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# Are older people at risk of sexually transmitted infections? A new look at the evidence

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## Introduction

Two policy documents were published by the UK Department of Health in 2001 which established the service development agendas for their respective areas over the coming years. *The National Service Framework (NSF) for Older People*<sup>1</sup> sets out national standards for ‘better, fairer and more integrated health and social care services for older people’ and ‘addresses conditions significant to older ages’ to promote ‘active and healthy aging’.<sup>1,2</sup> *The National Sexual Health Strategy*<sup>3</sup> identifies ways to ensure that the sexual health of the UK population is maximized, predicated on the grounds that ‘our sexual health affects our physical and psychological well-being and is central to some of the most important and lasting relationships in our lives’.<sup>3,5</sup> What is striking, if perhaps ultimately unsurprising, is that there is no overlap between the documents. The *NSF for Older People*<sup>1</sup> makes no reference to sexuality or sexual health issues, and the *National Sexual Health Strategy*<sup>3</sup> makes no reference to older people and, indeed, explicitly focuses on younger people, particularly through linking the prevention of sexually transmitted infections (STIs) with the reduction in teenage pregnancies.

At a policy level it is therefore apparent that examining sexual risk-taking among older people is not seen as a priority, or even a necessity. Similarly, although a substantial body of research has been undertaken around STI transmission since the advent of the AIDS pandemic in the early 1980s, the focus of this research has been almost exclusively upon the young. This is well exemplified by the upper-age cut-off imposed by the latest *National Survey of Sexual Attitudes and Lifestyles*.<sup>4</sup> This was a follow on from the first study, which only recruited participants up to the age of 59 years on the grounds that ‘many of the

topics for which data were collected are known not to affect older people greatly’.<sup>4,23</sup> The second study, considered by the Department of Health to provide a ‘sound evidence base for policy-making in key areas of public health’<sup>5</sup> only recruited participants up to 44 years of age.<sup>6</sup>

The current review will explore the extent to which placing people over the age of 45 outside the remit of national, population-based surveys of sexuality and sexual health issues can be clinically justified through an examination of available evidence regarding later-life sexuality and, specifically, sexual risk-taking among older people. This will be explored through an examination of existing literature identifying levels and correlates of sexual risk-taking in later life and evidence of STIs in the older population, including HIV/AIDS.

## Later-life sexuality

Most research examining sexuality and sexual health in later life has tended to be small-scale and reductionist, conceptualizing ‘sexuality’ as a specific set of sexual acts which can be quantified and (supposedly) understood. The vast majority of work has also been undertaken within the US and very few UK-specific studies could be identified. For example, from the literature we can identify that older people in the US are sexually active (implicitly equated with sexual intercourse, although generally not defined), and that being male,<sup>7–13</sup> being in a ‘young elderly’ age-banding (i.e. 50–70 years),<sup>9,13–16</sup> being married,<sup>8,11,13</sup> being in good physical and mental health,<sup>8,11,17</sup> being well-educated,<sup>13</sup> having a good social network<sup>13</sup> and being sexually active and interested when younger<sup>8,18</sup> can be predictive of later-life sexual activity.

Research adopting a more multidisciplinary view of sexuality and aging remains the exception and is much needed. This is exemplified by the findings from one of the first UK studies<sup>19</sup> to be

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conducted with older people about sexuality and sexual health issues, which adopted a qualitative approach to explore the perceived importance of sex to quality of life. Key findings included that, although the oldest participants were less likely to consider sex to be of importance to their quality of life, this rating was not attributed to age *per se*. Rather, having a regular sexual partner, or, if you did not, feeling that you would do in the future, was of primary significance. For those who did have a partner, health status was crucial to the perceived importance of sex, with health problems leading to a reprioritization of sex.<sup>20</sup> For example, some participants identified that, if barriers to sexual intercourse are experienced, for example health problems or erectile dysfunction, 'sex' can take on a broader meaning to include behaviours such as kissing and cuddling. This has significant implications for the validity of quantitative surveys undertaken with older people, where the meaning of 'sex' and related terms is presumed to be fixed and universal.

However, from the literature, it is difficult to conclude more than that many older people are sexually active and consider sex as important to their quality of life. The overall dearth of research on this topic is reflected in the little work undertaken examining later-life sexual risk-taking, particularly in the UK.

### Sexual risk-taking in later life

One UK study<sup>21</sup> of sexual risk-taking among the general population can be identified and, whilst this reported a low overall response rate (approximately 50%), it does point to some important trends that warrant further investigation. Three hundred and nineteen individuals aged over 50 years were recruited at random via the electoral register from four electoral wards within Sheffield, selected for demographic diversity. Approximately 80% of respondents reported being currently sexually active (a limitation of the study is the fact this term was not defined) and 7% engaged in behaviours that might place them at risk of contracting a STI. Risk-takers were typically male, aged between 50 and 60 years and married. Being male was also related to reporting current or past sexual health concerns. In total, of 75 respondents reporting such concerns, two-thirds had discussed these concerns with their general practitioner (GP) or attended a Genitourinary Medicine (GUM) Clinic. Levels of

satisfaction with such consultations were generally high, but declined with increasing age. Overall, most participants felt they had not received very much information about STIs and HIV and about one quarter said they would like to receive more information on these topics.

The only other available UK data are derived from the first wave *National Survey of Sexual Attitudes and Lifestyles*.<sup>4</sup> Although this only included people aged up to 59 years, it did reveal evidence of sexual risk-taking in this oldest age cohort. Indeed, study participants aged 45–59 reported having had more than one sexual partner in the last year (men 5.4%; women 1.8%), rising to 13.7% of men and 6.8% of women in the last five years. Members of this group of older individuals with multiple sexual partners were predominantly male and unmarried. Overall, condom use was lowest in this oldest age group, with only approximately one-fifth reporting any condom use within the past year. Unfortunately, more recent data and behaviour change over time cannot be explored because the latest *National Survey of Sexual Attitudes and Lifestyles*<sup>6</sup> adopted an age cut-off of just 44 years.

As this represents the only UK research undertaken to explore later-life sexual risk-taking, it is necessary to draw upon the US literature, whilst remembering that cross-cultural differences do exist between the UK and the US with regards to many aspects of sexual behaviour.<sup>22</sup> The bulk of this work is further derived from the HIV/AIDS literature as little generic sexual health research relevant to this area could be identified.

Although one of the largest US sexual behaviour studies initiated in response to the AIDS epidemic did not include individuals over 60 years of age,<sup>23</sup> two other national surveys of sexual behaviour focusing on sexual risk-taking behaviours had a less rigid age cut-off. The National AIDS Behavioral Study (NABS),<sup>24</sup> for example, included individuals aged up to 75 years, and over-sampled those over 50 years to allow more in-depth analysis of data relating to the older age group. Overall, the study involved 2673 individuals randomly selected from 48 US states and 11 429 respondents from cities with a higher than average proportion of diagnosed HIV and AIDS cases (total  $n = 14\ 102$ ). Individuals over the age of 50 represented 22.8% of total participants ( $n = 3\ 219$ ). Interviews were undertaken by telephone and information was gathered concerning the prevalence of HIV risk

factors. Risk factors were defined as: having had two or more sexual partners in the last 12 months, being a blood transfusion recipient between 1978 and 1984, being haemophilic (unless recently tested HIV-negative) and reporting a risky sexual partner (HIV-positive, intravenous drug-user in the last five years, non-monogamous, transfusion recipient or haemophilic).

The authors identified that approximately 10% of the sample aged >50 years reported at least one risk factor for HIV infection and that for approximately 5.5% of nationally recruited participants of 50 years and over, and for 7.5% of the high-risk cities recruited participants of this age, this was a result of their sexual behaviour. In addition, at-risk individuals of this age were one-sixth as likely to use condoms during sex, and one-fifth as likely to have been tested for HIV, when compared to risk-takers in their twenties.

A second national US study which warrants discussion was undertaken,<sup>25</sup> and included a randomly selected sample aged 18 years and older ( $n=2058$ ). Data were collected by interview, apart from sexual behaviour information, which was recorded in self-administered questionnaires. Respondents over the age of 70 were the least likely group to have had sexual intercourse in the last five years, although 44.7% stated that they had had sex during this period (the comparable figures for individuals aged 50–59 and 60–69 were 92.7% and 74.6% respectively). Approximately 10% of those aged 50–59, 9% of those aged 60–69 and 8% of participants over 70 reported more than two partners during the past five years. Only a small minority of these individuals stated that they consistently used condoms, and this age group in general was less likely to consider that HIV/AIDS had had an impact on their sexual behaviour.

More recently, a study of risk-taking among older gay men in four US urban centres was undertaken.<sup>26</sup> Within a sample of 507 gay men over the age of 50, the authors identified that sexual risk-behaviours were relatively stable between the ages of 50 and 70, at which point decreases in such behaviours were identified.

These studies therefore identify that older Americans engage in sexual behaviour that place them at risk of contracting STIs, including HIV/AIDS, although few comparable data are available for the UK, partly because of the exclusion of middle-aged and older people from supposedly nationally representative samples of sexual behaviour.

## STI-related health issues and older people

STI-related health issues in later-life will now be explored, focusing initially upon the UK literature, followed by an analysis of US-based studies and reviews. HIV/AIDS will be considered in a separate section because of the unique transmission dynamics of this condition and the way in which it has been researched.

### *UK research to date*

A small number of UK studies have been undertaken exploring the characteristics of older people attending Genitourinary Medicine (GUM) Clinics, which are predominantly attended by individuals with STI-related concerns. The earliest investigated the numbers and diagnoses of patients over retirement age (65 for men and 60 for women) attending the GUM clinic at St. Thomas's Hospital in London during 1980/1981.<sup>27</sup> The author identified that 65 older people (51 men and 14 women) attended this clinic during a one-year period, representing 0.4% of total clinic attendance. The majority had self-referred to the clinic (73.3%), with other sources of referral including their GP and contact slips. The ethnicity of the sample was recorded, with 80% defined as Caucasian, 18.5% as West Indian and 1.5% Arab. However, more detailed socio-demographic data were not presented. An analysis of the sexual histories of the sample group led the author to conclude that 'these patients tend to carry their earlier sexual patterns at least into the early period of senescence'.<sup>27:127</sup> Thus, this study would appear to indicate that sexual risk-taking practices amongst older people reflect a continuation of patterns of behaviour established earlier in the life course.

Many of the themes identified by the above study were further explored in a review of men over 60 attending a GUM clinic in Birmingham,<sup>28</sup> providing additional evidence for the existence of STI in older men. Of the 87 patients in the sample, 67.8% were Caucasian, 20.7% Afro-Caribbean and 11.5% Asian. Although this would appear to be a high proportion of ethnic-minority attenders, the extent to which this reflects stratification in younger clinic attenders, or indeed the ethnic composition of the region as a whole, is unclear. The marital status of the sample was given as follows: 54% were married, 24.1% single, 10.3%

divorced and 6.9% widowed. This appears to indicate that there is an overrepresentation of unmarried individuals within the sample group. However, it is again unclear to what extent this finding is unique to this clinic, and indeed to this sample group, which excludes women. Little is known of the clinical characteristics of these older male GUM clinic attenders, although it is recorded that 18.4% had previously been diagnosed with an STI. More detailed information concerning sexual histories would be needed, though, to ascertain whether these individuals are 'lifetime risk-takers' or not.

A case-note review of 242 patients over the age of 60 (191 men; 51 women) attending two GUM clinics in the Trent region of England during a two-year period (1988–1989)<sup>29</sup> has also been reported. This appears to indicate that men are proportionately overrepresented within the clinic when compared to women. The finding concerning the treatment pathways of older attenders supports Kohiyar,<sup>27</sup> who identified that most older GUM clinic attenders self-refer to the clinic. Indeed, 73% of the Trent sample self-referred to the clinic and 'their general practitioners were not aware of their concerns or referral'.<sup>29,377</sup>

The reasons for this are unknown, as is the extent to which it reflects treatment patterns in other age groups. It was also interesting that a relatively large proportion of this sample reported 'risky' sexual behaviours. Approximately one-quarter of older clinic attenders (28.1%) had had casual sexual relations, 2.1% had paid for sex abroad and 2.5% had participated in casual ano-receptive intercourse without a condom. A further 7.8% of men were participating concurrently in both marital and extra-marital sexual relationships.

However, this study again fails to provide enough information to develop a detailed demographic and clinical profile of older GUM clinic attenders. In order to establish whether older GUM clinic attenders represent a unique sub-population within the clinic, as well as within the general population of their age group, more detailed analysis of larger samples would have to be undertaken, including comparisons with younger clinic attenders and relevant census statistics.

These more detailed analyses were undertaken as part of a three-centre study of GUM clinic attenders<sup>30</sup> which identified that, of 25 508 clinic attenders in Sheffield, Leicester and Nottingham

in 1995, 4% ( $n = 1003$ ) were over the age of 50 (range 50–54 to 85–90 years). The age and gender distributions of the older attenders were similar among the three clinics, though local differences did emerge in sources of referral and ethnicity. Comparisons with census data for the relevant catchment areas showed that non-married individuals were significantly overrepresented within the clinic samples as a whole. There was an association between age and diagnostic profile, with older patients more likely to be diagnosed with non-sexually transmitted diseases and diseases not requiring treatment. Furthermore, proportionately smaller numbers of older people were tested for HIV, especially among male patients. The authors conclude that, if clinic attendance within this age group throughout England were consistent with these three clinics, the total number of cases seen in individuals over the age of 50 would approach 16 000 for 1995. In addition, when compared with younger attenders, these older patients do exhibit distinct diagnostic and demographic profiles.

The follow-up to this study gathered more detailed information from older GUM clinic attenders themselves.<sup>31</sup> A self-administered questionnaire study linked to data from patient notes was undertaken within the same three GUM clinics in the Trent region. Participants comprised 224 individuals aged 50 years and older attending the three clinics during the study period. The majority of study participants were attending the clinic with a suspected STI ( $n = 145$ ; 64.7%) and approximately half (53.1%;  $n = 119$ ) were first-time GUM clinic attenders. Data available only for participants recruited from the Sheffield clinic indicated that, although the majority of participants reported having had only one sexual partner during the last 12 months, a significant minority reported considerably higher numbers of partners, including those classed 'higher risk' for STI acquisition. These data confirm that older people in the UK do engage in behaviours that place them at risk of STI acquisition and may attend GUM clinics for the first time in later life.

Further analyses from these study data focused upon the subsample of 121 symptomatic older patients attending with a suspected STI.<sup>32</sup> These identified that 43.8% ( $n = 53$ ) of these patients waited over two weeks between symptom recognition and clinic attendance. Reasons given for delay included wanting to 'wait and see' if symptoms improved and being embarrassed or

Table 1. UK AIDS cases and HIV infection for individuals aged 50 and over at diagnosis, by sex: to end of September 2003

Age	Male				Female			
	HIV		AIDS		HIV		AIDS	
	No.	%	No.	%	No.	%	No.	%
All ages	44 563	100	16 763	100	14 511	100	3 092	n/a
50–54	1 704	4	965	6	265	2	77	2
55–59	940	2	563	3	164	1	52	2
60–64	541	1	309	2	69	0	34	1
65+	345	1	209	1	54	0	19	1
Total aged >50 years	3 530	8	1 024	12	552	3	154	6

Health Protection Agency (HIV/STI Department, Communicable Disease Surveillance Centre) and the Scottish Centre for Infection and Environmental Health Unpublished Quarterly Surveillance Tables No.60, 03/03, data until 09/03.

afraid to attend the clinic. A logistic regression analysis identified that delay behaviour was predicted by history of HIV testing. Of particular significance was that comparisons with previous research<sup>33</sup> indicated that levels of delay behaviour reported by this older sample are higher than those exhibited by youthful populations with STI-attributed symptoms. Moreover, similar barriers to seeking treatment for a sexual health concern have also been reported by older people experiencing non-STI-related sexual problems,<sup>34</sup> indicating a need for health professionals to be proactive in addressing this group's sexual health needs. However, agist assumptions about which age groups are at risk of STIs, coupled with concerns that older people will be offended if a health professional raises sexual health issues, have been identified as preventing UK general practitioners (GPs)<sup>35</sup> and US primary care physicians<sup>36</sup> from discussing sexual health, including sexual risk-taking with older patients. It is likely that similar barriers are experienced by other health professional groups, indicating a real need for education and training in this area.

A review of STI-related issues in later-life undertaken within the US has drawn attention to the fact that not only is there evidence that older people engage in behaviour that places them at risk of contracting STIs, but that aging can in fact lead to increased susceptibility to contracting such infections.<sup>37</sup> This is because of immune response changes with age, the impact of underlying diseases that increase in prevalence with age (for example, diabetes), physiological changes and specific medications most frequently prescribed

to older individuals. A further consideration for clinicians treating STI infection is highlighted, namely that drug dosages have been based upon clinical trials undertaken with younger people. As it is known that physiological age-related changes influence the impact of many types of drugs, Fletcher stresses the importance of prescribing drugs for individuals with STIs on an age-specific basis.

### HIV/AIDS and older people

Approximately 11% of cases of AIDS and 7% of cases of HIV in the UK<sup>38</sup> have been diagnosed in individuals over the age of 50 (Table 1).

In the US, 13% of AIDS diagnoses and 7% of HIV diagnoses have been made in people over the age of 50.<sup>39</sup> Whilst the proportion of older people with HIV/AIDS is similar within the US and the UK, the majority of literature reviewed in this section is from the US, as only a few very small-scale studies have been undertaken within the UK.

### North American literature

Studies identifying the presence of HIV in older cohorts will be examined first. Research addressing the implications of HIV within older populations for both health care professionals and older people themselves will then be discussed.

A study instigated early on in the AIDS epidemic involved analyzing data routinely collected by the Center for Disease Control (CDC), with the aim of compiling a descriptive epidemiology of HIV and AIDS cases diagnosed among individuals

over the age of 50.<sup>40</sup> Comparisons were made with individuals under the age of 50 in order to identify any age-specific trends. Approximately 10% of AIDS diagnoses ( $n=11\,984$ ) up to December 1989 were identified as being in individuals over the age of 50; 7.3% were aged 50–59 years ( $n=8\,480$ ), 2.4% were aged 60–69 years ( $n=2\,741$ ), and 0.7% ( $n=763$ ) over 70. Exposure categories were distinct for older individuals, with those over 50 more likely to have acquired HIV by transfusion, or to have an indeterminable means of infection. However the majority of cases were transmitted through men having sex with men, for all ages under 70 years, although heterosexual transmission was also recognized as important. The percentage of patients diagnosed in the same month as death rose sharply by age to 37% in those aged over 80 years. That older people were more likely to have an indeterminable mode of HIV transmission was attributed to reticence on the part of individuals of this age group in reporting information on sexual behaviour and intravenous drug use. This finding, coupled with the fact that there was an increase in diagnosis in the same month as death for older people, indicates a reluctance on the part of health care professionals to explore sexual histories, or further to consider STI diagnoses among this age group, as noted earlier.

The issue of underdiagnosis was also addressed in a study, which involved testing all individuals over the age of 60 who had died in the Harlem Hospital Center, New York, for the presence of the HIV antibody<sup>41</sup>; patients diagnosed with HIV/AIDS prior to death were excluded from the study. A significant minority of those tested (5.05%;  $n=13$ ) were found to be HIV-antibody positive, although hospital personnel had not previously identified this diagnosis. Indeed, none of these individuals had been tested for HIV, despite having risk factors for the virus, including intravenous drug use. Although it is stressed that these findings cannot be extrapolated either to the general population, or to other older hospital patients, this study does confirm that health care professionals do not anticipate older people's risk of acquiring HIV/AIDS.

The characteristics of individuals over the age of 60 diagnosed with HIV or AIDS within a large urban hospital have also been described.<sup>42</sup> It was found that this group included over five times as many men as women, and that the primary risk

factor for HIV/AIDS transmission was homosexual or bisexual intercourse. Furthermore, the majority of patients presenting with characteristic HIV symptoms had not been tested for HIV immediately, but had waited a median of 3.1 months (range 1–10 months) before this was suggested by their doctor.

A study of HIV prevalence and risk-behaviour data among 2881 men who have sex with men (MSM) aged 50 years or older was conducted in 1997 in New York, Los Angeles, Chicago, and San Francisco and analyses presented for the 507 participants over the age of 50.<sup>26</sup> Nineteen per cent of men in their 50s, 3% of men in their 60s, but no men in their 70s were identified as HIV-positive (HIV status was identified through self-report and biologic measures). The lower levels of infection among men in their 60s and 70s was attributed to high levels of AIDS mortality among older gay men prior to the availability of highly active retroviral therapy. Particularly high rates of infection were found among older black participants (30%), older gay men who were injection drug users (21%), moderately heavy drug users (35%), and 'less-closeted' men (21%). The authors conclude that 'current levels of HIV among older urban MSM in the United States are very high, particularly among those in their 50s'.<sup>26:S115</sup>

More recently, the first large-scale representative sample of older people with HIV in the US was conducted,<sup>43</sup> exploring individual circumstances at diagnosis and through disease progression in a probability sample of 2864 HIV-positive adults, including 286 over the age of 50. The authors identified that older people were more likely to be diagnosed with HIV when they had symptoms, and that older non-White participants had a more rapid disease progression than older White participants. A key implication of this study is that it indicates that HIV infection is likely to be under-reported among older individuals, casting doubt on the accuracy of published HIV datasets. Whilst comparable information is not available for the UK, there is no reason to suggest that late diagnosis of HIV among the older population is specific to the US.

Nichols *et al.* report the findings of a survey of 172 people >45 years living with HIV in the West Florida area, instigated due to the increasing prevalence of HIV in the older population of this area, coupled with concerns about high levels of unmet service need in this group.<sup>44</sup> This included a qualitative component and was largely focused

upon satisfaction with, and need for, services. Interesting findings included: (1) high levels of education in this cohort, in combination with dramatically low current income levels and high rates of poverty, (2) high prevalence of historical risk-events (e.g. sexual abuse) and behaviours, and (3) high rates of psychological morbidity (this sample were nearly 15 times more likely to be experiencing severe depression than the general population). Moreover, the particular stigma of being diagnosed with HIV as an older person also emerged as an interesting and important finding.

### UK literature

Very little has been written in the UK about HIV/AIDS and older adults. Only four original studies could be identified, all of which are very small scale. Rickard described the characteristics, living situations and carer support available for a sample of six HIV-positive individuals over 55 years of age.<sup>45</sup> She identified that these individuals experienced a high degree of social isolation and, because of their age, did not feel comfortable using general HIV services.

Similar findings are reported in a study undertaken in collaboration with Age Concern.<sup>46</sup> Thirty people were interviewed, of whom five were living with HIV/AIDS, eight were partners or parents of people with HIV/AIDS and 17 were employed by statutory or voluntary services. Key recommendations include the tailoring of services more specifically to older people, the need for support for carers and a befriending scheme for older people with HIV/AIDS.

A more clinical perspective was adopted in the presentation of two case-studies of HIV in patients aged 68 and 72.<sup>47</sup> The authors stress that these examples highlight the importance of getting away from preconceived notions of HIV risk groups, as well as having important clinical implications concerning management of HIV infection and AIDS in older patient groups.

Review articles have also been provided,<sup>48–49</sup> drawing attention to the need for additional research in this area. Age Concern has also produced a number of publications on the issue.<sup>50–51</sup> These publications include case-studies taken from interviews with older people with HIV and AIDS and also specific information for people with AIDS, their carers, family and friends and health care professionals.

### Conclusions and future directions

Overall, this review has identified that it is easier to identify gaps in our knowledge than factual information concerning prevalence of STI in older populations. However, even the limited evidence currently available indicates that many older people perceive sex as important, are sexually active, and a significant minority engage in behaviours that place them at risk of contracting STIs, including HIV. Moreover, health professionals appear largely unaware of later-life sexual risk-taking and rarely discuss safe sex with older patients.

It is important to contextualize the need for further research in this field within a broad social context. A consideration of the demographic and social changes likely to be experienced over the coming decades indicate that later-life sexual-health issues can only assume higher priority in the future. The expectations of older people in this country are changing and the cohort currently moving towards old age were socialized during the 1960s – the time of the so-called ‘sexual revolution’. Indeed, not only will demographic change ensure that there are more older people in the future than ever before, but that these people are likely to be more sexually active, have more sexual partners, and be more vocal about their sexual health concerns than previous generations. Moreover, recent shifts in societal perceptions of sexuality and aging, both resulting from and a reflection of the availability of new treatments for sexual ‘dysfunctions’ (most famously Viagra) have resulted in the maintenance of sexual function being seen as ‘a primary component of achieving successful aging’.<sup>52,12</sup> This trend is certainly important to address within the context of risk-taking, as it is likely to have significant implications for the future prevalence of STIs among older people. However, as outlined in the introduction, there is little indication that national policy positions on sexual health in later life will respond to these wider social and demographic shifts.

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