



Anal intercourse among heterosexual young adults: a population-based survey in Switzerland

Journal:	<i>The Journal of Sex Research</i>
Manuscript ID	20-165.R2
Manuscript Type:	Original Article
Keywords:	Quantitative research < METHODS USED:, Surveys < METHODS USED:, Heterosexual women < Sample Characteristics Related to Sexual Orientation < PARTICIPANT CHARACTERISTICS:, Heterosexual men < Sample Characteristics Related to Sexual Orientation < PARTICIPANT CHARACTERISTICS:, SEXUAL BEHAVIORS

SCHOLARONE™
Manuscripts

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

**Anal intercourse among heterosexual young adults: a population-based survey in
Switzerland**

Abstract

Anal intercourse (AI) among heterosexuals is an understudied and taboo subject. This 2017 Swiss national study aims to describe the characteristics and motivations of heterosexual young adults practicing AI. Participants with any same-sex experience, same-sex attraction or non-heterosexual identity were excluded. The Federal Statistical Office provided the initial sample and potential participants were recruited through postal mail inviting them to an online survey (response rate 15.1%). According to our research question, the sample used in this paper constituted of 3892 participants (52% males; 54% of the overall sample, mean age 26.3 years). Overall, 55% of women and 56% of men had never experienced AI, respectively 17% and 12% had done it once and 28% and 32% more than once. We found that participants engaging in AI had higher odds of practicing intercourse while intoxicated, being younger at first sexual experience, not using condom at last intercourse and reporting a history of sexual transmitted infections. The main reason reported by both genders for engaging in their first AI was being curious followed by being in love. In conclusion, AI is a widespread practice among heterosexual young adults and health professionals should be especially attentive to it.

Keywords: Anal intercourse, anal sex, heterosexuals, young adults, motivations, sexual behaviors.

Introduction

Anal intercourse (AI) is an understudied subject especially among heterosexuals, since most studies address men who have sex with men (MSM). The prevalence rates of youth under the age of 25 reporting heterosexual AI range from 0% to 49% according to a systematic review and meta-analysis without geographic or year limitation (Owen et al., 2015). This variation could be due to a diversity of practices between countries, or to underreport (Baggaley et al., 2013; Baggaley, White, & Boily, 2010), since participants may encounter difficulties in reporting such practices due to the stigma and taboo attached to it (Reynolds, Fisher, & Rogala, 2015; Stahlman et al., 2015). Even if this practice remains taboo, several studies (Bozon, 2008; Kontula, 2009; Lewis et al., 2017) have shown an increase of the practice in recent years, particularly among the younger generations.

AI exposes the recipient to a higher risk of sexually transmitted infections (STI) than vaginal intercourse, due to the increased possibility of abrasion and the decreased protective humoral immune barrier of the anal mucosae compared to the vaginal one (Baggaley et al., 2013; Garner, Schembri, Cullen, & Lee, 2015; Heijne et al., 2017). This risk is well known among MSM, but is rarely brought up and appears to be underestimated by a substantial proportion of the heterosexual population (Baldwin & Baldwin, 2000; Boekeloo & Howard, 2002; Halperin, 1999; Stahlman et al., 2015). Indeed, few prevention campaigns address that risk among heterosexual individuals (Baldwin & Baldwin, 2000; Halperin, 1999; Tian et al., 2008). The taboo and stereotypes associated with AI may lead to underreport of this practice by individuals and to inappropriate care and information given by health professionals (Benson, Gilmore, Micks, McCoy, & Prager, 2019).

1
2
3 Research looking into the characteristics of individuals having engaged in AI has showed that
4
5 the first AI usually happens a few years after sexual debut. For example, a Spanish study
6
7 (Blanc Molina & Rojas Tejada, 2018) observed a mean gap of 2 years. A few characteristics
8
9 have been linked to heterosexual AI, mostly among women: being younger at first vaginal
10
11 intercourse (Baldwin & Baldwin, 2000; Benson, Martins, & Whitaker, 2015), not using
12
13 condom at last intercourse (Baldwin & Baldwin, 2000; Hess, DiNenno, Sionean, Ivy, & Paz-
14
15 Bailey, 2016), having intercourse frequently (Tian et al., 2008), a higher number of lifetime
16
17 sexual partners (Benson et al., 2015; Halperin, 1999; Hess et al., 2016; Tian et al., 2008), a
18
19 history of treatment for sexually transmitted infection (STI) (Benson et al., 2015), having a
20
21 male partner who has more power in the couple's decision (Villar-Loubet et al., 2016), having
22
23 intercourse while intoxicated (Benson et al., 2019; Tian et al., 2008) and having received
24
25 drugs or money in exchange for sex (Benson et al., 2019; Hess et al., 2016).

26
27
28 Although some studies (Bozon, 2008; Kontula, 2009; Lewis et al., 2017) have looked at AI
29
30 among the general population, the majority of articles published on the subject address MSM
31
32 and, when including heterosexual practices, generally only the perspectives and
33
34 characteristics of females are considered. The aim of this research is to describe and compare
35
36 characteristics of heterosexual men and women engaged or not in anal sex in order to learn
37
38 more about the heterosexual young adults who practice AI in order to raise awareness and
39
40 shed light on heterosexual practices that are not commonly reported or studied. This study
41
42 could pave the way to better integrate heterosexuals in campaigns to prevent risky behaviors
43
44 for anal sex and stop the taboos around this practice.

51 52 53 **Methods**

54
55 Data were drawn from the 2017 Swiss national study on sexual health and behaviors
56
57 (Barrense-Dias et al., 2018). It provided self-reported information among young adults aged
58
59
60

1
2
3 between 24 and 26 years on September 30th 2016. This age range was selected in order to
4 ensure that the majority of participants would be sexually active and, at the same time,
5 sufficiently young to be able to recall accurately their sexual debut. The Federal Statistical
6 Office provided the initial sample that was representative of the resident Swiss population in
7 terms of sex, language (French, Italian or German) and canton of residence. We obtained their
8 postal address, and an invitation letter was sent with a random anonymous code to enter the
9 online survey. The final sample included 7142 participants (response rate 15.1%; mean age
10 26.3 when completing the survey). To correct a slight over representation of females from the
11 French-speaking part of Switzerland, analyses were weighted by gender and canton of
12 residence. Data were collected using a life history calendar (LHC) approach, a method which
13 facilitates recall of past life events (Martyn, Saftner, Darling-Fisher, & Schell, 2013; Morselli,
14 Berchtold, Suris Granell, & Berchtold, 2016). In the LHC, participants were asked to identify
15 the occurrence of different key events in their life such as moving to a new residence or
16 finishing school. Therefore, other personal events such as first sexual intercourse could be
17 placed in time by referencing it to other milestones of their life. Ethics clearance in agreement
18 with Swiss law was given by the Ethics research committee of the canton of Vaud. A detailed
19 description of the survey methodology can be found elsewhere (Barrense-Dias et al., 2018).

20
21
22 A total of 4760 individuals answered the questions related to whether and how often they had
23 AI. We excluded 5 individuals who identified themselves as neither male nor female. Sexual
24 orientation being a multidimensional and complex entity we used three variables to define it:
25 self-identification, sexual attraction and sexual behavior as recommended by various authors
26 (Coker, Austin, & Schuster, 2010; Priebe & Svedin, 2013). Self-identification was assessed
27 through the question “How would you describe yourself?” with the following possible
28 answers: heterosexual, homosexual, bisexual, I don’t know/I am not sure and other. Attraction
29 was measured with the question “What best describes how you feel?” with possibilities
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 ranging from attracted only to people of the same sex as me, to attracted only to people of the
4 opposite sex. Lastly, the sexual behavior dimension was based on the sex of people they had
5 sexual intercourse with. A dummy variable was created based on these three dimensions and
6 dichotomized into exclusively heterosexual (all aspects were reported as heterosexual) versus
7 non-exclusively heterosexual (at least one dimension was categorized as non-heterosexual).
8 We selected only those who were exclusively heterosexual (N=3892), therefore excluding 863
9 participants (43% males).

19 *Dependent variable*

20
21 In the questionnaire, AI was defined as the introduction of a penis or an object in the anus,
22 meaning that a man can also be receptive. We grouped participants based on their answers to
23 two questions. First, "*Have you ever practiced anal penetration?*" and, originally, the possible
24 answers included with whom: with women only, with men only, with men and women, I have
25 never experienced anal sex. As we had removed non-exclusively heterosexual participants,
26 the responses modalities were yes or no. Second, "*In general, at what frequency do you*
27 *practice anal penetration?*" with the following possible answers: "I only did it once", "Rarely
28 (three or four times a year or less)", "Sometimes (one to four times a month)", "More than
29 once a week" and "Almost every day". Since sexual experimentation is different from regular
30 practice, we differentiated individuals who had tried AI only once from those who had
31 practiced it more than once. Participants were divided into three groups. The NEVER group
32 consisted of individuals who had never tried AI, the ONCE group regrouped the individuals
33 who tried it only once, and the MULTI group included the participants who had practiced AI
34 more than once.

35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55 The final sample consisted of 3892 participants (52.2% males). As determinants in terms of
56 sexual behavior may be different between genders (Petersen & Hyde, 2010), and since
57
58
59
60

1
2
3 research has mainly focused on female characteristics, we analyzed men and women
4
5 separately in order to determine and compare both groups' characteristics.
6
7

8 *Independent variables*

9

10 To describe the population of this study, socio-demographic characteristics were included:
11
12 gender, birthplace of participant (Switzerland/other), family structure (parents together/other),
13
14 perceived family socioeconomic status (SES) at the age of 15 (dichotomized into average or
15
16 above/below average) (Hibell et al., 2009) and level of education attained (tertiary/below). As
17
18 health was reported as possibly affecting sex life (Brown et al., 2010; Field et al., 2013), we
19
20 assessed the self-perception of general health dichotomized (poor versus good) and mental
21
22 health. Mental health was evaluated with the Five-Item Mental Health Screening test
23
24 (Berwick et al., 1991), which consist of rating the frequency of particular feelings (such as
25
26 "being nervous") ranging from never to every time of 5 items during the last month. The score
27
28 of the answers combined ranged between 0 and 100 with good mental health defined as a
29
30 score of 52 or higher (Vester Thorsen, Rugulies, Hjarsbech, & Bjorner, 2013).
31
32
33
34
35

36 We also looked at the characteristics and context of the participants' sex life to situate anal
37
38 sex in the development of their sexuality. We asked them to report their age at different sexual
39
40 experiences with a sexual partner which was defined as a person with whom you have had
41
42 any sexual contact (including sexual caresses, fingering, or other manual simulation, oral sex,
43
44 vaginal and/or anal sex), oral sex, vaginal sex and / or anal sex. The younger age of all those
45
46 ages was selected as the age of sexual debut. As research reported less contraception use
47
48 during AI, we assessed contraception use. Contraception at first intercourse seems to have a
49
50 considerable impact on the further use of contraception (Meuwly, Barrense-Dias, Auderset, &
51
52 Suris Granell, 2020) and the rate of condom use at last intercourse allows quantifying current
53
54 condom use (Noar, Cole, & Carlyle, 2006). Thus, we asked participants to report if they had
55
56 used a condom at first and last intercourse.
57
58
59
60

1
2
3 As the non-use of condoms could be explained by a steady relationship and AI may be easier
4
5 to experience in such a relationship (Reynolds et al., 2015), we enquired whether the
6
7 relationship with the current partner was steady or not, a steady partner being defined as a
8
9 partner with whom you have a long-term relationship.
10
11

12
13 We also assessed the number of lifetime sexual partners with 5 categories that were grouped
14
15 into 1 to 3, 4 to 7 and 8 or more sexual partners. The hypothesis about the number of sexual
16
17 partners was related to sexual experience: the more sexual partners you have, the more you
18
19 might be interested in sex and new experiences such as anal sex. In addition, the multiple
20
21 sexual partners question has been widely used in relation to STIs, as it increases the
22
23 probability of being exposed to pathogens through multiple contacts (Ashenhurst, Wilhite,
24
25 Harden, & Fromme, 2017). As the number of lifetime sexual partners could be influenced by
26
27 the duration of sexual life (Baumann, Bélanger, Akre, & Suris, 2011), the interaction between
28
29 age at first sexual experience and number of lifetime sexual partners was considered and
30
31 added in the multivariate analysis. AI exposes to a higher risk of STI (Baggaley et al., 2013;
32
33 Belec et al., 1995; Levy, 1988). Therefore, a history of STI (yes / no) was assessed. In line
34
35 with previous studies on anal intercourse and its risky correlates (Hess et al., 2016; Leichter,
36
37 Chandra, Liddon, Fenton, & Aral, 2007; Lescano et al., 2009), data on different risky sexual
38
39 experiences (intercourse while intoxicated, receiving something in exchange for sex) and
40
41 sexual assault or abuse were also collected and dichotomized (yes/no). In addition, a question
42
43 asking participants if they had ever accepted intercourse unwillingly (“Have you ever
44
45 accepted sexual intercourse without really wanting?”), with three possible answers (no, yes
46
47 once and yes more than once) was used as a proxy for self-efficacy or assertiveness in the
48
49 context of a relationship and/or sexual intercourse.
50
51
52
53
54
55

56
57 Among participants who had engaged in AI, we collected the main reason they attributed for
58
59 engaging in AI the first time. Participants could choose one of eight propositions: “I was in
60

1
2
3 love”, “I was curious”, “I was eager to try”, “I wanted to do like others”, “I was forced”, “I
4 was on drugs/alcohol”, “I had made a bet with friends”, “I did it but I had no desire to”, “I do
5 not remember”, “Other”. Reasons offered were inspired from the National Survey of Sexual
6 Attitudes and Lifestyles (Erens et al., 2014).
7
8
9

10 *Data analysis*

11
12
13 First we ran a bivariate analysis comparing the three groups. We used chi-square tests for
14 categorical variables and ANOVA for continuous ones. As the sample size was relatively
15 large, we fixed the significance level of all statistical tests at 1% to avoid Type I errors.
16
17 However, for the discussion and interpretation of the results at the multivariate level, we also
18 considered the trend with the significance level of 5%. Therefore, statistically significant
19 variables at the bivariate level ($p < .01$) were entered in a multinomial regression analysis using
20 the NEVER group as the reference category. Results are given as relative risk ratios (RRR)
21 and 95% confidence intervals are indicated. We used STATA 14.0 (StataCorp, College
22 Station, TX, USA) for all the analyses.
23
24
25
26
27
28
29
30
31
32
33
34
35
36

37 **Results**

38 *Women*

39
40 Overall, 1026 (55%) participants had never experienced AI, 318 (17%) once and 516 (28%)
41 more than once. We measured a mean gap of 4.5 years between their first sexual experience
42 (any sexual contact) and their first AI, 4.1 years between their sexual vaginal intercourse and
43 their first AI and 3.6 years between their first oral sex and their first AI when AI occurred
44 later (data not shown). Looking at the different experiences, less than 1% ($n=11$; 0.8%) of
45 women reported a lower age at first AI than at first oral sex and even less ($n=5$; 0.3%)
46 reported lower age at first AI than at first vaginal intercourse.
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 *Bivariate analysis (Table 1)*
4

5 ***Sociodemographic and Personal Data.*** We found that having a family structure other than
6
7 parents together had a significant association with AI. Trends were found between AI and
8
9 being foreign born and family SES. For family SES, AI groups had different directions.
10
11 Participants in the ONCE group were more likely to report a low family SES while those in
12
13 the MULTI group reported it the least. No significant differences were found for attained
14
15 level of education.
16
17

18
19 ***Sexual life.*** Mean age at first sexual experience was 17.2 years. Participants in the NEVER
20
21 group were on average older at their first sexual experience than the others. Never having
22
23 tried AI was associated with a higher rate of condom use at last intercourse. Having practiced
24
25 AI more than once (MULTI group) was associated with having a higher number of lifetime
26
27 sexual partners, a history of STI, having had intercourse while intoxicated and having
28
29 accepted intercourse unwillingly. We found trends for a history of sexual assault or abuse and
30
31 having received gifts or money in exchange for sex with higher rates among the ONCE and
32
33 MULTI groups.
34
35
36

37
38
39 *Multivariate analysis (Table 2)*
40

41 Compared to participants in the NEVER group, those in the ONCE group were more likely to
42
43 have parents not together (RRR 1.66). They were younger at their first sexual experience
44
45 (RRR 0.81) and less likely to have used a condom at last intercourse (RRR 0.62).
46
47

48
49 Compared to participants in the NEVER group, those in the MULTI group were more likely
50
51 to have parents not together (RRR 1.33). They were younger at their first sexual experience
52
53 (RRR 0.87), less likely to have used a condom at last intercourse (RRR 0.72) and more likely
54
55 to have a history of STI (RRR 1.52), to have had intercourse while being intoxicated (RRR
56
57 1.42), and to have accepted intercourse unwillingly several times (RRR 1.36).
58
59
60

1
2
3 The main reasons for engaging in the first AI reported by participants are detailed in Table 5.
4
5 Women mainly reported to have been curious, followed by being in love. However, among
6
7 the Once group, the reason “I did it but I had no desire to”, exceeded the fact of being in love
8
9 and was the second main reported reason.
10
11

12 ***Men***

13
14 Overall, 1135 (56%) participants never experienced AI, 239 (12%) tried it only once and 659
15
16 (32%) more than once. We measured a mean gap of 4.8 years between their first experience
17
18 (any sexual contact) and their first AI, 4.4 years between their first sexual vaginal intercourse
19
20 and their first AI and 4.0 years between their first oral sex and their first AI when AI occurred
21
22 later. Looking at the different experiences, only 6 men reported a lower age at first AI than at
23
24 first oral sex and 10 reported lower age at first AI than at first vaginal intercourse.
25
26
27
28

29 *Bivariate analysis (Table 3)*

30
31 ***Sociodemographic and Personal Data.*** We found that having a family structure other than
32
33 parents together and a below tertiary level of education had a significant association with AI.
34
35 As for women, a significant association was also found with family SES but AI groups had
36
37 different directions. Participants in the ONCE group reported more often a low family SES
38
39 while those in the MULTI group reported it the least. No significant differences were found
40
41 for place of birth. A trend was found for poor mental health, with those in the MULTI group
42
43 reporting higher rates.
44
45
46
47

48
49 ***Sexual life.*** Mean age at first sexual experience was 17.5 years. Participants in the NEVER
50
51 group were on average older at their first sexual experience. Never having tried AI was
52
53 associated with a higher rate of condom use. The MULTI group was associated with having a
54
55 higher number of lifetime sexual partners, a history of STI, having had sexual intercourse
56
57
58
59
60

1
2
3 while intoxicated, having accepted sexual intercourse unwillingly and having received gifts or
4
5 money in exchange for sex.
6

7
8 *Multivariate analysis (Table 4)*
9

10 Compared to participants in the NEVER group, those in the ONCE group were more likely to
11
12 have parents not together (RRR 1.52) and to have an education level below tertiary (RRR
13
14 1.48). They were younger at their first sexual experience (RRR 0.87), more likely to report 8
15
16 or more lifetime sexual partners when age at first sexual experience was controlled for (RRR
17
18 1.17) and more likely to have had sexual intercourse while intoxicated (RRR 1.62).
19
20

21
22 Compared to participants in the NEVER group, those in the MULTI group were younger at
23
24 their first sexual experience (RRR 0.89) and less likely to have used a condom at last
25
26 intercourse (RRR 0.70). They were more likely to have a history of STI (RRR 2.16) and to
27
28 have accepted intercourse unwillingly more than once (RRR 2.37).
29
30

31
32 The vast majority of men reported being curious as their main reason for engaging in their
33
34 first AI (Table 5).
35
36

37
38 **Discussion**
39

40 This study shows that AI is a common practice among this sample of young adults in
41
42 Switzerland, with near to 45% of heterosexual women and men having experienced it, without
43
44 gender difference. This proportion ranges between a Finish study (Kontula, 2009) that
45
46 reported approximately half of both men and women in the younger generation having
47
48 experienced anal intercourse and the NATSAL survey with more than one third of 22-24
49
50 year-olds reported having ever experienced anal sex between 2010-2012 (Lewis et al., 2017).
51
52 The prevalence found in the present study is on the upper margin of what has been found in a
53
54 systematic review and meta-analysis (Owen et al., 2015). Overall, we found few differences
55
56 between the characteristics standing out in men and women. We also found that anal practice
57
58
59
60

1
2
3 occurred later than the first sexual experience, although the gap was twice larger than in a
4 Spanish study (Blanc Molina & Rojas Tejada, 2018).
5
6

7
8 We found a lower condom use rate at last intercourse among participants practicing AI. AI
9 has been shown to be used as a contraceptive method by some youth (Houston, Fang,
10 Husman, & Peralta, 2007), and the low condom rate could suggest that individuals are more
11 concerned with unwanted pregnancies than STI contamination (Stahlman et al., 2015).
12 Furthermore, participants practicing AI seem to engage in more risky sexual behaviors in
13 general. As shown in others studies (Baldwin & Baldwin, 2000; Benson et al., 2019; Benson
14 et al., 2015; Hess et al., 2016; Reynolds et al., 2015; Tian et al., 2008), we found that
15 participants engaging in AI were more inclined to practice intercourse while intoxicated, to be
16 younger at first sexual experience and to not use condom at last intercourse. This is quite
17 concerning, as those behaviors expose them to a higher risk of STI (Centers for Disease
18 Control and Prevention, 2015) and this was confirmed in our results as those engaging in AI
19 reported more a history of STI. Some research (Reynolds et al., 2015; Stahlman et al., 2015)
20 has shown that some women engaging in AI may use alcohol or drugs in order to relax before
21 AI or to mitigate pain during it. This could explain the increased report of intercourse while
22 intoxicated in the women's MULTI group, even though the question on intercourse while
23 intoxicated did not specify whether it was oral, vaginal or anal. This result could also show a
24 form of disinhibition with alcohol leading to other sexual acts or an attraction for
25 experimentation with both substances and sexual behaviors (Lescano et al., 2009).
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48

49 Women and men who had practiced AI more than once were more likely to have accepted
50 intercourse unwillingly several times. This could be used as a proxy of not asserting oneself in
51 a relationship. Studies exploring women motivations for AI reported that one of the most
52 frequent ones was to please their partner (Benson et al., 2019; Maynard, Carballo-Dieiguez,
53 Ventuneac, Exner, & Mayer, 2009) although many women also engaged in AI for their own
54
55
56
57
58
59
60

1
2
3 pleasure. To the best of our knowledge, there are no data for men on this subject and further
4
5 studies are needed.
6
7

8 Even though we selected only exclusively heterosexual individuals, we cannot assert that men
9
10 had only an insertive and not a receptive role in AI, as the question defined it as insertion of a
11
12 penis or an object in the anus. A study (Jozkowski & Satinsky, 2013) looking at youth's
13
14 sexual practice found that 4% of young heterosexual men had engaged in receptive anal
15
16 intercourse.
17
18

19
20 The main reason mentioned to engage in AI was being curious, more frequent among men,
21
22 followed by being in love. This underlines the fact that, for most participants, AI is part of
23
24 their sexual experiences. Among women who tried AI only once, the reasons "I did it but I
25
26 had no desire to" and "I was on drugs/alcohol" had a higher prevalence compared to other
27
28 groups and the former even surpassed the fact of being in love. This could explain why these
29
30 women did not repeat their AI experience. In the literature, curiosity or experimentation
31
32 (Benson et al., 2019; Maynard et al., 2009) was often a reason reported by women, but
33
34 wanting to please one's partner (Maynard et al., 2009), seeking partner's or personal pleasure
35
36 (Benson et al., 2019; Reynolds et al., 2015) or other less positive reasons such as suffering of
37
38 a quid pro quo situation (Reynolds et al., 2015) or partner's violence (Maynard et al., 2009)
39
40 were also reported.
41
42
43
44
45

46 **Strengths and Limitations**

47
48 First, despite a low response rate and given the sensitive topic of sexuality, we had still access
49
50 to a large sample of young adults living in Switzerland. Secondly, unlike most studies on AI,
51
52 we considered this practice among the heterosexual population; differentiating both genders
53
54 and experimentation from regular practice. Thirdly, we were also able to analyze data on the
55
56 context and motivation of the first AI.
57
58
59
60

1
2
3 However, some limitations need to be put forward. First, the response rate was lower than
4
5 expected, even though this rate is similar to other studies on sexual behavior (Döring &
6
7 Mohseni, 2018; Jorgensen, Maindal, Christensen, Olesen, & Andersen, 2015). The fact that
8
9 sexual health and behavior is a sensitive issue and that potential participants may not be at
10
11 ease answering through the web (even if it was secured) could be an explanation. Moreover,
12
13 we could only contact participants through postal mail and having to connect to the website
14
15 and introduce a code might have reduced the likelihood to answer compared to having
16
17 received the invitation electronically. Additionally, the survey was launched immediately
18
19 before the Swiss summer holidays, which might also have reduced the response rate. For
20
21 these reasons, we decided to start with a very large sample so that the final one would be large
22
23 enough for statistical purposes. Although virgins also responded to our survey, demonstrating
24
25 diversity in terms of sexual behavior, and data were weighted, we cannot assure that there was
26
27 no voluntary bias. Furthermore, as we decided to focus on exclusively heterosexuals only, an
28
29 understudied population regarding AI, and removed a significant part of our sample, we
30
31 cannot assure that our results are generalizable to heterosexual young adults in Switzerland.
32
33 Second, we asked participants with a mean age of 26.3 years to remember their adolescence
34
35 and their first sexual experiences. It is possible that we have faced some recall bias, although
36
37 asking the question at the age of 26 gives them an important temporal perspective. As
38
39 explained in the methods, we tried to minimize recall bias by using the LHC method approach
40
41 (Martyn et al., 2013; Morselli et al., 2016). Third, we lack some information regarding the
42
43 context of AI, which lead us to make some assumptions. For example, it was not specified if
44
45 the intercourse was vaginal or anal for condom use at last intercourse, intercourse while
46
47 intoxicated or intercourse accepted unwillingly. Furthermore, we do not know if the
48
49 participant practiced AI with the current partner and if participants played a receptive or
50
51 insertive role. Fourth this was a cross sectional study and no causation can be inferred.
52
53
54
55
56
57
58
59
60

1
2
3 Nevertheless, although it was cross-sectional, these retrospective data allowed us to identify
4
5 temporality, and to explore their context.
6
7

8 **Conclusion**

9
10 Anal intercourse is a widespread practice among heterosexual young adults. Health
11
12 professionals should take this fact into account in their practice and in the prevention
13
14 messages they give. The subject of STI prevention and screening should be brought up more
15
16 often and more comprehensively to individuals engaged in AI, including heterosexual
17
18 population. Discussion on AI should be systematically incorporated into sex education classes
19
20 to avoid taboos, and their higher potential of infectiveness should be underlined among the
21
22 whole population regardless of their gender or sexual orientation. We encourage professionals
23
24 to develop clear messages addressing the whole population. A positive sexuality should
25
26 always be encouraged, and this prevalent practice should no longer be stigmatized or ignored.
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Conflict of interest: The authors have no conflicts of interest to disclose.

References

- Ashenhurst, J. R., Wilhite, E. R., Harden, K. P., & Fromme, K. (2017). Number of sexual partners and relationship status are associated with unprotected sex across emerging adulthood. *Archives of Sexual Behavior, 46*(2), 419-432. doi:10.1007/s10508-016-0692-8
- Baggaley, R. F., Dimitrov, D., Owen, B. N., Pickles, M., Butler, A. R., Masse, B., & Boily, M. C. (2013). Heterosexual anal intercourse: a neglected risk factor for HIV? *American Journal of Reproductive Immunology, 69 Suppl 1*, 95-105. doi:10.1111/aji.12064
- Baggaley, R. F., White, R. G., & Boily, M. C. (2010). HIV transmission risk through anal intercourse: systematic review, meta-analysis and implications for HIV prevention. *International Journal of Epidemiology, 39*(4), 1048-1063. doi:10.1093/ije/dyq057
- Baldwin, J. I., & Baldwin, J. D. (2000). Heterosexual anal intercourse: an understudied, high-risk sexual behavior. *Archives of Sexual Behavior, 29*(4), 357-373. doi:10.1023/a:1001918504344
- Barrense-Dias, Y., Akre, C., Berchtold, A., Leeners, B., Morselli, D., & Suris Granell, J.-C. (2018). *Sexual health and behavior of young people in Switzerland (Raison de santé 291)*. Retrieved from https://serval.unil.ch/resource/serval:BIB_ADC508C2AA4F.P001/REF
- Baumann, P., Bélanger, R. E., Akre, C., & Suris, J. C. (2011). Increased risks of early sexual initiators: time makes a difference. *Sex Health, 8*(3), 431-435. doi:10.1071/sh10103
- Belec, L., Dupre, T., Prazuck, T., Tevi-Benissan, C., Kanga, J. M., Pathey, O., . . . Pillot, J. (1995). Cervicovaginal overproduction of specific IgG to human immunodeficiency virus (HIV) contrasts with normal or impaired IgA local response in HIV infection. *The Journal of Infectious Diseases, 172*(3), 691-697. doi:10.1093/infdis/172.3.691

- 1
2
3 Benson, L. S., Gilmore, K. C., Micks, E. A., McCoy, E., & Prager, S. W. (2019). Perceptions
4 of anal intercourse among heterosexual women: a pilot qualitative study. *Sexual*
5 *Medicine*, 7(2), 198-206. doi:10.1016/j.esxm.2018.12.003
6
7
8
9
10 Benson, L. S., Martins, S. L., & Whitaker, A. K. (2015). Correlates of heterosexual anal
11 intercourse among women in the 2006-2010 national survey of family growth. *The*
12 *Journal of Sexual Medicine*, 12(8), 1746-1752. doi:10.1111/jsm.12961
13
14
15
16
17 Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E., Jr., Barsky, A. J., & Weinstein,
18 M. C. (1991). Performance of a five-item mental health screening test. *Medical Care*,
19 29(2), 169-176. doi:10.1097/00005650-199102000-00008
20
21
22
23
24 Blanc Molina, A., & Rojas Tejada, A. J. (2018). Uso del preservativo, número de parejas y
25 debut sexual en jóvenes en coito vaginal, sexo oral y sexo anal [Condom use, number
26 of partners and sexual debut in young people in penile-vaginal intercourse, oral sex
27 and anal sex]. *Revista Internacional de Andrologia*, 16(1), 8-14.
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
- Boekeloo, B. O., & Howard, D. E. (2002). Oral sexual experience among young adolescents receiving general health examinations. *American Journal of Health Behavior*, 26(4), 306-314. doi:10.5993/ajhb.26.4.7
- Bozon, M. (2008). Pratiques et rencontres sexuelles : un répertoire qui s'élargit [Sexual practices and encounters: a growing repertoire]. In *Enquête sur la sexualité en France* (pp. 273-295). Paris: La Découverte.
- Brown, L. K., Hadley, W., Stewart, A., Lescano, C., Whiteley, L., Donenberg, G., & DiClemente, R. (2010). Psychiatric disorders and sexual risk among adolescents in mental health treatment. *Journal of consulting and clinical psychology*, 78(4), 590-597. doi:10.1037/a0019632

- Centers for Disease Control and Prevention. (2015). Sexually transmitted disease treatment guidelines: clinical prevention guidance. Retrieved from <https://www.cdc.gov/std/tg2015/clinical.htm>
- Coker, T. R., Austin, S. B., & Schuster, M. A. (2010). The health and health care of lesbian, gay, and bisexual adolescents. *Annual review of public health, 31*, 457-477. doi:10.1146/annurev.publhealth.012809.103636
- Döring, N., & Mohseni, M. R. (2018). Are online sexual activities and sexting good for adults' sexual well-being? Results from a national online survey. *International Journal of Sexual Health, 30*(3), 250-263. doi:10.1080/19317611.2018.1491921
- Erens, B., Phelps, A., Clifton, S., Mercer, C. H., Tanton, C., Hussey, D., . . . Johnson, A. M. (2014). Methodology of the third British national survey of sexual attitudes and lifestyles (Natsal-3). *Sexually Transmitted Infections, 90*(2), 84. doi:10.1136/sextrans-2013-051359
- Field, N., Mercer, C. H., Sonnenberg, P., Tanton, C., Clifton, S., Mitchell, K. R., . . . Johnson, A. M. (2013). Associations between health and sexual lifestyles in Britain: findings from the third national survey of sexual attitudes and lifestyles (Natsal-3). *Lancet, 382*(9907), 1830-1844. doi:10.1016/s0140-6736(13)62222-9
- Garner, A. L., Schembri, G., Cullen, T., & Lee, V. (2015). Should we screen heterosexuals for extra-genital chlamydial and gonococcal infections? *International Journal of STD & AIDS, 26*(7), 462-466. doi:10.1177/0956462414543120
- Halperin, D. T. (1999). Heterosexual anal intercourse: prevalence, cultural factors, and HIV infection and other health risks, Part I. *AIDS Patient Care and STDs, 13*(12), 717-730. doi:10.1089/apc.1999.13.717
- Heijne, J. C. M., van Liere, G. A. F. S., Hoebe, C. J. P. A., Bogaards, J. A., van Benthem, B. H. B., & Dukers-Muijrsers, N. H. T. M. (2017). What explains anorectal chlamydia

1
2
3 infection in women? Implications of a mathematical model for test and treatment
4 strategies. *Sexually Transmitted Infections*, 93(4), 270. doi:10.1136/sextrans-2016-
5
6 052786
7
8

9
10 Hess, K. L., DiNenno, E., Sionean, C., Ivy, W., & Paz-Bailey, G. (2016). Prevalence and
11
12 correlates of heterosexual anal intercourse among men and women, 20 U.S. cities.
13
14 *AIDS and behavior*, 20(12), 2966-2975. doi:10.1007/s10461-016-1295-z
15
16

17 Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A., &
18
19 Kraus, L. (2009). *The 2007 ESPAD report: substance use among students in 35*
20
21 *European countries* Retrieved from Stockholm:
22
23 [http://www.espad.org/sites/espad.org/files/The_2007_ESPAD_Report-](http://www.espad.org/sites/espad.org/files/The_2007_ESPAD_Report-FULL_091006.pdf)
24
25 [FULL_091006.pdf](http://www.espad.org/sites/espad.org/files/The_2007_ESPAD_Report-FULL_091006.pdf)
26
27

28 Houston, A. M., Fang, J., Husman, C., & Peralta, L. (2007). More than just vaginal
29
30 intercourse: anal intercourse and condom use patterns in the context of "main" and
31
32 "casual" sexual relationships among urban minority adolescent females. *Journal of*
33
34 *Pediatric and Adolescent Gynecology*, 20(5), 299-304. doi:10.1016/j.jpag.2007.01.006
35
36

37 Jorgensen, M. J., Maindal, H. T., Christensen, K. S., Olesen, F., & Andersen, B. (2015).
38
39 Sexual behaviour among young Danes aged 15-29 years: a cross-sectional study of
40
41 core indicators. *Sexually Transmitted Infections*, 91(3), 171-177. doi:10.1136/sextrans-
42
43 2014-051814
44
45

46 Jozkowski, K. N., & Satinsky, S. A. (2013). A gender discrepancy analysis of heterosexual
47
48 sexual behaviors in two university samples. *Journal of Community Health*, 38(6),
49
50 1157-1165. doi:10.1007/s10900-013-9728-3
51
52

53 Kontula, O. (2009). *Between sexual desire and reality: The evolution of sex in Finland*.
54
55 Helsinki, Finland: Väestöliitto - The Family Federation of Finland.
56
57
58
59
60

- 1
2
3 Leichter, J. S., Chandra, A., Liddon, N., Fenton, K. A., & Aral, S. O. (2007). Prevalence and
4
5 correlates of heterosexual anal and oral sex in adolescents and adults in the United
6
7 States. *The Journal of Infectious Diseases*, *196*(12), 1852-1859. doi:10.1086/522867
8
9
10 %J The Journal of Infectious Diseases
11
12 Lescano, C. M., Houck, C. D., Brown, L. K., Doherty, G., DiClemente, R. J., Fernandez, M.
13
14 I., . . . Silver, B. J. (2009). Correlates of heterosexual anal intercourse among at-risk
15
16 adolescents and young adults. *American Journal of Public Health*, *99*(6), 1131-1136.
17
18 doi:10.2105/ajph.2007.123752
19
20
21 Levy, J. A. (1988). The transmission of AIDS: the case of the infected cell. *JAMA*, *259*(20),
22
23 3037-3038.
24
25
26 Lewis, R., Tanton, C., Mercer, C. H., Mitchell, K. R., Palmer, M., Macdowall, W., &
27
28 Wellings, K. (2017). Heterosexual practices among young people in Britain: evidence
29
30 from three national surveys of sexual attitudes and lifestyles. *Journal of Adolescent*
31
32 *Health*, *61*(6), 694-702. doi:10.1016/j.jadohealth.2017.07.004
33
34
35 Martyn, K. K., Saftner, M. A., Darling-Fisher, C. S., & Schell, M. C. (2013). Sexual risk
36
37 assessment using event history calendars with male and female adolescents. *Journal of*
38
39 *Pediatric Health Care*, *27*(6), 460-469. doi:10.1016/j.pedhc.2012.05.002
40
41
42 Maynard, E., Carballo-Dieguez, A., Ventuneac, A., Exner, T., & Mayer, K. (2009). Women's
43
44 experiences with anal sex: motivations and implications for STD prevention.
45
46 *Perspectives on Sexual and Reproductive Health*, *41*(3), 142-149.
47
48 doi:10.1363/4114209
49
50
51 Meuwly, M., Barrense-Dias, Y., Auderset, D., & Suris Granell, J.-C. (2020). Contraception
52
53 use: is everything played at first intercourse? [Ahead of Print]. *International Journal*
54
55 *of Adolescent Medicine and Health*.
56
57
58
59
60

- 1
2
3 Morselli, D., Berchtold, A., Suris Granell, J.-C., & Berchtold, A. (2016). On-line life history
4 calendar and sensitive topics: A pilot study. *Computers in Human Behavior*, *58*, 141-
5 149.
6
7
8
9
10 Noar, S. M., Cole, C., & Carlyle, K. (2006). Condom use measurement in 56 studies of sexual
11 risk behavior: review and recommendations. *Archives of Sexual Behavior*, *35*(3), 327-
12 345. doi:10.1007/s10508-006-9028-4
13
14
15
16
17 Owen, B. N., Brock, P. M., Butler, A. R., Pickles, M., Brisson, M., Baggaley, R. F., & Boily,
18 M. C. (2015). Prevalence and frequency of heterosexual anal intercourse among young
19 people: A systematic review and meta-analysis. *AIDS and behavior*, *19*(7), 1338-1360.
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
- Petersen, J. L., & Hyde, J. S. (2010). A meta-analytic review of research on gender differences in sexuality, 1993–2007. *Psychological Bulletin*, *136*(1), 21-38. doi:10.1037/a0017504
- Priebe, G., & Svedin, C. G. (2013). Operationalization of three dimensions of sexual orientation in a national survey of late adolescents. *Journal of Sex Research*, *50*(8), 727-738. doi:10.1080/00224499.2012.713147
- Reynolds, G. L., Fisher, D. G., & Rogala, B. (2015). Why women engage in anal intercourse: results from a qualitative study. *Archives of Sexual Behavior*, *44*(4), 983-995. doi:10.1007/s10508-014-0367-2
- Stahlman, S., Hirz, A. E., Stirland, A., Guerry, S., Gorbach, P. M., & Javanbakht, M. (2015). Contextual factors surrounding anal intercourse in women: Implications for sexually transmitted infection/HIV prevention. *Sexually Transmitted Diseases*, *42*(7), 364-368. doi:10.1097/olq.0000000000000303
- Tian, L. H., Peterman, T. A., Tao, G., Brooks, L. C., Metcalf, C., Malotte, C. K., . . . Douglas, J. M., Jr. (2008). Heterosexual anal sex activity in the year after an STD clinic visit.

1
2
3 *Sexually Transmitted Diseases*, 35(11), 905-909.

4
5 doi:10.1097/OLQ.0b013e318181294b

6
7
8 Vester Thorsen, S., Rugulies, R., Hjarsbech, P., & Bjorner, J. (2013). The predictive value of
9
10 mental health for long-term sickness absence: The Major Depression Inventory (MDI)
11
12 and the Mental Health Inventory (MHI-5) compared. *BMC medical research*
13
14 *methodology*, 13, 115. doi:10.1186/1471-2288-13-115

15
16
17 Villar-Loubet, O., Weiss, S. M., Marks, G., O'Daniels, C., Jones, D., Metsch, L. R., &
18
19 McLellan-Lemal, E. (2016). Social and psychological correlates of unprotected anal
20
21 intercourse among Hispanic-American women: implications for STI/HIV prevention.
22
23 *Culture, Health & Sexuality*, 18(11), 1221-1237.
24
25
26 doi:10.1080/13691058.2016.1182217
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Table 1: Bivariate analysis of sociodemographic and personal characteristics according to experience of anal intercourse among women

Variables	Total N=1860	Never N=1026 55.2%	Once N=318 17.1%	Multi N=516 27.7%	P- value
Mean age at time of study (\pm SD)	26.32 (0.19)	26.30 (0.03)	26.38 (0.05)	26.35 (0.03)	0.24
Foreign-born (yes)	11.4	10.2	15.0	11.7	0.04
Family SES (low)	15.0	14.2	19.4	13.9	0.03
Family structure (other)	32.4	26.3	43.0	38.1	<0.01
Attained level of education (below tertiary)	42.2	40.3	45.0	44.3	0.14
Perception general health (poor)	4.9	5.0	4.2	4.9	0.83
Mental health (poor)	16.1	15.5	16.4	17.1	0.68
Mean age at first sexual experience (\pmSD)	17.22 (\pm 0.31)	17.96 (\pm 0.09)	16.18 (\pm 0.12)	16.46 (\pm 0.10)	<0.01
Condom use at first intercourse (yes)	85.1	84.2	87.5	85.5	0.29
Condom use at last intercourse (yes)	51.2	56.7	42.5	45.8	<0.01

Currently in a relationship with a steady partner (yes)	76.1	75.8	73.6	78.1	0.28
Number of lifetime sexual partner(s)					
1-3	43.9	54.1	30.5	31.7	<0.01
4-7	26.7	25.7	31.8	25.5	
8 and more	29.5	20.2	37.7	42.8	
History of STI (yes)	12.5	9.0	14.2	18.4	<0.01
Ever had intercourse while intoxicated (yes)	42.8	33.9	52.8	54.4	<0.01
Ever endured sexual assault/abuse (yes)	13.1	11.1	14.3	16.1	0.01
Ever received something in exchange of sex (yes)	1.7	1.0	2.0	3.0	0.01
Ever accepted an intercourse unwillingly					
No	47.0	52.6	40.4	39.8	<0.01
Yes, once	21.8	19.7	24.9	24.2	
Yes, several times	31.2	27.8	34.7	36.1	

Table 2: Multivariate analysis of sociodemographic and personal characteristics by experience of anal intercourse among women

Variables	Once RRR (CI)	Multi RRR (CI)
Mean age at time of study	1.13 (0.97-1.32)	1.07 (0.94-1.21)
Family structure (other)	1.66** (1.27-2.18)	1.33* (1.05-1.67)
Mean age at first sexual experience	0.81** (0.75-0.87)	0.87** (0.82-0.92)
Number of lifetime sexual partner(s)		
1-3	1 (Ref)	1 (Ref)
4-7	0.63 (0.08-5.03)	0.47 (0.06-3.66)
8 and more	0.78 (0.07-8.61)	2.45 (0.31-19.63)
Age at first sexual experience * number of sexual life partner interaction		
1-3	1 (Ref)	1 (Ref)
4-7	1.04 (0.92-1.17)	1.05 (0.93-1.18)
8 and more	1.04 (0.90-1.20)	0.98 (0.86-1.11)
Condom use at last intercourse (yes)	0.62** (0.48-0.80)	0.72** (0.58-0.89)
History of STI (yes)	1.14 (0.79-1.66)	1.52** (1.11-2.07)
Ever had intercourse while	1.28 (0.97-1.68)	1.42** (1.11-1.81)

intoxicated (yes)		
Ever accepted intercourse unwillingly		
No	1 (Ref)	1 (Ref)
Yes, once	1.27 (0.91-1.75)	1.28 (0.96-1.69)
Yes, several times	1.26 (0.93-1.69)	1.36* (1.06-1.75)

*P-value<0.05 **P-value<0.01

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Table 3: Bivariate analysis of sociodemographic and personal characteristics according to experience of anal intercourse among men

Variables	Total N=2033	Never N=1135 55.8%	Once N=239 11.8%	Multi N=659 32.4%	P
Mean age at study (±SD)	26.36 (0.02)	26.34 (0.03)	26.39 (0.06)	26.39 (0.04)	0.24
Foreign-born (yes)	10.3	9.6	9.9	11.8	0.40
Family SES (low)	13.3	11.9	9.9	16.9	<0.01
Family structure (other)	33.1	29.4	39.6	37.2	<0.01
Attained level of education (below tertiary)	53.3	50.0	61.0	56.3	<0.01
Perception general health (poor)	4.6	4.1	4.6	5.3	0.60
Mental health (poor)	11.0	9.7	8.8	13.9	0.03
Mean age at first sexual experience (± SD)	17.51(0.08)	18.24 (0.11)	16.85 (0.2)	16.52 (0.13)	<0.01
Condom use at first intercourse (yes)	85.6	84.5	86.0	87.5	0.30
Condom use at last	58.7	63.7	55.0	51.6	<0.01

intercourse (yes)					
Currently in a relationship with a steady partner (yes)	68.3	67.0	70.3	69.7	0.47
Number of lifetime sexual partner(s)					
1-3	38.7	51.3	25.3	21.8	<0.01
4-7	28.4	29.1	34.5	24.9	
8 and more	33.0	16.6	40.4	53.4	
History of STI (yes)	4.9	2.8	6.4	8.1	<0.01
Ever had intercourse while intoxicated (yes)	55.8	47.3	70.5	65.2	<0.01
Ever endured sexual assault/abuse (yes)	2.0	1.5	4.0	2.3	0.06
Ever received something in exchange of sex (yes)	2.3	1.3	2.0	4.12	<0.01
Ever accepted intercourse unwillingly					
No	78.7	84.7	74.2	70.1	<0.01
Yes, once	11.5	9.5	15.0	13.7	
Yes, several times	9.8	5.8	10.9	16.2	

Table 4: Multivariate analysis of sociodemographic and personal characteristics by experience of anal intercourse among men

Variables	Once RRR (CI)	Multi RRR (CI)
Mean age at time of study	1.01 (0.82-1.24)	1.01 (0.87-1.18)
Family SES (low)	0.66 (0.38-1.15)	1.16 (0.81-1.66)
Family structure (other)	1.52* (1.06-2.16)	1.08 (0.83-1.42)
Attained level of education (below tertiary)	1.48* (1.04-2.11)	1.14 (0.88-1.47)
Mean age at first sexual experience	0.87** (0.79-0.96)	0.89** (0.83-0.96)
Number of lifetime sexual partner(s)		
1-3	1 (Ref)	1 (Ref)
4-7	0.84 (0.04-15.76)	2.33 (0.25-21.70)
8 and more	0.16 (0.01-2.23)	1.40 (0.18-10.67)
Age at first sexual experience * number of sexual life partner interaction		
1-3	1 (Ref)	1 (Ref)
4-7	1.04 (0.88-1.22)	0.97 (0.85-1.10)
8 and more	1.17* (1.00-1.36)	1.06 (0.94-1.18)
Condom use at last	0.76 (0.54-1.08)	0.70** (0.55-0.91)

intercourse (yes)		
History of STI (yes)	1.73 (0.81-3.71)	2.16** (1.25-3.72)
Ever had intercourse while intoxicated (yes)	1.62* (1.09-2.41)	1.14 (0.86-1.50)
Ever received something in exchange of sex (yes)	0.98 (0.27-3.52)	0.99 (0.42-2.33)
Ever accepted intercourse unwillingly		
No	1 (Ref)	1 (Ref)
Yes, once	1.42 (0.87-2.32)	1.20 (0.81-1.77)
Yes, several times	1.63 (0.91-2.92)	2.37** (1.59-3.52)

*P-value<0.05**P-value<0.01

Table 5: Reasons reported by participants for engaging in their first anal intercourse

Reason for engaging in Anal Intercourse for the first time among women	Total (%) Once + Multi N = 833	Once (%) N=317	Multi (%) N=516
I was curious, I was eager to try	62.3	56.6	65.9
I was in love	15.1	10.1	18.1
I did it but I had no desire to	11.3	18.6	6.8
I was on drugs/alcohol	3.8	6.1	2.4
I was forced	2.0	2.5	1.8
I wanted to do like others	0.4	0.3	0.4
I had made a bet with friends	0.0	0.0	0.1
I do not remember	2.8	3.4	2.5
Other	2.2	2.5	2.0
Main reason for engaging in Anal Intercourse for the first time among men	Total (%) Once + Multi N = 833	Once (%) N=238	Multi (%) N=659
I was curious, I was eager to try	88.0	89.0	87.7
I was in love	6.2	3.5	7.2
I did it but I had no desire to	0.1	0.5	0.0
I was on drugs/alcohol	1.6	3.2	1.0
I was forced	0.0	0.0	0.0
I wanted to do like others	0.0	0.0	0.0
I had made a bet with friends	0.2	0.0	0.2
I do not remember	1.6	2.1	1.4

Other	2.3	1.7	2.6
-------	-----	-----	-----

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60