Sexually active older Australian's knowledge of sexually transmitted infections and safer sexual practices

Anthony Lyons,[1] Wendy Heywood,[1] Bianca Fileborn,[1] Victor Minichiello,[1,2,3] Catherine Barrett,[1] Graham Brown,[1] Sharron Hinchliff,[4] Sue Malta,[5,6] Pauline Crameri[1]

Abstract

Objective: Rates of sexually transmitted infections (STIs) are rising among older Australians. We conducted a large survey of older people's knowledge of STIs and safer sexual practices.

Methods: A total of 2,137 Australians aged 60 years and older completed the survey, which included 15 questions assessing knowledge of STIs and safer sexual practices. We examined both levels of knowledge and factors associated with an overall knowledge score.

Results: In total, 1,652 respondents reported having sex in the past five years and answered all knowledge questions. This group had good general knowledge but poorer knowledge in areas such as the protection offered by condoms and potential transmission modes for specific STIs. Women had better knowledge than men. Men in their 60s, men with higher education levels, and men who thought they were at risk of STIs reported better knowledge than other men. Knowledge was also better among men and women who had been tested for STIs or reported 'other' sources of knowledge on STIs.

Conclusions: Many older Australians lack knowledge of STIs and safer sexual practices.

Implications for public health: To reverse current trends toward increasing STI diagnoses in this population, policies and education campaigns aimed at improving knowledge levels may need to be considered.

Key words: sexually transmitted diseases, sexually transmitted infections, sexual health, safer sex, ageing, aging

Rates of sexually transmitted infections (STIs) are rising among older adults in many high-income countries, such as the United Kingdom and the United States.[1] In Australia, while overall rates for specific STIs for older adults are much lower than those for younger groups, the number of notifiable STIs other than HIV among those aged 60 years and older increased by 46% between 2009 and 2013.[2] Given this increase, it is important to examine older Australians' current knowledge of STIs and safer sex practices.

We conducted the first known survey of STIs and safer sex knowledge among Australians aged 60 and older. We had two aims: 1) to examine knowledge that sexually active older men and women had about STIs and safer sex practices; 2) to identify sociodemographic differences in their levels of knowledge.

Methods

This study was a component of Sex, Age and Me, a national study of sexual health and relationships among older Australians. As part of this study, a cross-sectional survey of older Australians was conducted July–December 2015. Individuals were only eligible to participate if they were Australian residents and aged 60 years or older.

No validated scale measuring knowledge of STIs and safer sex practices could be located so we developed a 15-question knowledge test containing items adapted from previous research[3] and information obtained from government sources (see Table 1).[4,5] Participants also reported on their age; sexual orientation; highest educational attainment; employment status; income; residential location; country of birth; relationship status; sources of STI knowledge (school sex education, friends, partner, healthcare provider, Internet, media source or other); personal STI risk perception; number of sexual partners in the past five years; previous STI testing; and use of online dating.

The survey was available online and in paper form. Recruitment advertisements were distributed across multiple platforms targeting older populations, including radio interviews, news articles, websites/newsletters of key ageing organisations, sexual health clinics, senior citizens/service clubs, local governments, an online dating site and Facebook. Additional paper versions

1. Australian Research Centre in Sex, Health and Society, School of Psychology and Public Health, La Trobe University, Victoria
2. School of Medicine and Public Health, University of Newcastle, New South Wales
3. School of Justice, Faculty of Law, Queensland University of Technology
4. School of Nursing and Midwifery, University of Sheffield, United Kingdom
5. National Ageing Research Institute, University of Melbourne, Victoria
6. Swinburne Institute of Social Research, Swinburne University of Technology, Victoria
Correspondence to: Dr Anthony Lyons, Australian Research Centre in Sex, Health and Society, School of Psychology and Public Health, La Trobe University, 215 Franklin Street, Melbourne, Victoria 3000; e-mail: a.lyons@latrobe.edu.au
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Table 1: Responses from sexually active Australians aged 60+ for 15 questions that tested their knowledge of STIs and safer sexual practices.

	Men (n=1,167)		Women (n=485)		*p*-value
	%	(n)	%	(n)	
1. What causes STIs?					0.461
Genes, hormone imbalances, reduced immune system function	2.1	(24)	1.9	(9)	
Poor hygiene, bladder problems, tight underwear	4.2	(49)	3.7	(18)	
Bacteria, viruses, parasites[a]	87.6	(1,022)	90.1	(437)	
Don't know	6.2	(72)	4.3	(21)	
2. Which sexual activities can spread an STI from one partner to another?					0.493
Vaginal sex and anal sex	11.7	(136)	9.7	(47)	
Oral sex	0.2	(2)	0	(0)	
All of the above can spread an STI[a]	86.5	(1,009)	88.9	(431)	
Don't know	1.7	(20)	1.4	(7)	
3. Someone can have an STI without any obvious symptoms					0.687
True[a]	88.9	(1,037)	89.5	(434)	
False	3.3	(38)	3.7	(18)	
Don't know	7.9	(92)	6.8	(33)	
4. You are less likely to catch an STI as you become older					0.144
True	4.6	(54)	2.7	(13)	
False[a]	80.5	(939)	83.5	(405)	
Don't know	14.9	(174)	13.8	(67)	
5. Who is at risk of catching an STI?					0.001
Anyone who has sex with a person who doesn't practice good personal hygiene	6.3	(74)	2.7	(13)	
Anyone who had unprotected sex with a person who has an STI[a]	91.9	(1,072)	97.1	(471)	
Anyone who has sex with someone they don't love	0.4	(5)	0	(0)	
Don't know	1.4	(16)	0.2	(1)	
6. What is safe sex?					0.026
Sexual contact with someone you know and love	6.9	(81)	4.1	(20)	
Sexual contact where a condom is used so that there is no exchange of semen, vaginal fluids or blood between partners[a]	90.8	(1,060)	95.3	(462)	
Sexual contact using contraception such as the 'pill'	0.3	(4)	0.2	(1)	
Cleaning and washing thoroughly after having sexual contact	0.9	(10)	0	(0)	
Don't know	1.0	(12)	0.4	(2)	
7. Do condoms offer 100% protection against STIs?					0.609
Yes, as long as they are used correctly	27.1	(316)	27.2	(132)	
No, because some STI germs are small enough to pass through latex	4.5	(52)	3.1	(15)	
No, because some condoms might break or not fully cover the infected area[a]	64.3	(750)	65.0	(315)	
Don't know	4.2	(49)	4.7	(23)	
8. Which of the following are possible symptoms of STIs?					0.033
Thrust, constipation, sexual arousal, tinnitus, flaky skin, runny nose	1.3	(15)	0.8	(4)	
Discharge, pain, sores, rash, irritation, fever[a]	90.2	(1,053)	94.4	(458)	
Acne, dental caries, chapped lips, insomnia	0.1	(1)	0.2	(1)	
Don't know	8.4	(98)	4.5	(22)	
9. Cold sores and genital herpes can be caused by the same virus					0.001
True[a]	75.1	(876)	81.2	(394)	
False	9.0	(105)	9.9	(48)	
Don't know	15.9	(186)	8.9	(43)	
10. Once a person has caught genital herpes, they will always have the virus					0.001
True[a]	72.1	(841)	81.0	(393)	
False	8.3	(97)	5.8	(28)	
Don't know	19.6	(229)	13.2	(64)	
11. Gonorrhoea can be transmitted through oral sex					0.040
True[a]	45.9	(536)	39.2	(190)	
False	14.7	(172)	16.1	(78)	
Don't know	39.3	(459)	44.7	(217)	
12. Chlamydia can lead to infertility in women					<0.001
True[a]	69.6	(812)	81.9	(397)	
False	2.1	(25)	2.3	(11)	
Don't know	28.3	(330)	15.9	(77)	
13. Genital warts can only be spread by intercourse					0.001
True	24.3	(283)	32.0	(155)	
False a	37.6	(439)	37.5	(182)	
Don't know	38.1	(445)	30.5	(148)	
14. Chlamydia only affects women					0.149
True	12.9	(150)	12.8	(62)	
False[a]	53.6	(625)	58.4	(283)	
Don't know	33.6	(392)	28.9	(140)	
15. Chlamydia can be transmitted by oral sex					0.090
True[a]	39.5	(461)	39.8	(193)	
False	9.0	(105)	12.4	(60)	
Don't know	51.5	(601)	47.8	(232)	

a Correct answer to knowledge item

were placed at a number of physical sites (e.g. seniors' festival, conferences targeting older people, libraries). Participants were informed that their survey responses were anonymous. The La Trobe University Human Ethics Committee approved the study.

Responses to the 15 knowledge questions were assessed using descriptive statistics along with chi-square analyses to assess differences between men and women. A total knowledge score (0–15) was computed by adding the number of correct responses. Sociodemographic differences in knowledge scores were assessed using two separate multivariable regression models for men and women. Sociodemographic variables were entered into these models if associated with knowledge scores at $p<0.25$ in univariable regression analyses. Analyses were conducted using Stata 14 (StataCorp, College Station, TX).

Results

A total of 2,137 Australian adults aged 60 and over completed the survey (2,101 online, 36 paper; median online completion time = 33 minutes). Due to small numbers (n=18), participants who did not report their gender or indicated a gender other than male or female (e.g. transgender) were excluded from analyses. As issues of STI and safer sex knowledge are primarily relevant to those who are sexually active, analyses were further restricted to 1,652 (77.3%) men and women who reported having sex (defined by the participant) in the past five years and who answered all knowledge questions. The majority of participants were in their 60s (78%), heterosexual (91%), had some tertiary education(78%), lived in suburban (45%) or regional locations(40%), and were born in Australia (68%). About half (53%) were married, while 13% were single.

Overall, participants correctly answered 10.9 out of 15 knowledge questions on average (SD=2.8; range 0–15). Most displayed good knowledge of general STI causes (Q:1: 88%), symptoms (Q8: 91%), and transmission modes (Q2: 87%). A large majority were well-informed about STI risk factors (Q5: 93%), that risk did not decrease with age (Q4: 81%), and that STIs could be present without obvious symptoms (Q3: 89%). A majority (92%) also correctly identified that safer sex involved sexual contact using a condom so there was no exchange of semen, vaginal fluids or blood between partners (Q6). Participants were less clear about the protection offered by

condoms (Q7: 64%) and the risk/transmission modes of specific STIs including chlamydia (Q12 :73%, Q14: 55%, Q15: 40%), genital herpes (Q9: 77%, Q10: 75%), gonorrhoea (Q11: 44%) and genital warts(Q13:38%).

Table 1 displays responses for each of the knowledge questions according to gender. A significantly higher proportion of women than men correctly answered six questions (Q5, 6, 8, 9, 10, 12). The only question answered correctly by significantly more men than women was "gonorrhoea can be transmitted through oral sex" (Q11).

On average, women scored higher than men on the total knowledge score (11.2 vs 10.7, $t(1650)=3.21$, $p=0.001$). Among men, independent factors associated with higher knowledge scores included younger age ($F[2, 1047]=18.78$, $p<0.001$); higher education($F[3, 1047]=5.10$, $p=0.002$); ever having had an STI test($F[2, 1047]=11.97$, $p<0.001$); a personal perception of being at risk of an STI($F[2, 1047]=13.49$, $p<0.001$); and knowledge obtained from 'other' sources ($F[6, 1047]=3.71$, $p=0.001$). In this latter group, responses included knowledge from books, life experience or as part of one's profession. For women, the only independent factors associated with higher knowledge scores were 'other' sources of STI knowledge ($F[6, 429]=4.77$, $p<0.001$) and ever having had an STI test ($F[2, 429]=5.75$, $p=0.003$).

Discussion

These findings provide new insights into older Australian's knowledge of STIs and safer sex practices. While participants had good knowledge of general STI causes and symptoms, they were less aware about the protection provided by condoms or that specific STIs such as chlamydia and gonorrhoea can be transmitted via oral sex. Although many participants correctly identified that safer sex involves the use of condoms, a smaller percentage were aware that condoms do not provide 100% protection for all STIs because they could break or might not fully cover the affected area. It may be possible, therefore, that some older people believe that if they used a condom they would not need STI testing.

Limited knowledge about different transmission modes has also been reported in the general adult population,[3] yet knowledge appears to be poorer in our sample. Older Australians commenced their sexual lives prior to widespread condom use, the discovery of HIV/AIDS, and the implementation of school-based sexual health education. It is also possible that their previous knowledge-seeking about condoms was mainly focused on pregnancy prevention rather than STIs.[6] Older populations are also not the target of contemporary sexual health and STI strategies.

This study provides insight into the characteristics of older people who may benefit from targeted education campaigns and interventions. Women had better knowledge than men. One possible reason may be that women are more likely to visit healthcare providers[7] and be exposed to education in healthcare settings. Lower levels of knowledge were reported by older men, by men with lower educational attainment, and by men and women who reported never having had an STI test. Education campaigns may do well to target these groups. Such campaigns need to be comprehensive, emphasising the potential for STI transmission through modes other than vaginal intercourse, the importance of STI testing, ways of negotiating condom use, and other strategies for managing sexual health, as some older men may be unable to use condoms and condoms may not be relevant for female same-sex couples.

This study was the first of its kind to examine knowledge of STIs and safer sex practices in a nationwide sample of Australians aged 60 and older. The study had some limitations. Sampling was not population-based and response rates could not be calculated, but participants were from diverse socioeconomic backgrounds. Participants were also English-speaking, so it is unknown whether findings generalise to other cultural contexts. Our results are additionally limited to the questions asked, which could be further refined or expanded in future work.

This research suggests that many sexually active older people are aware of STIs and to some extent prevention, although further education appears warranted. A main issue is how to support older people to keep up with trends in sexual health prevention. While overall STI rates for this group are low compared to younger people, recent increases in STIs among older people in Australia suggest that education initiatives need to be more inclusive of older people, especially older men, those with lower education and others with poorer STI and safer sex knowledge.

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