, the median number of activities engaged with the most recent casual partner was 6 (IQR 5–7). The proportion of men who kissed their most recent casual partners decreased significantly with increasing age, from 95.2% among men aged 16–25 years to 82.5% among men aged ≥46 years (p_{trend}<0.001) (figure 2a, online supplementary table S1). Similarly, the proportion of men who had receptive rimming decreased significantly with increasing age, from 48.2% among men aged 16–25 years to 37.4% among men aged ≥46 years (p_{trend}=0.004); however, there was no significant age pattern in insertive rimming (p_{trend}=0.124). The proportion of men who had receptive penile-anal sex decreased with increasing age (from 52.8% among men aged 16–25 years to 39.3% among men aged ≥46 years, p_{trend}<0.001); however, the proportion of men who had insertive penile-anal sex increased with increasing age (from 43.4% among men aged 16–25 years to 54.0% among men aged ≥46 years, p_{trend}=0.002). There was no age difference in touching penises, mutual masturbation using saliva, and receiving and performing penile-oral sex.

Table 1 Frequency distribution of the number of activities engaged with most recent casual and regular sexual partner

Number of activities engaged	With the most recent casual partner (N=1524) (n (%))	With the most recent regular partner (N=588) (n (%))
1	31 (2.0)	3 (0.5)
2	58 (3.8)	10 (1.7)
3	109 (7.2)	30 (5.1)
4	180 (11.8)	47 (8.0)
5	296 (19.4)	104 (17.7)
6	281 (18.4)	121 (20.6)
7	264 (17.3)	99 (16.8)
8	139 (9.1)	68 (11.6)
9	166 (10.9)	106 (18.0)

n, number of men.

Sexual activity with the most recent regular male partner

Among 588 MSM with regular partners, the most common sexual activity with their most recent regular partner was kissing (97.4%, n=573), followed by touching penises (90.0%, n=529), performing penile-oral sex (88.3%, n=519) and receiving penile-oral sex (88.1%, n=518) (figure 1). Rimming was reported as the least common activity with the most regular partner (ie, 44.9% engaged in insertive rimming and 48.8% engaged in receptive rimming). Of the nine sexual activities, the median number of activities with the most recent regular partner was 6 (IQR 5–8). There was no age difference in sexual activities among regular partners except for receptive penile-anal sex and mutual masturbation (figure 2b, online supplementary table S2). The proportion of men who had receptive penile-anal sex decreased significantly from 71.6% among men aged 16–25 years to 54.7% among men aged 26–35 years and further decreased to 47.3% among men aged 36–45 years but increased to 58.2% among men aged ≥46 years (p_{trend}=0.011). The proportion of mutual masturbation similarly decreased with age, from 60.8% among men aged 16–25 years to 48.4% among men aged ≥46 years (p_{trend}=0.028).

DISCUSSION

This study describes the age pattern of different sexual activities with the most recent regular or casual partner among sexually active MSM in Melbourne, Australia. Our data showed that MSM engaged in a variety of sexual activities including, but not limited to, anal sex. Other activities such as penile-oral sex, touching penises and kissing were more commonly practised among MSM. Although rimming was the least common sexual activity, about 40% of MSM still reported rimming with their most recent partner and it was more commonly reported with a regular than a casual sex partner.

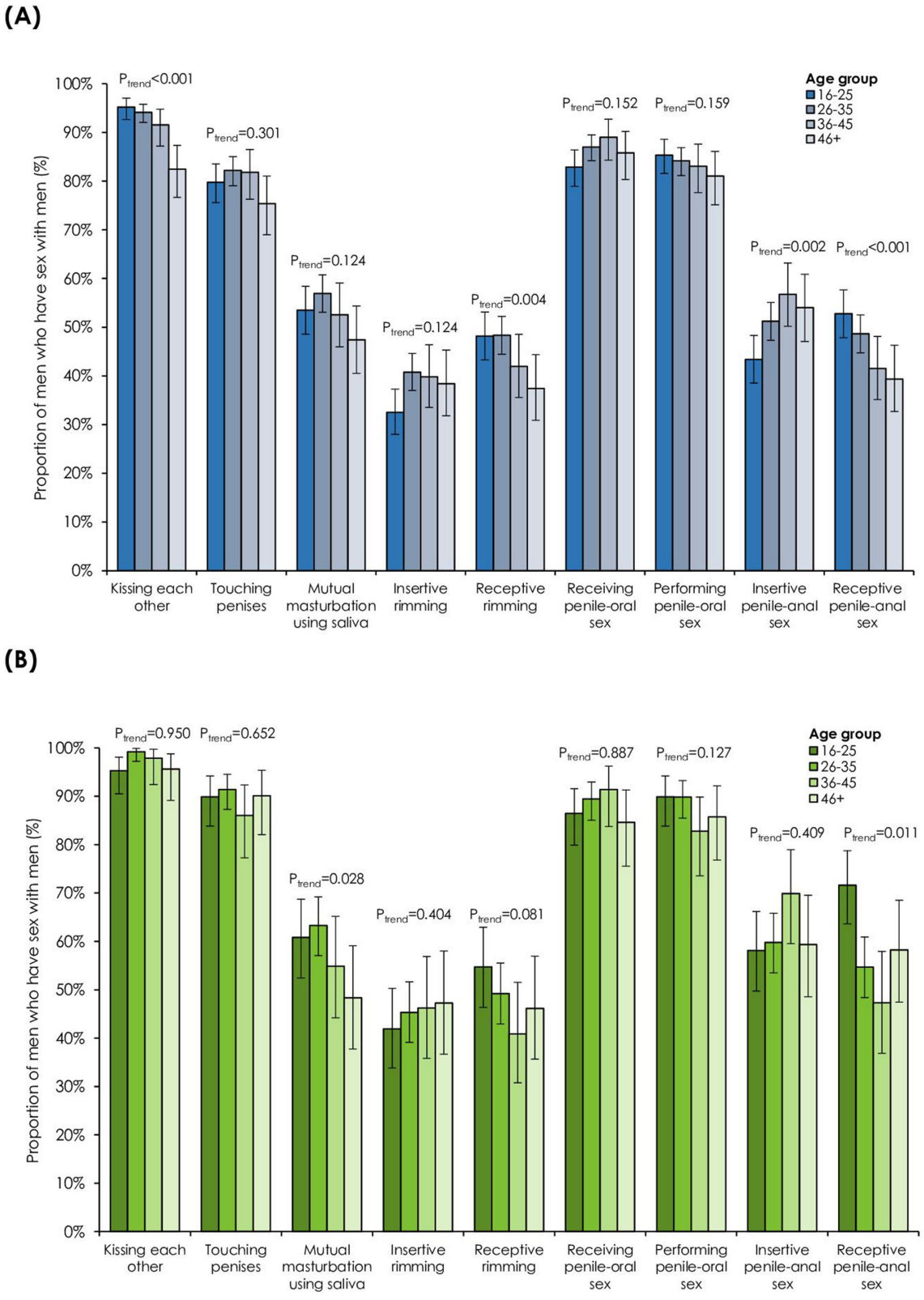

Figure 2 Age pattern of sexual activity among men who have sex with men with the most recent (A) casual and (B) regular male partner.

Kissing was the most common sexual activity among MSM, especially younger MSM. We found that almost all men kissed their most recent regular (97.4%) and casual (92.4%) sex partners, and this was higher than the estimate among 24 787 MSM in the US in 2010 (ie, 74.5% of MSM kissed their most recent partner).[2] An Australian qualitative study of 30 MSM found that most men enjoy kissing as men perceived kissing to be an important part of intimacy before sex.[16] Consistent with the US data, we

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found that rimming was the least common sexual activity among MSM (<50% for insertive and receptive with regular and casual partners) but this proportion was still higher than the estimates in the US (25.4% had insertive rimming and 26.1% had receptive rimming).[2] Past studies reported that most men do not enjoy rimming, particularly performing insertive rimming.[16]

The type of sexual activity with casual partners is strongly associated with age in MSM. Younger men are more likely to kiss and have receptive penile-anal sex, while older men are more likely to have insertive penile-anal sex. This pattern is similar to the US behavioural survey.[2] Previous research has elucidated the relationship between sexual position and age among MSM in Australia, showing that younger men were more likely to take the receptive position during condomless penile-anal sex compared with older men.[17] Additionally, younger men were more likely to have receptive rimming and penile-anal sex than insertive rimming and penile-anal sex with their most recent partner. Past studies have shown that sexual position varies in several factors such as races, ethnicity and masculinity but there have been very limited studies exploring the relationship between sexual position and age.[18] This is consistent with receptive rimming and receptive penile-anal sex being more common in younger men, as receptive rimming often precedes receptive penile-anal sex, so it is expected that both activities are associated with each other.[2] In our study, we did not find any age-related pattern in touching, receiving and performing penile-oral sex and mutual masturbation with the most recent casual partners. Additionally, MSM tended to have fewer different types of activities with their most recent casual partner compared with their most recent regular partner, particularly among older MSM. Older MSM may view casual sexual encounters as more transactional, whereas younger men may seek out intimacy and connection with their casual partners.[19]

Our study suggests that the differences in sexual activity in different age groups could explain some age pattern of STI prevalence among MSM. For example, several epidemiological studies have found that younger MSM are more likely to have oropharyngeal gonorrhoea than older MSM;[12 20–22] however, the reason for this age pattern is unclear. If oropharyngeal gonorrhoea is mainly transmitted through kissing as suggested elsewhere,[7 13 20 23] our findings may be able to explain why younger men are at a higher risk of acquiring oropharyngeal gonorrhoea as they are more likely to engage in kissing compared with older men. However, the present study was a cross-sectional survey and we were unable to conclude the association between sexual activities and STI.

There were several limitations to our study. First, this study was conducted among sexually active MSM attending a single urban sexual health clinic in Melbourne, Australia. It is reasonable to hypothesise that MSM attending a sexual health clinic are more likely to be higher risk and also less likely to be in a monogamous relationship compared with a wider MSM community; therefore, our findings may not be representative of the whole MSM population. Second, misclassification might have occurred for defining 'regular' and 'casual' partners. Previous studies have identified the difficulties in categorising the types of partners into either regular or casual; for example, partners like 'fuckbuddies' can be categorised into either group.[24] Third, recall bias might have occurred because men were asked to self-report sexual activities with the most recent regular or casual partner based on a provided list of activities. Men could report the most recent partner in the last 12 months but we did not ask for the date when the sexual act occurred. Fourth, we only included nine different sexual activities, as these activities were asked in a previous US national survey.[2] However, other activities (eg, sharing of sex toys, docking (a man inserting his penis into another man's foreskin), fingering, group sex, sadism and masochism) are not uncommon among MSM and we did not include these activities. Fifth, other studies have shown racial–ethnic disparities in sexual activities.[25 26] However, we did not collect data on race and ethnicity. Further studies are required to investigate the age pattern of sexual activities with different races and ethnicities. Finally, other behavioural factors such as recreational drug and alcohol use are associated with risky sexual activities and these factors might have influenced the sexual activities with their partners but such behavioural data were not collected in this study.[27–30]

In summary, our study provides a detailed description of age-specific patterns for nine different sexual activities among MSM with both regular and casual partners. Most behavioural studies in MSM only examine anal sex, and sexual activities like kissing and oral sex are rarely studied as they are perceived to correlate with low risk of HIV transmission. These sexual activities are important, however, as they relate to the transmission of other STIs. Our findings could be used in mathematical modelling of STI transmission, as data on these parameters are very limited in the current literature.

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Contributors AK performed the statistical analysis, data interpretation and wrote the first manuscript draft. EPFC and CKF conceived the study idea and designed the study. EPFC assisted with statistical analysis and oversaw the study. All authors provided data interpretation, revised the manuscript for intellectual content and approved the final version of the manuscript.

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Patient consent for publication Not required.

Ethics approval Ethical approval was obtained from the Alfred Hospital Ethics Committee, Melbourne, Australia (Number 512/16).

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Data availability statement All data relevant to the study are included in the article or uploaded as supplementary information.

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