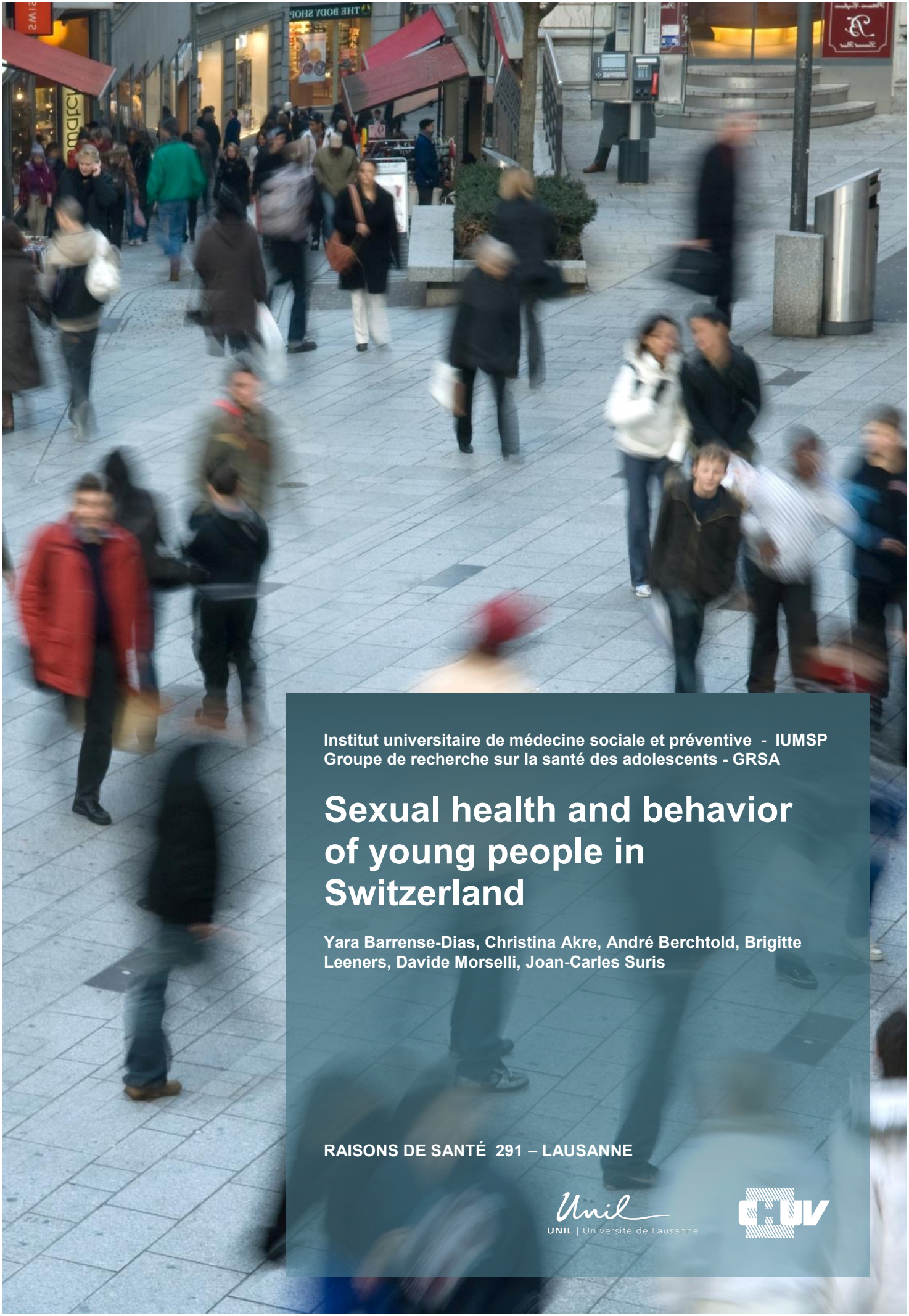

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Sexual health and behavior of young people in Switzerland

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L'ensemble des participants qui ont accepté de répondre à notre enquête.

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Summary

1 Summary

1.1 Introduction

Improving sexual and reproductive health is a public health priority, and the timing of first sexual intercourse and the context in which it occurs both have health implications. Moreover, information and monitoring about sexual behavior is essential to the design and assessment of interventions to improve sexual health.

The last survey centered on the sexual and reproductive health of adolescents/young adults in Switzerland was carried out in 1995. Since then, all data on the subject come from general surveys. As contextual factors, the life contexts of youths explain a large amount of the variance in sex-related behaviors, and a fair amount of new developments have appeared in the last twenty years that might have had an impact on youth's sexual behavior: AIDS has gone from a fatal to a chronic condition, there has been a liberalization of the access to emergency contraception, Swiss law changed in 2002 and allowed abortion in the first 12 weeks of pregnancy, the HPV vaccine is recommended as part of the vaccination program (for girls since 2008 and for boys since 2016), sildenafil citrate (e.g. Viagra®) has appeared on the market as a treatment for erectile dysfunction, pornography has become extremely accessible and free, phenomena of online sex and sexting have emerged. These changes might have an impact on adolescent sexual behaviors although we do not know how and to what extent.

This survey provides self-reported information from young adults in Switzerland. The primary objective was to obtain current epidemiological data on young people's sexual and reproductive health and behaviors.

1.2 Methods

The survey comprised three parts: two of them contained questions on socio-demographic characteristics of the participants (part 1) and on their sexual and health behavior (part 3), and one part was a life history calendar (LHC, part 2). In the LHC, participants were asked to identify the period of occurrence of different life events. The aim of the LHC was to facilitate recollection and dating of personal events by referencing each of them to other key events or milestones of their life (e.g. moving to a new residence or obtaining one's drive licence).

The initial sample was provided by the Swiss Federal Office of Statistics, and it was representative of the entire population living in Switzerland in terms of sex, language, and canton of residence. This sample included 49'798 individuals aged between 24 and 26 years old on 30 September 2016 (birthdate between 01 October 1989 and 30 September 1992).

Starting on the 8th June 2017, a first invitation letter was sent to 10'000 individuals. To ensure the operation of the server and allow adjustments in case of problems, the remaining letters (39'798)

were sent in two different waves (9 June and 30 June). Depending on the canton of residence, the letter was sent either in French and German, or in Italian and German.

The initial goal was to obtain 10'000 answers, but it rapidly appeared that respondents were more reluctant than anticipated to participate in the survey. Moreover 2'402 (4.8%) letters were returned by the postal service, 12 (0.02%) e-mails were sent by parents or caregivers to inform that the person was disabled, had gone abroad or did not speak one of the three languages and 16 (0.03%) letters were returned by participants themselves to say that they did not want to participate.

In September 2017, it was decided to send a reminder to 10'000 people randomly chosen among the ones having not answered yet and not being part of the returned letters. Data collection ended on 26 November 2017.

The final sample included 7'142 people aged between 24 and 26 years and living in Switzerland at the time of the addresses delivery (30 September 2016). This corresponds to a response rate of 15.1%. Among them 5'618 individuals completed the entire questionnaire or a significant part of it (11.9%, or 78.7% of all respondents).

After computing the distribution of the main socio-demographic variables available in the survey and for which the true population-level distribution was known, we had to correct the sample distribution using weights for two characteristics: sex and canton of residence because females from the French part of Switzerland were overrepresented in the participants. Weights were computed for those who abandoned during the third part of the questionnaire and those who completed it until the end (even if they omitted some questions).

1.3 Results

Overall 94% of females and 89% of males had ever been in a steady relationship. Around three out of every four participants were currently in one such relationship.

The great majority (95%) of respondents had ever had sexual partners, most of them between 2 and 7. About 5% had never had a sexual partner. Most (94%) had also had had sexual partners in the past 12 months, but in this case it was mainly only one. Over 70% of males and females had ever had casual sexual partners, but the percentage decreased to around only one quarter in the last 30 days.

The majority of respondents (86%) had only had heterosexual contacts, however 15% of females and 13% of males had either homosexual or bisexual experiences. The mean age at first sexual contact was just under 17 years.

Almost all respondents (96%) had ever had oral sex, most of them with an opposite-sex partner. The vast majority (95%) had had vaginal sex and half of respondents had it at least weekly. The same percentage of females and males (49%) reported ever having had anal intercourse.

Participants reporting having had sex with multiple partners at the same time, using medication to enhance sexual performance, or being blackmailed were a small minority. Those having ever had

intercourse with someone met on the Internet accounted for 22% of females and 35% of males. More than half of males (56%) and 46% of females had ever had intercourse while intoxicated.

Eleven percent of females had ever been pregnant and 8% of males declared ever having had a partner pregnant. Among females, the pregnancy was mainly continued (57.6%) and in almost 30% of the cases interrupted. Among males, pregnancy was continued in 49% of cases and interrupted in 42% of them.

An important percentage (45%) of youths had ever had HIV testing, with females slightly outnumbering males. Almost all reported a negative result. Close to one youth in 10 reported ever having had a diagnosed sexually transmitted infection. Chlamydia was the most commonly reported among females and males.

The vast majority (93%) of respondents had used some kind of contraception / protection at their first intercourse, mainly male condoms. However, at last intercourse contraception / protection methods were more equally distributed between male condom and contraceptive pill. All other contraception methods represented less than 5%, with the exception of intrauterine device (IUD) and vaginal ring.

Around 90% of both males and females reported being only or strongly attracted to people of the opposite sex, and males (4.6%) outnumbered females (1.8%) in reporting same sex attraction. It is worth noting that 0.6% of females and 0.4% of males declared not feeling attracted to anyone. The vast majority of participants (92%) described themselves as heterosexuals, around 6% homosexuals or bisexuals, slightly under 2% did not know and 0.6% indicated the option *other*.

About one female in nine reported a sexual dysfunction. Among males, 17.5% indicated premature ejaculation and the same percentage erectile dysfunction, although only 0.6% declared it to be moderate or severe.

There was an important difference in lifetime unwanted sexual experiences and in having ever been victim of sexual assault or abuse between females and males, with females largely outnumbering males.

Two females out of every 5 (40%) and 8% of males had received the HPV vaccine. However, it is worth noting that half of males and over one-fifth of females did not know whether they had been vaccinated.

Almost half of females had ever used emergency contraception and close to two-fifths of males reported their partner having ever used it. Respondents indicating that they (or their partner) used emergency contraception as their main contraception method were very few.

Males outnumbered females in online sexual activity.

Almost 3 out of 4 reported having already sent a sexy text-only message without photo, a sexy photo and / or a video of themselves. On the other end, almost 80% of participants had already received such messages. There were no gender differences for these two actions. However, 22% reported having already forwarded such messages to other persons without consent. In this case, males were overrepresented.

Males were slightly more likely than females to have received something or obtained an advantage in exchange of sexual intercourse, but it remained a small minority. On the contrary, males clearly outnumbered females in ever giving something or offering an advantage in exchange of sexual intercourse.

1.4 Conclusions

Overall, youth in Switzerland report a healthy sexuality.

However, young people being active on online sex need to be further analyzed regarding both the frequency of this practice and the potential risk they incur in.

Unfortunately, women continue to be overrepresented in the cases of unwanted sexual experiences and sexual abuse.

Contrary to popular belief, sexual dysfunctions are relatively common among young people.

There is a sizeable percentage of youth who have exchanged sexual favors for money, goods or services, who have had sexual relationships while intoxicated or group sex.

Reliable contraceptive / protective use is the norm in this age group and it varies from first to last intercourse. Male condom and hormonal contraception are the most used by far. Emergency contraception is a clear option in cases when the main contraceptive method failed. However, even if the condom use rate is quite high, even at last intercourse, the reported STI rate of 10% is relatively high compared to other studies and needs further analysis.

2

Résumé

2 Résumé

2.1 Introduction

L'amélioration de la santé sexuelle et reproductive fait partie des priorités de santé publique. Le moment du premier contact ou rapport sexuel et le contexte dans lequel il se déroule ont, tous deux, des répercussions sur la santé. De plus, la connaissance et le monitorage des comportements sexuels sont essentiels à l'établissement et à l'évaluation des interventions visant à améliorer la santé sexuelle.

La dernière enquête centrée sur la santé sexuelle et reproductive des adolescents et jeunes adultes en Suisse a été conduite en 1995. Depuis, les données sur ce sujet viennent d'enquêtes plus globales sur la santé. Les contextes de vie des jeunes expliquent une grande partie de la variabilité des comportements en lien avec leur sexualité et de nombreux développement sont apparus ces vingt dernières années, impactant, vraisemblablement, leurs comportements sexuels : le VIH est passé d'une maladie mortelle à une maladie chronique, l'accès à la contraception d'urgence a été libéralisé, la loi suisse a été modifiée en 2002 pour autoriser l'interruption de grossesse dans les 12 premières semaines de grossesse, le vaccin contre le HPV est aujourd'hui recommandé et offert dans le cadre du programme de vaccination (depuis 2008 pour les filles et depuis 2016 pour les garçons), le citrate de sildénafil (ex : Viagra®) est apparu sur le marché comme traitement des troubles érectiles, l'accès à la pornographie a été facilité, plusieurs activités sexuelles online, dont l'échange électronique de contenu intime, ont émergées. Ces changements pourraient avoir eu un impact sur les comportements sexuels des jeunes bien que nous ne sachions ni comment ni dans quelle mesure.

Cette enquête nationale fournit des informations auto-rapportées de jeunes adultes en Suisse. L'objectif principal de cette recherche était d'obtenir des données épidémiologiques actuelles sur la santé et les comportements sexuels et reproductifs des jeunes en Suisse.

2.2 Méthodes

Le questionnaire comprenait trois parties: deux d'entre elles contenaient des questions sur les caractéristiques sociodémographiques des participants (partie 1) et sur leur comportement sexuel et de santé (partie 3). La partie intermédiaire était un calendrier de vie (Life History Calendar, LHC, partie 2) dans lequel les participants étaient amenés à identifier et placer temporellement des évènements de leur vie. L'objectif de ce calendrier était d'aider les individus à se souvenir et à dater des évènements personnels en se référant à d'autres évènements clés (ou jalons) de leur vie tels que le fait de déménager ou de passer son permis de conduire.

L'échantillon initial a été fourni par l'Office Fédéral de la Statistique (OFS) et il était représentatif de la population vivant en Suisse en termes de sexe, langue et canton de résidence. L'échantillon

était composé de 49'798 individus âgés entre 24 et 26 ans au 30 septembre 2016 (date de naissance entre le 1er octobre 1989 et le 30 septembre 1992).

Le 8 juin 2017, une première lettre d'invitation a été envoyée à 10'000 individus. Pour s'assurer du bon fonctionnement du serveur et permettre, le cas échéant, de faire des ajustements, les autres lettres (39'798) ont été envoyée à deux dates différentes (9 juin et 30 juin). Selon le canton de résidence, la lettre était envoyée en Français et en Allemand ou en Italien et en Allemand.

Nous avions fixé comme objectif initial un minimum de 10'000 réponses, mais il est rapidement apparu que les répondants étaient plus réticents à participer que prévu. De plus, 2'402 (4.8%) des lettres ont été renvoyées par le service de Poste, et 12 (0.02%) e-mails ont été envoyés par les parents ou responsables pour nous informer que la personne invitée à participer était handicapée, partie à l'étranger ou ne parlait pas une des trois langues nationales. Finalement, 16 (0.03%) participants nous ont renvoyé la lettre eux-mêmes afin de nous informer de leur volonté de ne pas participer.

En septembre 2017, il a été décidé d'envoyer un rappel à 10'000 personnes, aléatoirement choisies parmi celles qui n'avaient pas encore répondu et qui ne faisaient pas partie des lettres renvoyées. La collecte des données s'est terminée le 26 novembre 2017.

L'échantillon final comprend 7142 personnes âgées entre 24 et 26 ans et vivant en Suisse au moment de la livraison des adresses par l'OFS (30 septembre 2016). Cela correspond à un taux de réponse de 15.1%. Parmi cet échantillon, 5618 personnes ont complété le questionnaire jusqu'à la fin ou du moins une part significative du questionnaire (11.9%, ou 78.7% de tous les répondants).

Après avoir analysé la distribution des principales variables sociodémographiques disponibles dans l'enquête et pour lesquelles la véritable distribution à l'échelle de la population était connue, nous avons dû corriger la distribution de l'échantillon en utilisant des pondérations pour deux caractéristiques : le sexe et le canton de résidence, parce que les femmes de la partie française de la Suisse étaient surreprésentées parmi les participants. Les poids ont été calculés pour ceux qui ont abandonné au cours de la troisième partie du questionnaire et ceux qui l'ont achevé jusqu'à la fin (même s'ils ont omis certaines questions). Pour ce rapport, nous présentons les différentes questions de manière individuelle, ainsi, nous avons utilisé les répondants effectifs par question peu importe s'ils avaient terminé ou non le questionnaire.

2.3 Résultats

Globalement, 94% des femmes et 89% des hommes ont déjà été dans une relation stable. Environ 3 participants sur 4 étaient dans une telle relation au moment de l'enquête.

Une large majorité (95%) des répondants ont déjà eu un-e partenaire sexuel-e au cours de leur vie, la plupart d'entre eux situant le nombre total entre 2 et 7. Environ 5% n'ont jamais eu de partenaire sexuel-le. Une large majorité (94%) a également rapporté avoir eu un-e partenaire sexuel-le au cours des 12 derniers mois, mais dans ce cas-là, c'était principalement un-e seul-e partenaire. Plus de 70% des hommes et des femmes ont déjà eu un-e ou des partenaires sexuel-le-s occasionnel-le-s, mais le pourcentage se réduisait à environ un quart au cours des 30 derniers jours.

Une majorité des répondants (86%) n'ont expérimenté que des contacts hétérosexuels, cependant 15% des femmes et 13% des hommes ont rapporté des expériences sexuelles homosexuelles ou bisexuelles. L'âge moyen pour le premier contact sexuel se situait juste en-dessous de 17 ans.

Presque tous les répondants (96%) ont déjà expérimenté le sexe oral, la plupart d'entre eux avec des personnes du sexe opposé. Une large majorité (95%) a déjà expérimenté la pénétration vaginale et la moitié des répondants en ont rapporté une pratique hebdomadaire. Le même pourcentage de femmes et d'hommes (49%) ont rapporté avoir déjà expérimenté la pénétration anale.

Les participants rapportant avoir déjà expérimenté le sexe en groupe, utilisé des médicaments pour améliorer les performances sexuelles ou été menacé pour obtenir une relation sexuelle étaient minoritaires. Avoir déjà eu un rapport sexuel avec une personne rencontrée sur Internet concernait 22% des femmes et 35% des hommes. Plus de la moitié des hommes (56%) et 46% des femmes ont déjà eu un rapport sexuel alors qu'ils étaient alcoolisés.

Onze pourcents des femmes ont déjà été enceintes et 8% des hommes ont déclaré avoir déjà eu une partenaire enceinte à la suite d'une relation sexuelle avec eux. Parmi les femmes, les grossesses ont été majoritairement poursuivies (57.6%) et dans presque 30% des cas, elles ont été interrompues. Parmi les hommes, les grossesses ont été poursuivies dans 49% des cas et interrompues dans 42%.

Un pourcentage important (45%) des jeunes ont déjà fait un test de dépistage du VIH, les femmes étant légèrement plus nombreuses que les hommes. La plupart des répondants ont rapporté un résultat négatif. Près d'un jeune sur 10 a rapporté avoir déjà été diagnostiqué pour une infection sexuellement transmissible. C'est l'infection à la chlamydia qui a la plus souvent été rapportée parmi les femmes et les hommes.

Une large majorité (93%) des répondants ont utilisé un moyen de contraception / protection au cours de leur premier rapport sexuel, principalement le préservatif masculin. Cependant, pour la dernière relation sexuelle, les méthodes de contraception / protection étaient divisées de manière plus égale entre le préservatif masculin et la pilule contraceptive. Toutes les autres méthodes de contraception/protection, à l'exception du dispositif intra-utérin (DIU) et de l'anneau vaginal, représentaient moins de 5% des réponses.

Environ 90% des hommes et des femmes ont rapporté être uniquement ou fortement attirés par des personnes du sexe opposé, les hommes (4.6%) étaient plus représentés que les femmes (1.8%) dans le cas d'une attraction pour une personne du même sexe. Il est intéressant de noter que 0.6% des femmes et 0.4% des hommes ont déclaré ne pas se sentir attirés par qui que ce soit. La grande majorité des participants (92%) se sont décrits comme hétérosexuels et environ 6% homosexuels ou bisexuels, un peu de moins de 2% ne savaient pas et 0.6% ont choisi la réponse *autre*.

Environ une femme sur neuf a rapporté un dysfonctionnement sexuel. Parmi les hommes, 17.5% ont rapporté une éjaculation précoce et le même pourcentage un trouble de l'érection, mais seulement 0.6% ont rapporté un trouble modéré à sévère.

Il y avait une importante différence en termes d'expériences sexuelles non désirées et d'abus sexuels entre les femmes et les hommes, les femmes étant largement plus nombreuses que les hommes.

Deux femmes sur 5 (40%) et 8% des hommes ont été vaccinés contre le HPV. Cependant, la moitié des hommes et plus d'un cinquième des femmes ont répondu ne pas savoir s'ils avaient reçu ce vaccin.

Presque la moitié des femmes ont déjà utilisé une contraception d'urgence et près de deux hommes sur cinq (38%) ont rapporté qu'au moins l'une de leurs partenaires en avait déjà utilisé. Les répondants qui ont indiqué qu'elle (ou leur partenaire) l'avait utilisé comme moyen de contraception principal étaient minoritaires.

Les hommes sont plus nombreux que les femmes à rapporter des activités sexuelles en ligne.

Environ 3 répondants sur 4 ont déjà envoyé un message texte, une photo et/ou une vidéo sexy d'eux-mêmes. De plus, presque 80% des participants ont déjà reçu de tels messages. Il n'y avait pas de différence de genre pour ces deux actions. Cependant, 22% ont rapporté avoir déjà transféré ou montré un tel message à d'autres personnes sans consentement. Dans ce cas, les hommes étaient surreprésentés.

Les hommes étaient légèrement plus susceptibles d'avoir déjà reçu quelque chose ou obtenu un avantage en échange d'un rapport sexuel, mais cela restait minoritaire. Au contraire, les hommes étaient nettement plus nombreux que les femmes à avoir déjà donné quelque chose ou offert un avantage un échange d'un rapport sexuel.

2.4 Conclusions

Globalement, la plupart des jeunes en Suisse ont une santé sexuelle saine.

Cependant, des analyses approfondies devront être menées sur les activités sexuelles en ligne en termes de fréquence des pratiques et du risque potentiel encouru.

Malheureusement, les femmes continuent d'être surreprésentées dans les cas d'expériences sexuelles non désirées et d'abus sexuels.

Contrairement à la croyance populaire, les dysfonctions sexuelles sont relativement communes chez les jeunes.

Il y a un pourcentage non négligeable de jeunes qui échangent des faveurs sexuelles contre quelque chose (argent, nourriture, cadeau, avantage, etc.), qui ont déjà expérimenté un rapport sexuel alors qu'ils étaient alcoolisés ou un rapport sexuel en groupe.

L'utilisation des moyens de contraception / protection est la norme dans ce groupe d'âge et varie entre le premier et le dernier rapport sexuel. Le préservatif masculin et la contraception hormonale sont de loin les méthodes les plus utilisées. La contraception d'urgence est une option claire pour les cas dans lesquels la méthode principale a échoué. Cependant, même si le taux d'utilisation du préservatif est assez élevé, même lors du dernier rapport sexuel, le taux d'IST rapporté est relativement élevé par rapport à d'autres études et nécessite une analyse plus approfondie.

3

Zusammenfassung

3 Zusammenfassung

3.1 Einführung

Eine Verbesserung der sexuellen und reproduktiven Gesundheit ist eine zentrale Aufgabe des Gesundheitswesens. Sowohl der Zeitpunkt des ersten Geschlechtsverkehrs wie auch die Rahmenbedingungen, in denen dieser stattfindet, haben Auswirkungen auf die Gesundheit. Ausserdem sind Informationen und Beobachtungen des Sexualverhaltens wichtig, um Interventionen zur Verbesserung der sexuellen Gesundheit zu entwickeln und zu überprüfen.

Die letzte Studie, welche sich schwerpunktmässig mit der sexuellen und reproduktiven Gesundheit von Jugendlichen/jungen Erwachsenen in der Schweiz befasst hat, wurde 1995 durchgeführt. Alle Daten zum Thema stammen seit dieser Studie aus allgemeineren Erhebungen. Rahmenbedingungen, d.h. die Lebenszusammenhänge von Jugendlichen bestimmten einen grossen Teil der Varianz sexueller Verhaltensweisen und in den letzten 20 Jahren haben sich verschiedene Aspekte dieser Rahmenbedingungen, welche einen Einfluss auf das Sexualverhalten Jugendlicher haben, verändert: AIDS hat sich von einer fatalen zu einer chronischen Erkrankung gewandelt, der Zugang zur Notfallantikonzeption wurde deutlich erleichtert, das Schweizer Gesetz erlaubt seit 2002 einen Schwangerschaftsabbruch während der ersten 12 Schwangerschaftswochen, die HPV Impfung wird heute als fester Bestandsteil des Impfprogramms empfohlen (für Mädchen seit 2008 und für Jungen seit 2016), Sildenafil (z.B. Viagra) ist als Behandlung einer erektilen Dysfunktion auf dem Markt, Pornographie ist heute extrem leicht und kostenlos zugänglich, und neue Phänomene wie «online sex» und «sexting» haben sich entwickelt. Diese Veränderungen haben wahrscheinlich Auswirkungen auf die Sexualität im Jugendalter, jedoch ist die Art und das Ausmass dieser Veränderungen derzeit nur in Ansätzen bekannt.

Diese Studie zeigt selbstberichtete Informationen junger Erwachsener in der Schweiz. Das Hauptziel der Studie war epidemiologische Daten zur sexuellen und reproduktiven Gesundheit und zum reproduktiven Verhalten junger Menschen zu erhalten.

3.2 Methoden

Die Studie umfasste drei Teile: Teil 1 beinhaltet Fragen zu sozio-demographischen Charakteristika der StudienteilnehmerInnen und Teil 3 zu ihrem Sexual- und Gesundheitsverhalten. Teil 2 ist ein «Life history calender» (LHC). In dem LHC wurden die StudienteilnehmerInnen gebeten, den Zeitpunkt wichtiger Lebensereignisse zu benennen. Ziel des LHC war, den TeilnehmerInnen das Erinnern und Terminieren persönlicher Ereignisse zu erleichtern, indem die Ereignisse in Bezug zu anderen Schlüsselerlebnissen oder Meilensteinen gesetzt werden (z.B. Umzug, Führerschein).

Die initiale Stichprobe wurde vom Bundesamt für Statistik zur Verfügung gestellt und war in Bezug auf die Geschlechterverteilung, Sprache, und den Wohnkanton repräsentativ für die Gesamtpopulation der Schweiz. Diese Stichprobe umfasste 49'798 Individuen zwischen 24 und 26

Jahren am 30. September 2016 (Geburtstag zwischen dem 1. Oktober 1989 und dem 30. September 1992).

Am 8. Juni 2017 wurde ein erster Einladungsbrief an 10'000 Individuen gesendet. Um eine adäquate Funktion des Servers sicherzustellen und Anpassungen im Fall von Schwierigkeiten zu ermöglichen, wurden die verbleibenden Briefe (39'798) in zwei Teilfraktionen am 8. und am 30. Juni versendet. Je nach Kanton wurde der Brief entweder in französisch und deutsch oder in französisch und italienisch gesendet.

Das initiale Ziel war 10'000 Antworten zu erhalten, aber es wurde schnell deutlich, dass die angeschriebenen Teilnehmer zurückhaltender als erwartet hinsichtlich einer Studienteilnahme waren. Ausserdem wurden 2'402 (4.8%) der Briefe von der Post zurückgesendet, 12 (0.02%) der Briefe wurden von Eltern oder Betreuern mit der Information, dass die Person durch eine Behinderung den Fragebogen nicht ausfüllen kann, im Ausland lebt oder keine der drei Sprachen spricht, zurückgesendet und 16 (0.03%) wurden von den jungen Erwachsenen direkt mit der Information, dass sie nicht an der Studie teilnehmen möchten, zurückgeschickt.

Im September 2017 wurde entschieden, eine Erinnerung an 10'000 zufällig ausgewählte angeschriebene Teilnehmer, die zu diesem Zeitpunkt noch nicht geantwortet hatten, geschickt. Die Datenerhebung wurde am 26. November 2017 beendet.

Die endgültige Stichprobe umfasste 7’142 junge Erwachsene zwischen 24 und 26 Jahren, wohnhaft in der Schweiz zum Zeitpunkt der Entgegennahme der Adressenliste für die repräsentative Stichprobe (30. September 2016). Dies entspricht einer Antwortrate von 15.1%. Von diesen haben 5’652 den gesamten Fragebogenbzw. Den grössten Teil des Fragebogens ausgefüllt (11.9%, oder 79.1% aller Antwortenden).

Nach Ermittlung der Verteilung der wichtigsten in der Studie erhobenen sozio-demographischen Variablen, für welche die tatsächliche Ausprägung in der Bevölkerung bekannt war, mussten wir die Verteilung innerhalb der Stichprobe für die Faktoren Geschlecht und Kanton gewichten, da junge Frauen aus dem französischen Teil der Schweiz überrepräsentiert waren. Für die StudienteilnehmerInnen welche den dritten Teil des Fragebogens nur teilweise ausgefüllt haben wurde eine andere Gewichtung wie für ProbandInnen, welche den kompletten Fragebogen ausgefüllt haben (auch wenn einige Fragen fehlten), vorgenommen.

3.3 Ergebnisse

Insgesamt hatten 94% der Frauen und 89% der Männer jemals eine feste Beziehung. Ungefähr drei von vier StudienteilnehmerInnen waren zum Zeitpunkt der Studie in einer solchen Beziehung.

Der grösste Anteil (95%) der Antwortenden hatte bereits SexualpartnerInnen, meistens insgesamt zwischen 2 und 7. Ungefähr 5% hatten bisher keine/n SexualpartnerIn. Die Meisten (94%) hatten während der vorangehenden 12 Monate eine/n PartnerIn, meist eine/n einzige/n PartnerIn. Über 70% der Männer und Frauen hatten bereits Gelegenheitspartner, dieser Prozentanteil betrug ungefähr 25% innerhalb der letzten 30 Tage.

Der überwiegende Anteil (86%) der Antwortenden hatte nur heterosexuelle Kontakte, 15% der Frauen und 13% der Männer berichteten über homosexuelle oder bisexuelle Kontakte. Das durchschnittliche Alter beim ersten sexuellen Kontakt war knapp 17 Jahre.

Fast alle StudienteilnehmerInnen (96%) hatten bereits Oralsex, meist mit einer/m gegengeschlechtlichen PartnerIn. Der grösste Teil (95%) hatte vaginale sexuelle Kontakt, die Hälfte der TeilnehmerInnen mindestens wöchentlich. Der gleiche Anteil von Frauen und Männern (49%) berichtete, jemals Analverkehr gehabt zu haben.

Eine kleine Minderheit der StudienteilnehmerInnen, hatte multiple PartnerInnen parallel, setzte Medikamente zur Steigerung der sexuellen Performance ein oder wurde im Zusammenhang mit Sexualität erpresst. Insgesamt berichteten 22% der Frauen und 35% der Männer über Geschlechtsverkehr mit einer Internetbekanntschaft. Mehr als die Hälfte der Männer (56%) und 46% der Frauen hatten stark alkoholisiert Geschlechtsverkehr.

Elf Prozent der Frauen waren jemals schwanger und 8% der Männer gaben an, eine Schwangerschaft induziert zu haben. Von den Frauen wurden diese Schwangerschaften zu 57.6% ausgetragen und zu fast 30% beendet. Bei den Männern wurden 49% der Schwangerschaften durch die Partnerin ausgetragen und 42% beendet.

Ein hoher Prozentsatz (45%) der jungen Erwachsenen hatten jemals einen HIV Test, wobei Frauen gegenüber Männern etwas überwogen. Fast alle gaben ein negatives Ergebnis an. Fast eine/r von zehn jungen Erwachsenen gab an bereits eine sexuelle übertragbare Erkrankung (STI) gehabt zu haben. Eine Chlamydieninfektion die häufigste STI bei Frauen und Männern.

Der überwiegende Anteil (93%) der Studienprobandinnen verwendete beim ersten Geschlechtsverkehr eine Antikonzeption/ einen Schutz, vor allem Kondome. Beim letzten Geschlechtsverkehr wurden Kondome für den Mann und kombinierte orale Kontrazeptiva ähnlich haufig eingesetzt. Mit Ausnahme von IUDs und dem Vaginalring wurden weitere kontrazeptive Methoden mit einer Häufigkeit unter 5% verwendet.

Ungefähr 90% aller Männer und Frauen gaben an, ausschliesslich oder vor allem durch gegengeschlechtliche Personen angezogen zu werden, Männer berichteten häufiger (4.6%) als Frauen (1.8%) über gleichgeschlechtliche sexuelle Anziehung. Insgesamt 0.6% der Frauen und 0.4% der Männer gaben keinerlei sexuelle Anziehung an. Der überwiegende Anteil der StudienprobandInnen (92%) beschrieb sich selbst als heterosexuell, ungefähr 6% als homosexuell oder bisexuell, etwas weniger als 2% wussten es nicht und 0.6% wählten die Option «Sonstige».

Ungefähr eine von neun Frauen gab eine sexuelle Störung an. Bei den Männern berichten 17.5% über eine prämature Ejakulation und der gleiche Anteil über eine erektile Dysfunktion, wobei dies nur von 0.6% als mittel oder schwer angegeben wurde.

Es gab einen grossen Unterschied zwischen der Anzahl der unerwünschten sexuellen Kontakte und sexuellen Gewalterfahrungen zwischen Frauen und Männern, mit deutlich häufigeren Ereignissen bei Frauen.

Zwei von fünf Frauen (40%) und 8% der Männer haben eine HPV Impfung erhalten. However, it is worth noting that half of males and over one-fifth of females did not know whether they had been vaccinated.

Fast die Hälfte der Frauen hat jemals eine Notfallantikonzeption verwendet und fast zwei Fünftel der Männer gaben an, dass Ihre Partnerin bereits eine solche eingesetzt hat. Nur selten wurde die Notfallantikonzeption als Haupt-Verhütungsmethode angegeben.

Männer sind häufiger online sexuell aktiv als Frauen.

Fast drei von vier StudienteilnehmerInnen gaben an, bereits eine sexuelle Textnachricht ohne Photo, ein sexy Photo und/ oder ein Video von sich selbst versendet zu haben. Fast 80% der StudienteilnehmerInnen hatten bereits eine solche Nachricht erhalten, ohne das sich geschlechtsspezifische Unterschiede zeigten. Gleichzeitig gaben 22% an, solche Nachrichten ohne Einverständnis des Senders an andere Personen weitergeleitet zu haben, wobei Männer hier überrepräsentiert waren.

Männer gaben etwas häufiger als Frauen an, bereits etwas oder einen Vorteil im Austausch gegen Geschlechtsverkehr erhalten zu haben, insgesamt handelt es sich hier jedoch um eine kleine Minderheit. Im Gegensatz hierzu gaben Männer deutlich häufiger als Frauen an, etwas Materielles oder einen Vorteil gegen Geschlechtsverkehr einzutauschen.

3.4 Schlussfolgerungen

Insgesamt ist die sexuelle Gesundheit und das Sexualverhalten in der Schweiz gut.

Gleichzeitig sollte der Einsatz von «online sex» hinsichtlich der Häufigkeit und potentieller Auswirkungen differenzierter analysiert werden.

Leider sind unerwünschte sexuelle Kontakte und sexuelle Gewalt bei Frauen weiterhin ein relativ häufiges Problem.

Im Gegensatz zur allgemeinen Annahme sind sexuelle Störungen bei jungen Erwachsenen relativ häufig.

Ein beträchtlicher Prozentsatz junger Erwachsener hat für sexuelle Aktivitäten bezahlt, hatte sexuelle Kontakte in betrunkenem Zustand oder Gruppensex.

Eine zuverlässige Antikonzeption/ Schutz vor STI ist die Norm in dieser Altersgruppe und variiert zwischen dem ersten und dem letzten Geschlechtsverkehr. Das Kondom für den Mann und kombinierte orale Kontrazeptiva sind die häufigsten angewendeten Verfahren. Eine Notfallantikonzeption ist eine klare Option, wenn die hauptsächlich angewendete Verhütungsmethode versagt. Trotz der hohen Anwendungsraten für Kondome auch beim letzten Geschlechtsverkehr, ist die angegebene Rate sexuell übertragbarer Erkrankungen mit 10% auch im Vergleich mit der Literatur relativ hoch und muss weiter untersucht werden.

4

Riassunto

4 Riassunto

4.1 Introduzione

Migliorare la salute sessuale e riproduttiva è una priorità della sanità pubblica e la tempistica del primo rapporto sessuale, nonché e il contesto in cui si svolge, hanno entrambi implicazioni per la salute. Inoltre, l'informazione e il monitoraggio sul comportamento sessuale sono essenziali per la progettazione e la valutazione di interventi volti a migliorare la salute sessuale.

L'ultima indagine sulla salute sessuale e riproduttiva degli adolescenti e dei giovani in Svizzera risale al 1995. Da allora, tutti i dati in materia provengono da indagini generali. In qualità di fattori contestuali, i contesti di vita dei giovani spiegano gran parte della varianza dei comportamenti sessuali e negli ultimi vent'anni sono comparsi numerosi nuovi fattori che potrebbero aver avuto un impatto sul comportamento sessuale dei giovani: L'AIDS è passato da una condizione mortale a una cronica, c'è stata una liberalizzazione dell'accesso alla contraccezione d'emergenza, la legge svizzera è cambiata nel 2002 e ha permesso l'aborto nelle prime 12 settimane di gravidanza, il vaccino HPV è raccomandato come parte del programma di vaccinazione (per le ragazze dal 2008 e per i ragazzi dal 2016), il citrato di sildenafil (es. Viagra®) è apparso sul mercato come trattamento per la disfunzione erettile, la pornografia è diventata estremamente accessibile e libera, sono emersi fenomeni di sesso online e di sexting. Questi cambiamenti possono avere un impatto sui comportamenti sessuali degli adolescenti, anche se non sappiamo come e in quale misura.

Questa inchiesta fornisce informazioni autoamministrate sui giovani adulti in Svizzera. L'obiettivo principale era quello di ottenere dati epidemiologici aggiornati sulla salute e i comportamenti sessuali e riproduttivi dei giovani.

4.2 Metodo

L'inchiesta si è articolata in tre parti: due di esse contenevano domande sulle caratteristiche socio-demografiche dei partecipanti (parte 1) e sul loro comportamento sessuale e sanitario (parte 3), e una parte era un calendario della storia di vita (LHC, parte 2). Nel LHC, è stato chiesto ai partecipanti di identificare i periodi in cui diversi eventi della loro vita sono accaduti. L'obiettivo del LHC era di aiutare le persone a ricordare e datare degli eventi personali facendo riferimento ad altri eventi chiave o tappe fondamentali della loro vita (ad esempio, il trasferimento in una nuova residenza o l'ottenimento della patente di guida).

Il campione iniziale è stato fornito dall'Ufficio federale di statistica ed era rappresentativo dell'intera popolazione residente in Svizzera in termini di sesso, lingua e cantone di residenza. Il campione comprendeva 49'798 individui di età compresa tra 24 e 26 anni al 30 settembre 2016 (data di nascita tra il 1° ottobre 1989 e il 30 settembre 1992).

A partire dall'8 giugno 2017 è stata inviata una prima lettera d'invito a 10'000 persone. Per garantire il funzionamento del server e consentire adeguamenti in caso di problemi, le lettere rimanenti (39'798) sono state inviate in due ondate diverse (9 giugno e 30 giugno). A seconda del cantone di residenza, la lettera è stata inviata in francese e tedesco o in italiano e tedesco.

L'obiettivo iniziale era quello di ottenere 10.000 risposte, ma è apparso rapidamente che gli intervistati erano più riluttanti del previsto a partecipare al sondaggio. Inoltre, 2'402 (4,8%) lettere sono state restituite dal servizio postale, 12 (0,02%) da genitori o tutori per informare che la persona era disabile, era andata all'estero o non parlava una delle tre lingue e 16 (0,03%) lettere sono state restituite dai partecipanti stessi per dire che non volevano partecipare.

Nel settembre 2017 è stato deciso di inviare un sollecito a 10'000 persone scelte a caso tra quelle che non avevano ancora risposto e che non facevano parte delle lettere restituite. La raccolta dati è terminata il 26 novembre 2017.

Il campione finale comprende 7'142 persone di età compresa tra 24 e 26 anni che vivevano in Svizzera al momento della consegna degli indirizzi (30 settembre 2016). Ciò corrisponde a un tasso di risposta del 15,1%. Di questi, 5'618 hanno compilato l'intero questionario o una parte significativa (11,9%, pari al 78,7% di tutti gli intervistati).

Dopo aver calcolato la distribuzione delle principali variabili socio-demografiche disponibili nell'indagine e per le quali era nota la reale distribuzione a livello di popolazione, abbiamo dovuto correggere la distribuzione del campione utilizzando pesi per due caratteristiche: sesso e cantone di residenza, in quanto era presente una sovrarappresentazione di femmine provenienti dalla Svizzera francese. Sono stati calcolati i pesi di coloro che hanno abbandonato durante la terza parte del questionario e di coloro che lo hanno compilato fino alla fine (anche se hanno omesso alcune domande).

4.3 Risultati

Complessivamente il 94% delle femmine e l'89% dei maschi hanno avuto una relazione stabile. Attualmente, circa tre partecipanti su quattro hanno un rapporto di questo tipo.

La grande maggioranza (95%) degli intervistati ha avuto partner sessuali, la maggior parte dei quali tra i 2 e i 7. Circa il 5% non ha mai avuto un partner sessuale. La maggior (94%) parte ha anche avuto partner sessuali negli ultimi 12 mesi, ma in questo caso era principalmente solo uno. Oltre il 70% dei maschi e delle femmine ha avuto partner sessuali occasionali, ma solo un quarto di questi negli ultimi 30 giorni.

La maggioranza (86%) degli intervistati ha avito solo contatti eterosessuali, e il 15% delle donne e il 13% dei maschi omosessuali o bisessuali. L'età media al primo contatto sessuale è di poco inferiore ai 17 anni.

Quasi tutti (96%) gli intervistati hanno avuto rapporti sessuali orali, la maggior parte dei quali con un partner di sesso opposto. La stragrande maggioranza (95%) ha avuto sesso vaginale e la metà

degli intervistati lo ha fatto almeno settimanalmente. La stessa percentuale di femmine e maschi (49%) ha riferito di aver avuto rapporti anali.

I partecipanti che hanno riferito di aver avuto rapporti sessuali con più partner allo stesso tempo, di aver fatto uso di farmaci per migliorare le prestazioni sessuali o di essere stati ricattati sono una piccola minoranza. Tuttavia, coloro che hanno avuto rapporti sessuali con qualcuno incontrato su Internet rappresentano il 22% delle femmine e il 35% dei maschi. Più della metà dei maschi (56%) e il 46% delle femmine hanno avuto rapporti sessuali in stato di ebbrezza.

Undici per cento delle femmine sono state incinta e l'8% dei maschi ha dichiarato di aver avuto una partner incinta. Tra le donne, la gravidanza è stata perlopiù continuata (57,6%) e in quasi il 30% dei casi è stata interrotta. Tra i maschi, la gravidanza è continuata nel 49% dei casi e si è interrotta nel 42%.

Una percentuale importante dei giovani (45%) ha avuto un test HIV, tra cui le femmine leggermente superiori dei maschi. Quasi tutti hanno registrato un risultato negativo. Quasi un giovane su 10 ha riferito di aver avuto una diagnosi di infezione sessualmente trasmissibile. L'infezione da clamidia è stata la più frequente tra le donne e gli uomini.

La stragrande maggioranza (93%) degli intervistati ha usato un qualche tipo di contraccettivo / protezione al primo rapporto sessuale, principalmente preservativi maschili. Tuttavia, alla fine, i metodi di contraccezione / protezione sono stati più equamente distribuiti tra preservativo maschile e pillola anticoncezionale. Tutti gli altri metodi contraccettivi hanno rappresentato meno del 5%, ad eccezione dell'IUD e dell'anello vaginale.

Circa il 90% dei maschi e delle femmine ha dichiarato di essere solo o fortemente attratto da persone di sesso opposto, e i maschi (4,6%) in numero superiore alle femmine (1,8%) nel segnalare attrazione dello stesso sesso. Vale la pena notare che lo 0,6% delle femmine e lo 0,4% dei maschi ha dichiarato di non sentirsi attratti da nessuno. La grande maggioranza dei partecipanti (92%) si è descritta come eterosessuale, circa il 6% come omosessuale o bisessuale, poco meno del 2% non lo sapeva e lo 0,6% ha indicato un'altra opzione.

Circa una donna su nove ha riportato una disfunzione sessuale. Tra i maschi, il 17,5% ha indicato l'eiaculazione precoce e la stessa percentuale di disfunzione erettile, sebbene solo lo 0,6% l'abbia dichiarata moderata o grave.

Una differenza importante tra donne e uomini è stata rilevata nelle esperienze sessuali indesiderate e nell'essere stati vittime di aggressioni o abusi sessuali nel corso della vita, con le femmine che superano di gran lunga i maschi.

Due femmine su ogni 5 (40%) e l'8% dei maschi hanno ricevuto il vaccino contro l'HPV. Tuttavia, vale la pena notare che la metà dei maschi e oltre un quinto delle femmine non sapevano se erano stati vaccinati.

Quasi la metà delle donne ha usato la contraccezione d'emergenza e quasi due quinti dei maschi hanno riferito che il loro partner l'ha usata. Gli intervistati che hanno indicato di utilizzare loro stessi (o il loro partner) la contraccezione d'emergenza come metodo principale di contraccezione sono molto pochi.

I maschi sono più numerosi delle femmine nell'attività sessuale online.

Quasi 3 su 4 hanno riferito di aver già inviato un messaggio sexy solo testo senza foto, una foto sexy e / o un video di se stessi. D'altro canto, quasi l'80% dei partecipanti ha già ricevuto tali messaggi. Per queste due azioni non vi sono differenze di genere. Tuttavia, il 22% ha riferito di aver già inoltrato tali messaggi ad altre persone senza il consenso. In questo caso, gli uomini erano sovrarappresentati.

I maschi hanno una probabilità leggermente più alta delle femmine di aver ricevuto qualcosa o di aver ottenuto un vantaggio in cambio di un rapporto sessuale, ma è rimasta una piccola minoranza. Al contrario, i maschi hanno chiaramente superato le femmine nel dare qualcosa o nell'offrire un vantaggio in cambio di rapporti sessuali.

4.4 Conclusioni

Nel complesso, la salute sessuale e il comportamento dei giovani in Svizzera sono buoni.

Tuttavia, i giovani attivi nel sesso online devono essere ulteriormente analizzati per quanto riguarda sia la frequenza di questa pratica sia il rischio potenziale che corrono.

Purtroppo, le donne continuano ad essere sovrarappresentate nei casi di esperienze sessuali indesiderate e di abusi sessuali.

Contrariamente a quanto si crede, le disfunzioni sessuali sono relativamente comuni tra i giovani.

C'è una percentuale considerevole di giovani che hanno scambiato favori sessuali con denaro, beni o servizi, e che hanno avuto rapporti sessuali in stato di ebbrezza o di gruppo.

L’uso di contraccettivi / protettivi affidabili è la norma in questa fascia d'età e varia dal primo all'ultimo rapporto sessuale. Il preservativo maschile e la contraccezione ormonale sono di gran lunga i più usati. La contraccezione d'emergenza è un'opzione chiara nei casi in cui il metodo contraccettivo principale fallisce. Tuttavia, anche se il tasso di utilizzo del preservativo è abbastanza elevato, anche alla fine del rapporto sessuale, il tasso di infezioni sessualmente trasmissibili riportato del 10% è relativamente alto rispetto ad altri studi e richiede ulterioriori analisi.

5

Introduction

5 Introduction

5.1 Current state of research in the field

Sexual health is an integral and important part of the overall wellbeing of individuals. Sexual health and behavior in adolescence will directly influence adult sexual health and behavior. Furthermore, poor sexual health during adolescence has important negative personal, social and economic consequences on the short, medium and long term into adulthood.

Improving sexual and reproductive health is a public health priority[1] and the timing of first sexual intercourse and the context in which it occurs both have health implications[2]. Moreover, information and monitoring about sexual behavior is essential to the design and assessment of interventions to improve sexual health[3].

The last survey centered on the sexual and reproductive health of adolescents/young adults in Switzerland was carried out in 1995[4]. This survey provided valuable indicators on adolescent sexual behavior that were subsequently used for prevention programs and strategies. Since then, all data on the subject come from general surveys such as the Swiss Multicenter Adolescent Survey on Health (SMASH)[5], the Health Behavior in School-aged Children (HBSC) survey[6-8], or the Enquête Suisse sur la Santé[9]; or from reports using different sources[10-13].

As contextual factors, the life contexts of youths explain a large amount of the variance in sex-related behaviors[14], and a fair amount of new developments have appeared in the last twenty years that might have had an impact on youth's sexual behavior: AIDS has gone from a fatal to a chronic condition, there has been a liberalization of the access to emergency contraception, Swiss law changed in 2002 and allowed abortion in the first 12 weeks of pregnancy, the HPV vaccine is recommended as part of the vaccination program (for girls since 2008 and for boys since 2016), sildenafil citrate (e.g. Viagra®) has appeared on the market as a treatment for erectile dysfunction, pornography has become extremely accessible and free, phenomena of online sex and sexting have emerged. These changes might have an impact on adolescent sexual behaviors although we do not know how and to what extent.

Moreover, when data related to sexual and reproductive health are collected as part of a general adolescent or young adult health survey, they are mainly limited to being sexually active[5-9, 15], having used a condom[5-9, 15], the pill[6, 8] or any contraceptive method[5, 6] at last intercourse, type and frequency of contraception use[5], number of sexual partners[5], number of occasional sexual partners[9], age at first intercourse[5, 6, 9], having been pregnant/ever making someone pregnant[5], a history of sexual abuse[5] and, sometimes, sexual attraction[5, 9]. However, important data such as wantedness of first intercourse, age difference between partners, sexual orientation, sexual dysfunctions, sexual behaviors other than vaginal intercourse, unwanted sexual experiences (other than sexual abuse), or dating violence are rarely inquired about, even though they can have a tremendous impact on youths' present and future sexual health and overall wellbeing.

5.2 Understudied matters of sexual behavior

A large part of adolescent sexuality nowadays is played out online; therefore an important element to be taken into account in the context of adolescent sexual behavior is the development of the Internet and new technologies with its positive and negative aspects[16]. Our survey in the Canton of Vaud[17, 18] put forward that practically all participants connected to Internet regularly. In 2014[17], at the age of 16, 92% of participants reported a daily connection to Internet. In Switzerland, as part of a larger study on media use among youths (JAMES) aged 12 to 19 in 2016[19], 99% reported having a personal mobile phone (98% of them a Smartphone) and 94% were registered in at least one social media. Considering that adolescents today are digital natives[20], Internet can influence sexual behaviors of adolescents basically from three perspectives: online sexual experiences, easy access to pornography and sexting.

5.2.1 Online activities

The Internet has been considered as a place to explore and construct sexuality such as through chat rooms where the users are very active in creating their sexualised talk and their own cyber cultures, therefore constructing important components of their sexualised environment on the Net[21, 22]. The Internet and new technologies have also become informative and socializing tools [23-27]. In this context of sexual education and exploration, the unlimited connection and instant communication offered by new technologies are fully part of the sexualisation process[28]. The online context can present many advantages, in particular among adolescents who are starting to experiment their sexuality thanks to lowered inhibition due to lack of physical presence, more comfort in expressing feelings, constructing a more socially acceptable version of themselves, etc.[29].

Another area of Internet which can have an effect on adolescents' developing sexuality is an easy access to pornography, whether intentional or unintentional. According to the 2012 Ado@Internet.ch survey data [18], 1 out of seven 14-year-old youths visited pornography websites often or very often. Online activities in relation to pornography are also much more commonly reported among male than female adolescents[30, 31]. Indeed, in 2014, at the age of 16, 1.5% of girls and 32% of boys reported having consulted pornography websites often or very often in the Ado@Internet.ch survey[17]. In 2008, French data among 18-19 year-olds[32] showed that 3.6% of girls and 41.9% of boys had already visited pornographic websites, 58.7% of girls and 90.2% of boys declared having seen at least one pornographic movie in their lifetime; and 10.8% of girls and 55.8% of boys declared having often seen pornographic movies in the past 12 months. More recently, in 2013, the French Institute of public opinion (IFOP) conducted a survey[33] on the influence of new technologies on sexual life of youths (N=1021) aged 15-24 years and found that 69% of boys and 35% of girls had already surfed on a pornographic website. At the age of 15, more than a half (55%) of youths had already seen a pornographic movie. Whether intentional or unintentional, problems which emerged in the literature concerning online pornography are its effects on adolescent sexuality as it serves as an agent of sexual socialization[34-36], the access to a wide range of photographs and videos of every level of visual and auditory explicitness[37], and possible associations with adolescent risky sexual behaviors such as multiple sexual partners[38, 39], non-use of condom at last sexual intercourse among males[38, 40], sensation seeking attitudes and

behaviours[40, 41], and stronger beliefs that women are sex objects[42]. In general, pornography can have a distortion effect of sexual perceptions on youths compared to reality.

Another relatively new phenomenon has emerged in this context of online sexual activity: *sexting*, the contraction of *sex* and *texting*. In general, sexting could be defined as the electronic production and sending of personal sexual or intimate content. However, its definition and, consequently, its measure are still to be agreed on. Our recent literature review[43] on sexting among youths showed that prevalence rates ranged from 0.9% to 60%, mainly depending on the definition used to measure the activity. In 2016, we conducted an exploratory qualitative study[44] on sexting among youths and highlighted the need of a precise definition with clear distinctions in terms of actions (sending, receiving, forwarding to others without consent) and supports (text-only message, photo, video) to address effectively the problems linked to this behavior. Considering sexting as a problem per se or as a risky behavior is still a controversy[45-49]. On the one hand, sexting could be apprehended in a sexualization context as a way to express desire between two consenting persons. On the other hand, problems could appear when someone is pressured to send something or when the content is forwarded to other people without consent. In 2008, the first data on this activity among youths (13-26 years) came from an American survey[50] commissioned by CosmoGirl.com and The National Campaign to Prevent Teen and Unplanned Pregnancy. Regarding suggestive sexual text-only message, almost 1 out of 2 (48%) participants reported having already sent, 56% received and 20%forwarded to others. Similarly, for nude or semi-nude photo or video, they were 26% to send, 39% to receive and 15% to forward. In Switzerland, as part of a larger study[19] on media use among youths aged 12 to 19, lifetime sending a flirtatious or erotic photo or video of oneself reached 11% and 43% for receiving in 2016. Finally, in 2018, a meta-analysis[51] based on 39 studies and 110'380 participants (mean age 15.2) found that mean prevalence rates for sending, receiving and forwarding sexts were 14.8%, 27.4% and 12.0%, respectively. However, this study was not able to define the term sext (e.g. text-only, photo, video) as differences in measures were present between studies.

5.2.2 Human papillomavirus (HPV) vaccination

The HPV vaccination was introduced in Switzerland in 2008 and is recommended to all girls through cantonal programs between the ages of 11 and 14 (before age 15). A catch up vaccine was also suggested before the age of 20 years and possible (individual examination) between 20-26 years until 2017. As our population was aged between 24 and 26 in 2016, they were aged between 16 and 18 when HPV was introduced in 2008 and could be part of the catch up strategy. As the recommendation for boys came out in July 2016, we also questioned males on their vaccination against HPV even if the effect of this recommendation will certainly have impact later.

However, not much is known concerning the impact of the recent implementation of the vaccination. A Finnish study[52] found that, 5 years after the introduction of the vaccination on 16-17 year old girls, it had had no impact on health-related quality of life compared to controls. Some authors[53, 54] have suggested the notion of risk compensation, meaning that vaccinating young women could increase their risky behavior because it would lower their risk perception. However, there is no evidence that HPV vaccination influences sexual behaviors among girls[55].

In the canton of Vaud, a recent study[56] conducted in 2013 found that 77.5% women aged 18 were vaccinated against HPV. However, only 56% of them reported having received the three doses according to the recommendations before 2012 (from this year, the recommendations changed with two doses for girls under 15 years). In addition, HPV vaccine was more reported among contraceptive pill users and apprentices.

A pooled study[57] was conducted to determine the worldwide HPV vaccination coverage up to October 2014. For Western Europe (Austria, Belgium, France, Germany, Luxembourg, Monaco, Netherlands and Switzerland) coverage rates were distributed as follows: 23% among 10-14 year-olds, 36% among 15-19, 35% among 20-24 and 6% among 25-29. Globally, 5% of all females in Western Europe were vaccinated against HPV.

5.2.3 HIV/AIDS and sexually transmitted infections

HIV/AIDS appearing in the 80s brought a rapid and important development of sex education and prevention of sexually transmitted infections (STI). One of the effects of HIV/AIDS prevention campaigns was a raise in condom use with occasional sexual partners among 17 to 20 year-olds from 16% in 1987 to 69% in 1992[58]. Since the 1980s, the condom has been uniformly mentioned as the mean of protection against HIV/AIDS[59]. On the other hand, HIV/AIDS was a threat that confronted adolescents from the 80s and 90s with an ambiguous situation, requiring them to deal simultaneously with the learning of their sexual and affective life, notions of life and death, and spontaneity and caution.

However, in the past years, treatments and medication to fight HIV/AIDS having greatly developed, it has lost its status of fatal illness and has endorsed the one of chronic illness. In this context, HIV/AIDS prevention has greatly decreased to join the list of other STIs[60]. Moreover, while protection was greatly used in the context of a deadly illness, it seems to have decreased as rates of HIV/AIDS in the general population of Switzerland, although constantly decreasing since the early '90s, have increased between 2000 and 2008 together with STIs in general[61].

For the last ten years, an increase in rates of declared STIs has also been observed in Switzerland in general[61]. For instance, infection by Chlamydia Trachomatis is the most common STI and continues to rise according to the 2016 rates of the Communicable diseases section of the Federal Office of Public Health in Switzerland. Based on the five last years (2011-2016), median age of women at the moment of a Chlamydia diagnosis was 24. In other worlds, half of them were under 24 years old, most cases being in the 15-24 group[62].

5.2.4 A new context for emergency contraception

In the case of contraception failure (condom failure, disruption in oral contraception, etc.) emergency contraception (EC; also called post-coital contraception or morning-after pill) has been used for more than 20 years[63]. Condom failure – such as slippage and breakage[64, 65] – has been the most frequently stated reason for asking for EC[66-69]. However, no contraception use was shown to be a more common reason for seeking EC among adolescents than among young adults (above 18 years old)[70]. In Switzerland, already in 1995, among the 16-20 year-olds, most sexually active girls

(89.3%) and boys (75.1%) knew about this method and between 12% and 29% had ever used it [4]. Similar data were found in 2002[63].

However, since then, accessibility to EC has greatly improved in Switzerland. While until 2002, EC was only delivered by health professionals under prescription[63], since November 2002, EC has also become accessible as of 16 years of age over-the-counter in pharmacies with the 18-21 year-olds making up the most important group among them[71]. In addition, experts in emergency contraception have also regularly recommended the accessibility to EC for girls under the age of 16 by examining the ability to discern. A position paper was published in 2014[72].

Yet, so far we have not measured the impact of this greater accessibility on the awareness and use of EC; whether it remains a backup emergency method or has become a routine contraceptive method replacing other ones.

5.2.5 Sexual dysfunctions among males and females

The two most common sexual dysfunctions (SD) are erectile dysfunction (ED) and premature ejaculation (PE). Although most risk factors for male SD such as ED are related to aging[73], SDs are not so rare among young males. In a study among youths aged 18-25, 13% reported an ED, and the rate increased to 25% when ED was related to condom use[74]. Our study[75] among 18-25 year-old Swiss men put forward high prevalence rates of 11% for PE and 30% for ED and potentially deleterious consequences associated with it such as poor mental health, substance use, lack of physical activity, or use of medication without prescription, among others. Yet, young male adults suffering from ED rarely discuss it with their medical provider, not even when it is related to condom use and puts them at risk[74], and patients at sexual risk are not more likely to discuss such issues than those not at risk[76].

In the same line, SDs among young females are rarely studied and acknowledged and poorly investigated[77]. In fact, female SDs are only regarded among adult populations[77, 78] or in specific cases such as sexual distress as a result of PE among males[79], fertility treatment[80], chronic diseases[81], eating disorders[82], genital mutilation[83], or sexual abuse[84], among others. However, not only could female SDs affect quality of life[81], but they can also have deleterious consequences on contraceptive use including protection against STIs[77] and relationships[85].

5.2.6 Medication to enhance sexual performance

Although ED is not generally associated with adolescence, some teens and young adults report using ED medication[86]. The main reasons to use it among healthy young men are related to sexual confidence, erection quality and better sexual performance[87] and there seems to be an association between ED occurring due to condom use and ED medication use[74]. Curiosity and peer pressure also seem to be important reasons to start using this type of medication[88]. An American study[89] found that 4% of male undergraduate students had ever tried ED medications and that 1.4% were current users. Furthermore, even when used for ED, these medications are rarely used under medical supervision among male young adults[74]. Moreover, means of obtaining SD medication

seem to be more common through non-medical sources such as friends or the Internet[74, 90], as it is anonymous and there is no need of a prescription or consultation.

Finally, young men having sex with men (MSM) were found to be significantly more likely to use SD medication than young men identified as heterosexuals[74]; and among adult MSM, Viagra™ use was associated with risky sex (increased number of sex-partners, higher rates of STIs, and unprotected sex with HIV-positive partners) and illicit drug use[91, 92].

5.2.7 Dating violence and unwanted sexual experiences

Between a consensual relationship and sexual assault, there is a grey zone that consists of all the situations where a person unwillingly engages in a sexual act although no force or coercion is involved, that can be defined as unwanted sexual experiences (USE)[93]. USE are defined by three main characteristics, namely regret of a sexual act, misperception of sexual intent, and lack of communication between partners. The main reasons for women to do so are "keeping the man happy", partner's pressure, real or felt, and miscommunication between partners regarding the desired level of sexual intimacy[94-97]. USE are often related to the first sexual intercourse where coercion from sexual partners can lead to unwanted sexual activity and therefore regret[98]. It is also known that females endure many sexual assaults thinking they are guilty of having induced it [93] resulting in a high probability of under-reported situations.

Nonetheless, dating violence among adolescents is relatively prevalent but limited information is available[99]. A study[100] among university students reported that almost one fourth of females and 7% of males declared one or more experiences of unwanted sexual intercourse; and these proportions increased to 37% and 18%, respectively, when fondling was included. Moreover, consequences of violence in the intimate sphere are numerous and have serious impact on the sexual behaviors of the victims, the overall wellbeing and health[101]. In this context, teenagers are the most at-risk population as they are at the debut of their sexual life, they are setting up their own boundaries and they are learning to respect the boundaries of their peers.

5.3 Objectives

This survey provides self-reported information from young adults in Switzerland. The main objective was to obtain current epidemiological data on young people's sexual and reproductive health and behaviors, with a specific focus on the sexual debut.

6

Methods

6 Methods

6.1 Questionnaire

The survey used a quantitative questionnaire comprising three parts: two of them contained questions on socio-demographic characteristics of the participants (part 1) and on their sexual and health behavior (part 3), and one part was a life history calendar (LHC, part 2). In the LHC, the participants were asked to identify the period of occurrence of different events in their life. The aim of the LHC was to help the individuals facilitate the recollection and assign a date to personal events by referencing each of them to other key events or milestones of their life (e.g. moving to a new residence or obtaining a driver's licence).

The first part of the questionnaire contained 19 traditional questions (unique choice items, questions to determine the date of an event (month-year) and free-text questions to specify the answer *other*), 10 of them being displayed only conditionally to a specific answer to a preceding question. These questions were mainly socio-demographic (sex, birth date, etc.) and some of them were chosen to place upstream a set of reference points on the visual calendar representing the second part of the questionnaire (date of first smartphone, getting driver's licence, etc.).

The second part of the questionnaire investigated the temporality of 38 different life events belonging to six larger domains (family, education/work, transition to adulthood, sexuality, general health, and substance use). Each event that occurred for the respondents had to be placed on a calendar and was represented as an icon. The main goal of the calendar was to obtain a clear timing of the occurrence of several events directly related to the entrance into sexuality, and to events possibly linked to sexual debut such as moving outside of the family home, or experiencing with substances.

The third and longest part of the survey, divided into thirteen subparts, contained a total of 331 questions including the free-text questions for the category *other* (or 284 without), 89 being asked to all respondents regardless of their sex, gender or sexual activity, the others being displayed according to the answer to one or several previous questions. All these questions were of traditional types (multiple choice items, questions to determine the date of an event (month-year), an age or a number). Free-text questions were also available for the answer *other*. Questions covered a large number of domains related to sexuality including sexual education, first sexual experiences (oral, vaginal, anal), sexual orientation, relationships, unwanted sexual experiences, sexual dysfunctions, sexually transmitted infection, contraception and protection, online activities and sexual transactions (financial or other type). Whenever available, existing validated questions were used. The questionnaire was administrated online from a secured website (www.lesados.ch) and participants could choose in which one of the three main Swiss national languages (German, French and Italian) they wanted to complete it. The content of the questionnaire and the software with the LHC part were pilot-tested with students from the University of Lausanne.

6.2 Variables

6.2.1 Demographics

Demographic variables included: age, gender (female / male / other), residence (urban / rural), birthplace (Switzerland / other), parents' birthplace (Switzerland / other), linguistic regions (German, French, Italian), living with parents (yes / no), parental situation (together / other), perceived family socio-economic status (SES) at the age of 15, current quality of life and SES, siblings, children, highest education level attained, current professional or educational activity and current relationship situation.

Questions on residence, birthplace, linguistic regions and parental situation were taken from the Swiss multicentre adolescent survey on health 2002[5] (SMASH02).

To assess family SES we used the question from the European School Survey Project on Alcohol and other Drugs[102 103]: "Compared to the financial situation of other families in Switzerland, would you say that your family is…" with three possible answers: above average, average and below average. Since we assumed that most participants would no longer live with their families, and to be in line with the possible onset of sexual behaviors, we added *at the age of 15* to the question. Furthermore, as it required using memories of 10 years or more, we also added *I do not remember* to the possible answers.

As a proxy of current quality of life and SES, we used satisfaction scales (of 1 to 10) to cover four different areas of life: standard of living, accommodation, social life and education. These scales were taken from the survey on European quality of life[104].

6.2.2 General health

Participants were asked about perceived health status (from excellent to poor), chronic disease (no, non-limiting, limiting), handicap (no, non-limiting, limiting), weight [105], height (cm), body perception (from too thin to too fat), perceived onset of puberty (earlier, at the same time, later than peers), mental health, age at menarche and first gynaecological appointment.

With the exceptions of mental health and gynaecological appointment, all questions were taken from SMASH02[5].

To assess general mental health (depression and anxiety), we used the mental health inventory (MHI-5), a brief questionnaire with 5 items referring to the last 4 weeks[106]. *How much of the time during the past 4 weeks have you… (1) been a very nervous person? (2) felt so down in the dumps that nothing could cheer you up? (3) felt calm and peaceful? [33] felt downhearted and blue? (5) been a happy person?* Score ranging from 0 to 100 with the higher the score, the better mental health. Although this questionnaire does not have a formal cut-off[107], we have used the one most used in the literature (≤52)[108, 109], that is also used by the Swiss health observatory to assess mental health in its studies[110]. Thus, mental troubles were assessed with a score of 52 or less.

Self-reported weight and height were used to calculate the body mass index (BMI) according to the WHO Classification weight status. Thus, thinness was defined with a score of <18.5, normal weight between ≥18.5 and <25, overweight between ≥25 and <30 and obesity with a score of ≥30.

6.2.3 HIV testing and sexually transmitted infections (STI)

For these two topics, we used questions from the third national survey of sexual attitudes and lifestyles[9] (NATSAL). For HIV testing, we asked if they have ever done such a test and the reasons for doing it (pregnancy, sexual health check-up, general health check-up, to stop condom use, etc.). We slightly modified the NATSAL list of STIs to keep the most frequent ones but we added the answer *other* with a possible free-text answer.

6.2.4 Type of relationships

We looked at current relationship (none, non-steady relationship with the same person, non-steady relationship with several persons, steady relationship, steady relationship but also casual sex / relationship with others), number of lifetime steady partners, questions on the first steady relationship (age, age of partner, overall satisfaction).

The question on current relationship was inspired by a question taken from the unwanted sexual experiences (USE) questionnaire created for a study conducted by our team[93, 111].

6.2.5 Sexual behavior

We included number of sexual partners (lifetime, last 12 months), reasons for never having had a sexual partner, number of casual sexual partners (lifetime, last 30 days), any sexual contact (with/out penetration (caresses, fingering, fellatio, cunnilingus, vaginal/oral penetration, etc.)), oral sex, vaginal sex, anal sex, specific sexual activities, contraception and protection (first and last intercourse). To ensure that terms were understood and explicit enough, we added precisions between brackets for the different kind of sexual contacts to include all kind of practices. Thus, we defined oral sex as a mouth-sex contact (given or received), vaginal and anal sex as the introduction of a penis or an object in the vagina or the anus.

For each sexual behavior, we asked the age of the participant and the sex of the partner the first time. Taken from the NATSAL survey[9], additional questions were asked for first vaginal and anal intercourse: partner's age, partner's first time, later regrets, incitements, and assessment in terms of pleasantness.

To assess the context of the first time, we also asked the kind of relationship in which this first time occurred. The question was taken from the USE questionnaire[93, 111].

We also asked for specific lifetime sexual activities such as sexual intercourse with no future, 3-way intercourse, group sex or orgy, sexual intercourse with someone met on the Internet and sexual intercourse after excessive use of alcohol or drugs. These questions were taken from a French

survey on the influence of new technologies on the sexual life of youths[33] conducted by the French Institute of public opinion (IFOP).

Questions on contraception and protection were taken from SMASH02[5] for the first and the last intercourse. The list was slightly modified to not include emergency pill (a specific chapter was devoted to it<, to include patch and to combine diaphragm and chemical means.

6.2.6 Sexual orientation

As sexual orientation is a complex issue for youths, some authors advise using a multidimensional approach to ensure that different measures of sexual orientation are considered[112]: As prevalence rates seem to vary according to the perspective used, a multidimensional variable is recommended. Thus, three perspectives were used and considered together:

1) Sexual orientation identity (gay, lesbian, bisexual, heterosexual, do not know / not sure or other)

2) Attraction (sexual or affective attraction for the other / same sex)

3) Sex of sexual partners (sexual activities-behaviors). For this third criterion, we looked at the effective sexual experiences or, in other words, the sex of their lifetime sexual partners in any kind of sexual contact. Indeed, some of them may have experienced homosexual behaviors but identify themselves as heterosexual.

Adolescents and young adults with a non-heterosexual orientation will report more easily being attracted to a same sex person than auto-identified themselves as gay, lesbian or bisexual[113].

In the questionnaire, sexual orientation identity was measured with the question from the NATSAL survey[9] *How would you describe yourself?* with the answers *heterosexual, lesbian / gay or bisexual*. We also decided to add the answers *I do not know / I am not sure, I do not want to answer* and *other*.

For attraction, we took the question from SMASH02[5] *What best describes how you feel?* with answers ranging from *I am only attracted to people of the opposite sex* to *I am only attracted to people of the same sex as me*. Two additional answers were offered: *the gender does not affect my attraction* and *I do not feel attracted to anyone* (asexual).

Finally, the third dimension was measured with the questions on sexual contact, oral-vaginal-anal sex described above to determine non-heterosexual activities during their life with the sex of their partners during these sexual behaviors.

In addition to these three separate dimensions, we created a combined variable that allowed us to test a multidimensional approach. For each of the three dimensions mentioned above, we dichotomized respondents between “heterosexual” (respectively those who answered “heterosexual” to the sexual orientation identity question, those who answered being “only or strongly attracted by people of the opposite sex” to the attraction question, and those who reported sexual experiences only with partner of the opposite sex in the question about the sex of

sexual partners for any kind of sexual contact) and "non-heterosexual" (those who answered any of the other response options in these three questions, not including certain categories such as *Do not want to answer, attraction for no one and other*).

When combining these results together, the 3-dimensional variable opposed "exclusively heterosexual" (for a given respondent, all three dimensions categorized as "heterosexual") to "non-exclusively heterosexual" (all the other respondents).

6.2.7 Sexual dysfunctions / problems

We assessed female and male sexual dysfunctions, and looking for help or information on sexual troubles or problems.

For female sexual dysfunctions, we used the Female Sexual Function Index (FSFI), a questionnaire to assess sexual functioning in women (desire, arousal, orgasm, satisfaction, pain, and lubrication) in the last 4 weeks. We used the validated short form of this questionnaire that included six questions instead of 19[114]. Female sexual dysfunction was determined with a score of ≤19/30.

For male sexual dysfunctions we were interested in the two most frequent ones: erectile dysfunctions (ED) and premature ejaculation (PE). To detect ED, we used the abridged 5-item version of the International Index of Erectile Function (IIEF-5)[115]. The five questions referred to the last 6 months and the score that was obtained with the sum of the responses to the 5 items was divided into 5 categories: no ED (score of 22-25), mild ED (17-21), mild to moderate ED (12-16), moderate ED (8-11) and severe ED (5-7).

To detect PE, we used the two questions defined by Porst et al.[116] that referred to two criteria in the last 6 months: low or absent control over ejaculation and ejaculatory latency that is a problem for the man and/or his partner. Men were classified as having PE when they reported responses indicative of PE to the two questions.

Finally, we asked all participants, even if they were not positive for sexual dysfunctions, if they had ever looked for help or information on sexual troubles or problems and if so, the mean(s) that they used (e.g. parents, friends, Internet, etc.) and if it was helpful.

6.2.8 Medication to enhance sexual performance

We included medication to enhance sexual performance (ever, last 30 days), reason(s) for using it, source(s) by which they acquired the medication, partner being aware.

Questions regarding the use of medication to enhance sexual performance were taken from a study conducted by Harte et al.[89] in the United States to determine the recreational use of erectile dysfunction medications. Men answering yes to the lifetime use of such medication were then asked for current use (last 30 days), reason(s) for using it (e.g. medical prescription, curiosity, libido increase, performance anxiety decrease), source(s) by which they acquire the medication and if their partner knew about it. Similarly, we asked female participants and male participants having

(or having had) sex with males whether they ever had a partner who used this type the medication and how helpful it was.

6.2.9 Unwanted sexual experiences and sexual abuse

Participants also responded to unwanted sexual experiences (USE) (ever), sexual intercourse without really wanting and reason(s) for having accepted anyway, sexual intercourse that was regretted afterwards, refusing to have sex and reaction of the partner, being blackmailed for having sex and type of blackmail, sexual assault/abuse.

The questions on USE were taken and adapted from the questionnaire created for a study conducted by our team[93, 111].

The question on sexual abuse was taken from SMASH02[5]: *Have you ever been victim of sexual assault or abuse? A sexual assault or abuse is when someone of your family or someone else touches you in a place of your body where you would not want to be touched, or when someone does something to you about your sexuality but he or she should not do it*.

6.2.10 Human papillomavirus vaccination (HPV)

Participants were asked about HPV vaccination, age at first dose, reason for non-vaccination and for refusal.

Regarding reasons for non-vaccination, six possible answers were offered: *unaware of the vaccination, refusal, not in the age range for insurance reimbursement, already infected by the HPV, discouraged by friends or family, other*. For those who answered refusal, an additional question opened for the reason of such a refusal with four possible answers: *afraid of side effects, overall opposition to vaccination, not worth it because the vaccine only protects against certain types of HPV, other*. Questions on HPV were asked to all participants, even if recommendations for HPV vaccination among boys only came out in July 2016 in Switzerland, compared to 2008 for girls.

6.2.11 Emergency contraception

Questions included ever using emergency contraception (herself or partner), number of times and reason(s) for use.

For the reasons for use, five possible answers were presented: *emergency contraception is used as main contraception, contraception was forgotten, contraception failed (condom breakage, condom slipping, vaginal ring slipping, patch slipping, diaphragm slipping, contraceptive method failed), the partner refused the condom, other.*

6.2.12 Online sexual activity

We assessed the use of dating websites or applications, date with people met on the Internet, erotic conversation with people online, online pornography, sexting (receiving, sending, sharing with others).

Questions on online dating, erotic conversation and pornography were taken from the IFOP survey[33].

Questions on sexting were inspired by the Sex and Tech survey commissioned by CosmoGirl.com and the National Campaign to Prevent Teen and unplanned Pregnancy[50]. The ways of doing sexting or the supports that could be used for this activity were divided into text-only message, photo and video and actions linked to the activity were divided into receiving, sending and sharing with others. For detailed questions, visual support (photo and video) were combined to reduce the number of questions. Development questions concerned reason(s) and motivation(s), partners (senders, addressee), reaction (e.g. amused versus angry) and appearance (apparent face, nudity, etc.). As we used the term sexy to define this kind of messages, we defined this term with a broad meaning that was then analysed with the questions: sexually suggestive, sexually implicit, nude, semi-nude, dressed, flirtatious, etc. In the same line, the ways of transmitting and exchanging electronically this kind of messages were also broadly defined: SMS, Whatsapp, Periscope, Snapchat, e-mail, Webcam, etc.)

6.2.13 Sexual transactions

Questions on sexual transactions were taken from a study[117] conducted in Quebec in which two main questions were developed: *"Have you ever received something (money, drugs, alcohol, gifts or other) in exchange for sexual contact (touching, oral sex, intercourse, or another activity of a sexual nature)?*", and *"Have you ever given something (money, drugs, alcohol, gifts or other) in exchange for sexual contact (touching, oral sex, intercourse, or another activity of a sexual nature)?*" Possible answers ranged from never to more than 10 times.

In additional questions for those who answered positively, we also asked about the type of gift that was received or given and person involved in the transaction.

6.2.14 Sex education

Two questions were asked on general sexuality information. First, *Who mainly talked to the participant about sexuality during their childhood and adolescence*? This question and the possible answers were inspired by a book on the psychology of youth sexuality that includes a chapter on education and knowledge transfer[118].

Second, a question was asked on theme(s) that was/were lacking in sex education according to the participants. The different themes were taken from the recommendation of the World Health organisation (WHO) on sexual education in Europe[119].

6.2.15 Gender identity

A question on gender identity was asked and additional questions on sex assigned at birth, surgery operation and hormonal treatment were asked if the answer to the gender identity question was trans woman, trans man or other.

For gender identity, possible answers were: *feminine (you feel fully woman), masculine (you feel fully man), trans woman (even if you feel fully woman, answer this if you have or have had a trans process in your life as questions will be adapted), trans man (even if you feel fully man, answer this if you have or have had a trans process in your life as questions will be adapted), other.*

If participants answered yes to the question on surgery operation, several types of operation were offered: *male torso creation (mastectomy), breast augmentation, removal of the uterus (hysterectomy), removal of the ovaries (oophorectomy), clitoral development (metoidioplasty), penis creation (phalloplasty), vagina creation (vaginoplasty), other.*

All these questions were proposed by a specialist on the issue of transgender persons.

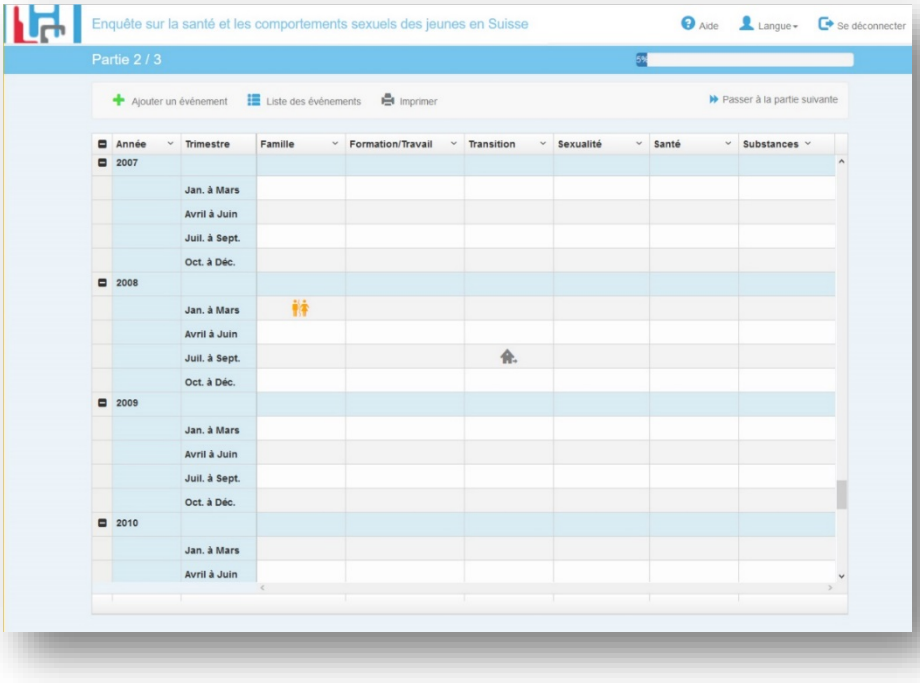
6.3 Data online collection tool

To the best of our knowledge, no freely available tool did exist to conduct an online survey including a life history calendar (LHC). Therefore, a computer science society (Abiris) was mandated to develop a new survey tool. A prototype version was successfully tested with students of the University of Lausanne in December 2014 (see Morselli et al.[120] for details). Then, on the basis of this first experiment, the full version of the tool was developed. The survey tool can combine one or several parts of traditional questions (multiple choice items, combo boxes, dates, numbers, free text fields) with a special part consisting in a LHC. In the case of this study on sexuality, the final questionnaire was made of three separate parts, the first and third ones being traditional, and the second one being a LHC.

The LHC itself looked like a calendar with a time resolution of one quarter (e.g. January to March, April to June, …) (Figure 1).

Each row was a quarter and each column was one different domain of life (six domains in this case). The starting point of the calendar was the birth quarter (based on the month of birth asked in the first part of the questionnaire), and it ended with the current quarter (at the time of the survey). By clicking on a cell of the calendar, the respondents could add a specific event and this event was then displayed as an icon (a different icon for each event). Some events could be placed only once on the calendar (e.g. first sexual relationship), while others could be placed several times (e.g. birth of a child, hospitalization, etc.). In the first part of the survey, some questions were directly related to events, and thus they were automatically displayed at the right place on the LHC as reference points for the other events. A small pop-up was displaying the name of each event when passing the screen pointer upon the icon.

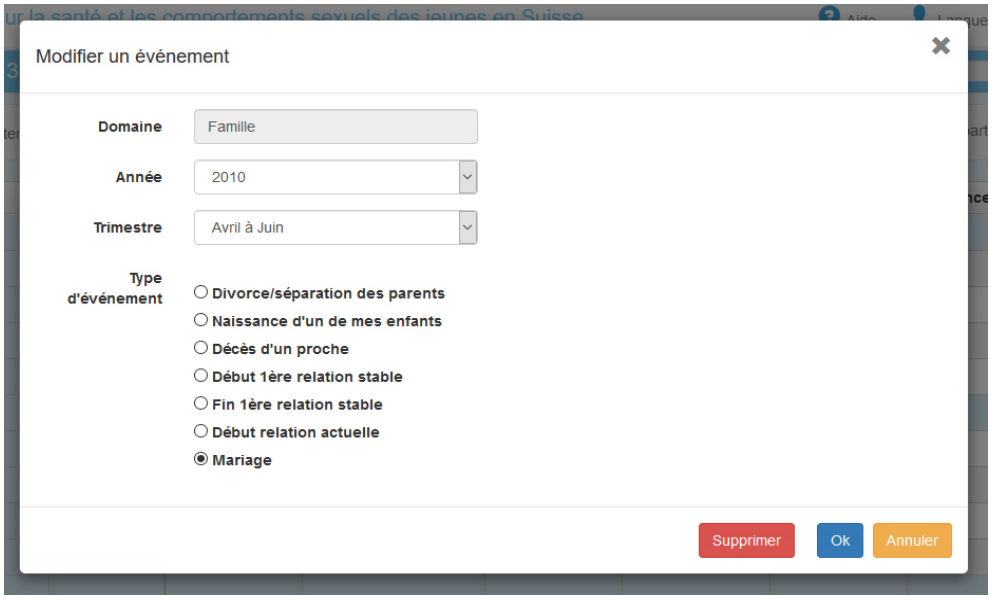
Figure 1 Life history calendar window



Each event displayed on the calendar could then be edited, for either moving it to a different quarter, changing the event (e.g. replacing “marriage” by “beginning of the 1st steady relationship”) or deleting the event (Figure 2).

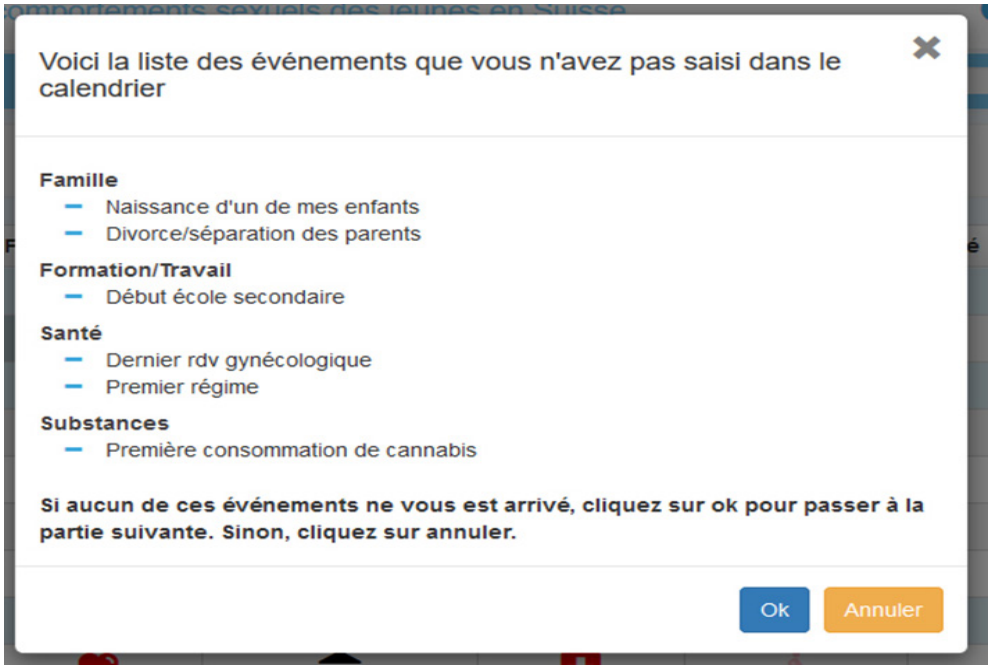
In addition to directly clicking on the calendar, it was also possible to add a new event by clicking on a dedicated button at the top of the main screen, and selecting the event and its time of occurrence in a pop-up window. Similarly, it was possible to obtain a list of all possible events by clicking on another dedicated button.

Figure 2 **Edition of an existing event**



When respondents had entered all events that occurred during their life, they could click to the "go to the next part" button to continue to the third part. Before really quitting the LHC, the list of remaining events not entered on the calendar was displayed, and the respondents had the possibility to go back to the LHC in the case they forgot something (Figure 3). However, once part 3 reached, they could not go back to the LHC.

Figure 3 **Last window before leaving the LHC**



The survey tool was developed with a responsive design in order to be usable both on computers and on tablets. Theoretically, it could also be used on smartphones, but due to the very small screen size of these devices, the LHC part was not user-friendly enough and therefore very difficult to answer. Respondents were informed of this problem and we advised them to use larger screens to participate to the study in the information letter.

The entire questionnaire could be completed by the participants at once or on multiple occasions, answers being saved regularly on a secured server.

6.4 Sampling and data collection

The initial sample was provided by the Swiss Federal Office of Statistics, and it was representative of the entire population living in Switzerland in terms of sex, language, and canton of residence. This sample included 49'798 individuals aged between 24 and 26 years old on 30 September 2016 (birthdate between 01 October 1989 and 30 September 1992). This age range was selected in order to be sure that the majority of the contacted people would be already sexually active and at the same time sufficiently young to be able to recall accurately the beginning of their sexual life.

Starting on 8th June 2017, a first invitation letter was sent to 10'000 individuals. To allow adjustments in case of problems, the remaining letters were sent in two different waves (9 June and 30 June). Depending on the canton of residence, the letter was sent either in French and German, or in Italian and German. The letter explained the goals of the study and the security rules / confidentiality concerns, and provided a link to the website www.lesados.ch to access the online questionnaire, and a unique randomly created 8-character ID required to enter the questionnaire. Moreover, about 44'820 letters also contained a gift of a very small value (less than 1 Swiss franc): a pen with the name of the website lesados.ch and the message "Thank you" translated in the three main Swiss languages. The remaining letters (4978) did not contain a pen because these letters were supposed to be sent only if the response rate was not good. Thus, we did not order pens for this batch. Furthermore, out of the 44'820 pens, several broke and could not be included in the letters. However, as we had commissioned a company to place the pens in the envelopes, we do not know the exact number of broken pens.

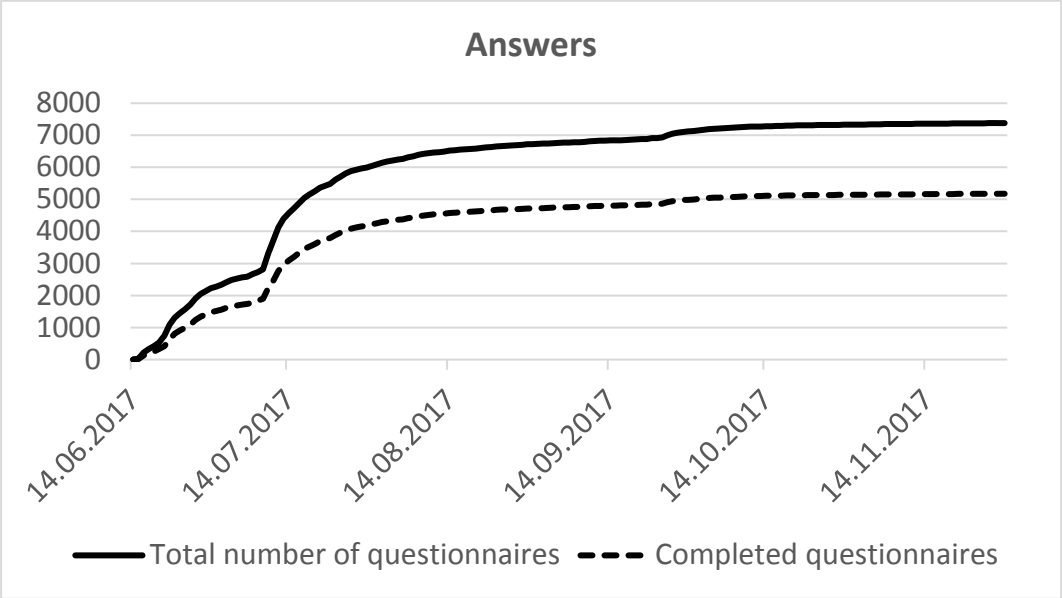
At the time of sending the invitation letter, the study was publicized using a press release and reprinted by several newspapers throughout Switzerland. Online social networks were also used.

The initial goal was to obtain 10'000 answers, but it rapidly appeared that respondents were more reluctant than anticipated to participate in the survey. Moreover 2'402 (4.8%) letters were returned by the postal service, because participants were not living at the address anymore (move or death), 12 (0.02%) e-mails were sent by parents or caregivers to inform that the person was disabled, had gone abroad or did not speak any of the three languages, and 16 (0.03%) letters were returned by participants themselves to say that they did not want to participate. The number of letters that were returned by the postal service is not so surprising as this age range is very mobile (studies, independence, etc.). In addition, the Swiss Federal Office of Statistics updates its data only three times a year with information provided by municipalities of residence. This may explain a possible

lag in the accuracy of addresses provided. Furthermore, not all participants did complete the survey entirely, a quite large number answering only the first part, or stopping at the beginning of the third part, often without really filling in the LHC. Figure 4 shows the evolution of the number of answers. The solid line indicates the total number of answers, and the dashed line indicates the number of respondents with complete answers.

In September 2017, it was decided to send a reminder to 10'000 people randomly chosen among the ones having not answered yet and not being part of the returned letters. This explains the small burst appearing on Figure 4 near the end of September. For this batch, 220 letters were returned by the postal service (2.2%) and one (0.01%) participant sent a letter refusing to participate. Data collection ended on November 26, 2017.

Figure 4 **Evolution of the response rate**



The final sample included 7'142 people aged between 24 and 26 years and living in Switzerland at the time when the addresses were delivered (30 September 2016). This corresponds to a response rate of 15.1%. Among them 5'618 individuals completed the entire questionnaire or at least a significant part of it (11.9%, or 78.7% of all respondents). This relatively lower than expected participation rate can be explained by several factors. First of all, the subject of the study (sexuality) is still a taboo for many people. Then the questionnaire was very long (especially its third part), and the second part, the LHC, was very unusual. Moreover, some participants not having a computer at their disposal may have problems answering to the LHC, due to the smaller screen size of other Internet connected devices. Participants were contacted by postal mail only (we did not have access to their email or phone number), and they had to type the address of the website, instead of just

clicking on a link. In addition, they had to type their id (8 characters) to enter the questionnaire. The majority of participants were contacted only once, without reminder letter and, finally, the timing of the study, including the holiday period of July and August was not ideal.

6.5 Weightings

A coherence analysis was performed to judge the overall quality of the data. In practice, we relied on several questions that were asked twice in the questionnaire (LHC and 3rd part). For instance, the consumption of tobacco, alcohol and cannabis was asked both in the LHC (time of first and last consumption of each of these substances), and at the end of the third part of the questionnaire. Globally, very few inconsistencies were found, so the data could be considered as accurate.

Even if the original sample provided by the Swiss Office of Statistics was representative of the population under study, it is always possible to have a response rate different between some specific categories of people. Therefore, it was necessary 1) to check whether the main characteristics of the population were correctly reproduced into the sample, 2) if required, to compute a set of weights to correct the sample according to these characteristics. In our case, after computing the distribution of the main socio-demographic variables available in the survey and for which the true population-level distribution was known, we had to correct the sample distribution using weights for two characteristics: sex and canton of residence, because females from the French part of Switzerland were overrepresented in the participants. A few number of individuals indicated "other" as sex. Since no reliable statistics do exist in Switzerland regarding the number of transgender individuals, we chose to fix the weight for these people to one.

Weights were computed for all respondents having either completed the questionnaire entirely (even if they omitted some questions), or abandoned during the third part of the questionnaire. Weights were computed slightly differently for these two categories of respondents in order to allow the user to utilise the entire sample of participants over the questions of the first two parts, but also to use the correct weights that omit the non-respondents when analysing the third part of the questionnaire. Final weights range between 0.25 and 2.74, but 90% of the weights are comprised between 0.65 and 1.51.

Two specific filter variables were also computed, one to identify all respondents having completed the questionnaire until its end, and another one adding participants who abandoned during the third part of the questionnaire. For this report, as we are interested in each question separately, we always used all weighted data from those who answered the question, regardless if they had finished the questionnaire or not.

6.6 Ethical aspects

Legal and ethical requirements were taken into account in the study. The participants were informed about the aims of the survey in the information letter and again on the website. Data were completely made anonymous by deleting the id code. The questionnaire was filled out on the

Internet and every participant had a random personal access code that allowed him/her to connect to the questionnaire. This also prevented the participants from filling out the questionnaire more than once. All data were saved on a secured server hosted by the University of Geneva.

The Ethics committee in research of the canton of Vaud (CER-VD) reviewed the research documents and indicated that they were in accordance with Swiss law.

7

Results

7 Results

7.1 Sociodemographics

The final sample was almost equally divided by gender, with a mean age slightly over 26 years. Almost 70% of the sample was German-speaking, 28% French and 4% Italian. In two-thirds of the cases, their parents lived together and 53% of participants lived in an urban area. Sixteen percent of the sample reported a below average family socioeconomic status at the age of 15. The vast majority (91%) had siblings (Table 1).

Table 1 Sociodemographic data by sex and overall

	Female		Male		Total	
	n	%	n	%	n	%
Sex[a]						
Female	2746	49.0				
Male			2864	51.0		
Mean age (±.s.e.)	2734	26.3±.02	2856	26.4±.02	5591	26.3±.01
Linguistic regions						
German	1886	68.7	1976	69.0	3862	68.8
French	760	27.7	785	27.4	1545	27.5
Italian	99	3.6	104	3.6	203	3.6
Swiss-born	2409	87.7	2528	88.3	4937	88.0
Left parental home	2242	81.7	2037	71.1	4279	76.3
Mother Swiss-born	2057	74.9	2158	75.3	4214	75.1
Father Swiss-born	2075	75.6	2156	75.3	4230	75.4
Parents country of birth						
2 Swiss-born	1855	67.5	1942	67.8	3797	67.7
2 non Swiss-born	469	17.1	493	17.2	962	17.1
1 Swiss & 1 non Swiss-born	422	15.4	430	15.0	852	15.2
Parental situation (together)	1811	66.0	1897	66.3	3708	66.1
Residence area (urban)	1478	53.8	1483	51.8	2961	52.8
Family SES[b] **(at the age of 15)**						
Below average	459	18.8	422	15.1	881	16.0
Average	1733	64.2	1722	61.6	3454	62.9
Above average	506	17.0	652	23.3	1158	21.1
Siblings						
None	256	9.3	252	8.8	509	9.1
1	1150	41.9	1282	44.7	2432	43.3
2	837	30.5	855	29.9	1693	30.2
3 or more	502	18.3	474	16.6	977	17.4

Half of the sample had performed university studies, one-fourth had done an apprenticeship, and less than 2% attended only mandatory school. Most of the respondents worked full (53%) or part-time (15%) and 22% were students (Table 2).

[a] Question on the sex of respondents also included a free-text area for the category "Other". Data about the participants in this category (n=10) are presented in the Gender identity chapter.

[b] Socio-economic status

Table 2 Educational and professional data by sex and overall

	Female		Male		Total	
	n	%	n	%	n	%
Education (highest level)						
Mandatory school	37	1.4	55	1.9	92	1.7
Apprenticeship	562	20.5	780	27.2	1343	24.0
Vocational Diploma	249	9.1	299	10.5	548	9.8
Intermediate School Certificate	119	4.3	122	4.3	241	4.3
High School Diploma	186	6.8	224	7.8	411	7.3
University	1500	54.7	1277	44.6	2777	49.5
Other	90	3.3	106	3.7	196	3.5
Current professional / educational activity						
Full-time job	1343	49.0	1622	56.7	2965	52.9
Part-time job	531	19.3	297	10.4	828	14.8
Disability / survivor's insurance	19	0.7	15	0.5	34	0.6
Housewife/husband	51	1.8	2	<0.1	53	0.9
Student	574	20.9	675	23.6	1249	22.3
Unemployed	38	1.4	38	1.3	77	1.4
Social assistance	7	0.3	14	0.5	21	0.4
Job search	92	3.4	99	3.5	192	3.4
Other	88	3.2	99	3.5	187	3.3

Almost two-thirds lived with a partner (although rarely married) and one-third was single. Only 6.5% of females and 3.7% of males had children, most of them only one. The mean age at first child was 24 years for both gender (Table 3).

Table 3 Personal situation (relationship-children) by sex and overall

	Female		Male		Total	
	n	%	n	%	n	%
Current relationship situation						
Single	787	28.7	1179	41.2	1966	35.1
With partner, unmarried	1588	57.9	1492	52.2	3081	55.0
Married	313	11.4	153	5.3	466	8.3
Registered partnership	5	0.2	2	<0.1	7	0.1
Separated	13	0.5	9	0.3	22	0.4
Divorced	9	0.3	2	<0.1	11	0.2
Dissolved partnership	1	<0.1	0	0.0	1	<0.1
Widower	0	0.0	3	0.1	3	<0.1
Other	27	1.0	19	0.7	46	0.8
Children						
None	2532	93.5	2715	96.3	5248	94.9
1	123	4.5	76	2.7	199	3.6
2 or more	54	2.0	29	1.0	83	1.5
Mean age first child	176	24.1±.17	105	24.2±.24	280	24.1±.14

7.2 General Health

Fewer than 6% considered their health as mediocre or poor, 13.6% (of whom 2.5% limiting their daily activities) reported a chronic condition and 6.1% (2% limiting) a handicap. Females reported more chronic conditions and males slightly more handicaps.

Almost one quarter of the sample was overweight or obese according to self-reported weight and height. Males were more likely to be overweight (24%) than females (14%). On the contrary, there were more females in the underweight category (1.1% vs. 0.4%). Nevertheless, half of females and 57% of males had a good body perception.

It is worth noting that over one-quarter of respondents perceived their puberty as advanced (27%) or delayed (28%) compared to their peers. Females indicated an advanced puberty more often than males (31% vs. 23%).

About one youth in six (16%) reported poor mental health, with females declaring it more often than males (18% vs. 13%).

The mean age at menarche in the sample was 13.4 years and the vast majority of females (95%) had ever had a gynaecological appointment, on average 3 years after menarche (mean age: 16.9 years) (Table 4).

Table 4 General health data by sex and overall

	Female		Male		Total	
	n	%	n	%	n	%
Health status perception						
Excellent or very good	1622	59.4	1856	65.4	3479	62.5
Good	933	34.2	853	29.4	1768	31.8
Mediocre or poor	174	6.4	147	5.2	320	5.7
Chronic disease						
No	2288	83.9	2522	88.9	4811	86.4
Non-limiting	343	12.6	275	9.7	619	11.1
Limiting	97	3.6	40	1.4	137	2.5
Handicap						
No	2568	94.1	2661	93.8	5228	93.9
Non-limiting	105	3.8	124	4.4	230	4.1
Limiting	56	2.1	53	1.8	109	2.0
BMI (mean)	2728	22.3±.06	2838	23.8±.06	5566	23.1±.04
BMI						
Underweight	29	1.1	13	0.4	42	0.7
Normal weight	2225	81.0	2042	71.3	4268	76.1
Overweight	381	13.9	682	23.8	1062	18.9
Obese	93	3.4	101	3.6	194	3.5
Body perception						
Too thin	11	0.4	39	1.4	50	0.9
A little bit too thin	78	2.9	245	8.6	324	5.8
Good	1364	50.0	1604	56.5	2968	53.3
A little bit too fat	1098	40.3	869	30.6	1967	35.4
Too fat	177	6.5	80	2.8	257	4.6
Perceived puberty onset						
Advanced	851	31.2	645	22.7	1496	26.9
On time	1133	41.5	1373	48.4	2505	45.0
Delayed	743	27.3	820	28.9	1563	28.1
Mental health (poor)	497	18.2	378	13.3	875	15.7
Age at menarche (mean)	2661	13.4±.04				
Gynecological appointment (ever)	2604	95.4				
Age at first gynecological appointment (mean)	2602	16.9±.06				

Eleven percent of females had ever been pregnant and 8% of males declared ever having had a partner pregnant, in both cases on average at 22 years of age. Among females, the pregnancy was mainly continued (57.6%) and in almost 30% of the cases voluntarily interrupted. Among males, pregnancy was continued in 49% of cases and voluntarily interrupted in 42% of them. Interestingly, in the majority of cases in both gender, they did not use contraception the month before the

pregnancy and for 17.5% of females and 26% of males they always used contraception but it failed. While 48% of females wanted to have a child, the same percentage of males did not (Table 5).

Table 5 Pregnancy data

	Female		Male	
	n	%	n	%
Pregnancy ever				
Yes	284	11.0		
No	2310	89.0		
Do not know / not sure	9	0.4		
Pregnancy ever (partner)				
Yes			186	7.9
No			2182	92.1
Do not know / not sure			39	1.6
Age first pregnancy (mean)	284	22.4±.17	186	22.5±.27
First pregnancy…				
Was continued	164	57.6	91	48.7
Stopped spontaneously (miscarriage)	36	12.6	18	9.7
Was interrupted	85	29.8	77	41.5
Use of contraception in the month prior to the first pregnancy				
No contraception	168	59.1	101	54.4
Not on every occasion	52	18.2	37	19.7
Always but it failed	50	17.5	48	25.9
Always	15	5.2	0	0.0
Desire for a child prior to first pregnancy				
Wanted to have a child	133	48.1	71	38.0
Feelings were mixed about having a child	51	18.2	25	13.2
Did not want a child	94	33.7	91	48.8

7.3 Sexually transmitted infections

An important percentage (45%) of youths had ever done an HIV test, with females slightly outnumbering males. The three main reasons cited for testing were sexual or general health check-up and to stop using condoms. Almost all (99.9%) reported a negative result (Table 6).

Table 6 HIV test

	Female		Male		Total	
	n	%	n	%	n	%
HIV testing (ever)	1199	47.1	1140	42.8	2340	44.9
Reasons for testing (multiple choices)						
Pregnancy (herself or partner)	74	6.2	3	0.3	78	3.3
For insurance or traveling	35	3.0	33	2.9	68	2.9
Sexual health check-up	557	46.4	491	43.1	1048	44.8
General health check-up	334	27.8	404	35.5	738	31.5
To stop condoms	439	36.6	375	32.9	814	34.8
Worry	229	19.1	223	19.6	452	19.3
Medical advice	52	4.3	47	4.1	99	4.2
Other	95	7.9	105	9.2	199	8.5
HIV last test result (negative)	1197	100.0	1133	99.7	2331	99.9

Close to one youth in 10 (10%) reported ever having had a diagnosed sexually transmitted infection (STI). Chlamydia infection was the most commonly reported among females and males (Table 7).

Table 7 Sexually transmitted infections

	Female		Male		Total	
	n	%	n	%	n	%
STI (ever)	345	13.6	165	6.2	511	9.8
Chlamydia	132	38.1	73	44.4	205	40.1
Gonorrhea	7	2.0	31	18.8	38	7.4
Syphilis	1	0.2	13	7.8	14	2.6
Genital warts / papillomavirus	117	33.9	42	25.7	160	31.2
Herpes	75	21.6	9	5.7	84	16.5
Viral hepatitis	1	0.2	0	0.0	1	0.2
Do not remember	38	10.9	24	14.3	61	12.0
Other	19	5.4	10	5.9	29	5.6

7.4 Type of relationships

Two thirds of the young adults in our sample were in a steady relationship while 21.5% were seeing no one. Occasional relationships represented a minority of cases, less than 10% among females and 11% among males (Table 8).

Table 8 Current relationship

	Female		Male		Total	
	n	%	n	%	n	%
Current relationship						
None (you see no one)	475	17.5	716	25.4	1190	21.5
Occasional relation / flirt / casual sex / relation without engagement (regular, with the same person)	166	6.1	160	5.7	327	5.9
Occasional relations without engagement (several different persons)	81	3.0	155	5.5	236	4.3
Steady relationship	1923	71.0	1682	59.6	3605	65.2
Steady relationship but occasional sex or romantic relationship with others	46	1.7	96	3.4	142	2.6
Other	19	0.7	11	0.4	30	0.5

Overall 94% of females and 89% of males had ever been in a steady relationship, with around half of them having been in 2 or 3 relationships of this kind. The mean age at first steady relationship was slightly under 18 years. For the majority of females their first steady partner was the same age or older than them while for males if was the same age or younger. Overall, the majority was very (6%) or somewhat (34%) satisfied with this first relationship.

Around three out of every four participants were currently in a steady relationship that had started on average at age 22 years. More than 90% of them were very or somewhat satisfied with this relationship (Table 9).

Table 9 Steady relationships

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime steady partners						
None	166	6.1	320	11.4	487	8.8
1	792	29.2	744	26.4	1536	27.8
2-3	1325	48.9	1276	45.2	2601	47.0
4-7	350	12.9	377	13.4	727	13.1
8-10	44	1.6	46	1.6	90	1.6
More than 10	33	1.2	57	2.0	90	1.6
Age first steady relationship (mean)	2543	17.3±05	2500	17.8±.07	5043	17.6±.04
Participant's first steady partner was…						
Younger	152	6.0	912	36.5	1064	21.1
About the same age	1115	43.9	1181	47.2	2297	45.5
Older	1270	49.9	395	15.8	1666	33.0
Age not remembered	6	0.2	12	0.5	17	0.4
Overall satisfaction first steady relationship						
Very satisfied	720	28.3	656	26.2	1378	27.3
Somewhat satisfied	841	33.1	888	35.5	1732	34.3
Neutral	567	22.3	648	25.9	1217	24.1
Somewhat dissatisfied	296	11.6	230	9.2	527	10.4
Very dissatisfied	119	4.7	78	3.1	198	3.9
Current steady relationship (yes)	1331	77.5	1265	73.5	2596	75.5
Age start current steady relationship (mean)	1331	22.2±.07	1265	22.7±.09	2595	22.4±.06
Overall satisfaction current steady relationship						
Very satisfied	924	69.4	792	62.6	1716	66.1
Somewhat satisfied	320	24.0	389	30.7	708	27.3
Neutral	55	4.2	65	5.1	120	4.6
Somewhat dissatisfied	19	1.4	15	1.2	34	1.3
Very dissatisfied	12	0.9	4	0.3	17	0.6

7.5 Sexual behaviors

The great majority of respondents had ever had sexual partners, most of them between 2 and 7. Among those never having had one, the main reason was not finding the right person for women and not having had the opportunity for men. In a similar way, the vast majority has also had sexual partners in the past 12 months, but in this case it was mainly only one (Table 10).

Table 10 Sexual partners

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime sexual partners						
None	122	4.6	163	6.0	285	5.3
1	424	16.0	359	13.1	783	14.6
2-3	576	21.8	540	19.7	1117	20.7
4-7	660	25.0	700	25.6	1360	25.3
8-10	305	11.5	294	10.7	599	11.1
More than 10	557	21.1	680	24.9	1237	23.0
Reason for never having sexual partner						
Did not have the opportunity	19	15.6	77	47.4	96	33.8
Did not find the right person	53	43.7	30	18.1	83	29.1
Moral or religious reasons	14	11.6	18	11.3	32	11.4
Want to wait to be older	1	0.6	0.0	0.0	1	0.3
Want to wait to be married	22	18.1	21	13.1	43	15.2
Fear of pregnancy	0	0.0	1	0.6	1	0.4
Fear of transmissible sexual infection	0	0.0	0	0.0	0	0.0
Not emotionally ready	9	7.0	5	3.1	14	4.8
Do not feel comfortable with my sex	0	0.0	1	0.7	1	0.4
Other	4	3.4	9	5.7	13	4.7
Last 12 months sexual partners						
None	103	4.1	203	7.9	306	6.0
1	1867	74.2	1601	62.4	3467	68.2
2-3	374	14.9	438	17.1	813	16.0
4-7	145	5.7	215	8.4	359	7.1
8-10	16	0.6	49	1.9	65	1.3
More than 10	12	0.5	60	2.3	72	1.4

Over 70% of males and females had ever had casual sexual partners, but the percentage decreased to around only one quarter in the last 30 days. Regarding the degree of satisfaction with their last casual sexual partner, around one third were somewhat satisfied and another third neutral (Table 11).

Table 11 Casual sexual partners

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime casual sexual partners						
None	729	29.0	636	24.8	1364	26.9
1	363	14.4	360	14.0	723	14.2
2-3	604	24.0	619	24.2	1224	24.1
4-7	423	16.8	447	17.5	870	17.1
8-10	162	6.4	131	5.1	293	5.8
More than 10	236	9.4	369	14.4	604	11.9
Last 30 days casual sexual partners						
None	1356	75.8	1396	72.7	2752	74.2
1	361	20.2	367	19.1	728	19.6
2-3	64	3.6	115	6.0	179	4.8
4-7	6	0.3	33	1.7	39	1.1
8-10	1	<0.1	3	0.2	4	0.1
More than 10	1	<0.1	6	0.3	7	0.2
Overall satisfaction last casual sexual partner						
Very satisfied	266	14.9	354	18.3	620	16.7
Somewhat satisfied	522	29.2	683	35.6	1205	32.5
Neutral	603	33.8	627	32.4	1231	33.1
Somewhat dissatisfied	239	13.3	185	9.7	424	11.4
Very dissatisfied	157	8.8	77	4.0	234	6.3

The majority of respondents (86%) had only heterosexual contacts, however 15% of females and 13% of males having had homosexual or bisexual contacts. Among them, the first sexual contact was mainly with someone of the opposite sex. The proportion of males reporting only homosexual experiences (3.4%) was higher than among females (1.0%). The mean age at first sexual contact was just under 17 years. As in the other cases, the partner was mainly the same age or older for women and same age or younger for men (Table 12).

Table 12 Any sexual contact

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime sexual contact (with/out penetration (caress, fingered, fellatio, cunnilingus, vaginal/oral penetration, etc.)						
Only with woman/women	24	1.0	2217	86.8	2241	44.3
Only with man/men	2121	84.8	87	3.4	2209	43.7
With women and men	357	14.2	250	9.8	606	12.0
Age first sexual contact (mean)	1689	16.9±.08	1649	16.4±.06	3338	16.7±.05
Partner first sexual contact was…						
Younger	117	4.7	685	26.8	802	15.8
About the same age	1127	45.0	1213	47.4	2340	46.2
Older	1239	49.5	620	24.3	1859	36.8
Age not remembered	20	0.8	38	1.5	59	1.2
First time with man / woman[c]						
Man	320	90.0	59	23.7	379	62.8
Woman	36	10.0	189	76.3	225	37.2

Almost all respondents had ever had oral sex, most of them (90%) with an opposite-sex partner. Mean age at first time was around 18 years (Table 13).

Table 13 Oral sex

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime oral sex						
Never	81	3.3	99	3.9	180	3.6
Only with woman/women	36	1.4	2175	85.3	2211	44.0
Only with man/men	2167	87.4	122	4.8	2289	45.5
With women and men	197	7.9	152	6.0	349	6.9
Age first oral sex (mean)	1823	17.8±.06	1964	18.0±.08	3787	17.9±.05
First time with man / woman[c]						
Man	165	84.1	48	32.4	214	61.8
Woman	31	15.9	101	67.6	132	38.2

[c] Only for those who answered *With men and women*

The vast majority had had vaginal sex and half of respondents had it at least weekly. Mean age at first vaginal sex was under age 18 years for both gender, mainly with a steady partner. About two-thirds of them thought that it happened at the right moment. The most cited reason to start vaginal sex was being in love, followed by curiosity. While 64% of males found this first experience pleasant or very pleasant, for 69% of females it was very unpleasant, unpleasant or just neutral (Table 14).

Table 14 Vaginal sex

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime vaginal sex						
Never	48	1.9	189	7.4	237	4.7
Only with woman/women	27	1.1	2352	92.6		
Only with man/men	2303	92.4				
With women and men	115	4.6				
Frequency vaginal sex						
Rarely (3 or 4 times per year or less)	200	8.2	320	13.6	520	10.8
Sometimes (1 to 4 times per month)	1021	41.8	795	33.8	1816	37.9
More than once a week	1082	44.2	1005	42.7	2087	43.5
Almost everyday	121	5.0	176	7.5	297	6.2
I only do it once	21	0.8	57	2.4	78	1.6
Age first vaginal sex (mean)	2267	17.4±.05	2050	17.8±.07	4317	17.6±.04
First vaginal sex in a…						
Steady relationship	1801	73.7	1452	61.8	3252	67.9
Casual sex relationship	642	26.3	898	38.2	1540	32.1
Reaction to first vaginal sex						
Should not have done it	227	9.3	94	4.0	320	6.7
Should have waited longer	267	10.9	101	4.3	369	7.7
Should not have waited so long	73	3.0	280	11.9	353	7.4
It was the right moment	1642	67.2	1613	68.7	3255	67.9
Do not know	235	9.6	261	11.1	496	10.3
Motivation for first vaginal intercourse						
Was in love	1371	56.1	1007	42.9	2378	49.6
Was curious, to try	677	27.7	911	38.8	1588	33.1
To do like others	43	1.7	24	1.0	66	1.4
Was forced	28	1.2	7	0.3	35	0.7
Under the influence of a substance (alcohol, cannabis, etc)	60	2.4	82	3.5	142	3.0
To lose virginity	134	5.5	225	9.6	358	7.5
Bet with friends	0	0.0	0	0.0	0	0.0
Did it but did not want to	49	2.0	8	0.3	57	1.2

	Female		Male		Total	
	n	%	n	%	n	%
Do not remember	36	1.5	47	2.0	82	1.7
Other	47	1.9	38	1.6	85	1.8
Perception of first vaginal intercourse						
Very pleasant	160	6.6	518	22.1	678	14.2
Pleasant	525	21.6	1001	42.7	1525	32.0
Neither pleasant nor unpleasant	998	41.1	587	25.1	1585	33.2
Unpleasant	465	19.1	135	5.8	600	12.6
Very unpleasant	207	8.5	35	1.5	242	5.1
I do not remember	74	3.1	67	2.9	141	3.0

The same percentage of females and males (49%) reported ever having had anal intercourse, on average at almost 22 years of age. Anal sex was practiced rarely and the first time it was part of a steady relationship. The majority reported having done it for the first time at the right moment and curiosity was the main reason for it. Again, there was a gender difference about how the experience was felt: while 72% of women found it unpleasant, very unpleasant or neutral, two-thirds of men found it pleasant or very pleasant (Table 15).

Table 15 Anal sex

	Female		Male		Total	
	n	%	n	%	n	%
Lifetime anal intercourse						
Never	1259	51.0	1289	51.0	2548	51.0
Only with woman/women	17	0.7	1037	41.0	1055	21.1
Only with man/men	1183	47.9	148	5.9	1331	26.6
With women and men	10	0.4	54	2.1	64	1.3
Age first anal sex (mean)	830	20.9±.10	917	20.8±.13	1747	20.8±.08
Frequency anal sex						
Rarely (3 or 4 times per year or less)	653	54.0	697	56.2	1351	55.1
Sometimes (1 to 4 times per month)	139	11.5	204	16.5	343	14.0
More than once a week	14	1.1	52	4.2	66	2.7
Almost everyday	0	0.0	8	0.6	8	0.3
I only do it once	404	33.4	279	22.5	682	27.9
First anal sex done in a…						
Steady relationship	955	79.0	822	66.3	1777	72.6
Casual sex relationship	254	21.0	417	33.7	671	27.4

	Female		Male		Total	
	n	%	n	%	n	%
Reaction to first anal sex						
Should not have done it	168	13.9	66	5.3	234	9.5
Should have waited longer	40	3.3	28	2.2	68	2.8
Should not have waited so long	11	0.9	145	11.7	156	6.4
It was the right moment	717	59.3	772	62.3	1489	60.8
Do not know	273	22.6	230	18.5	503	20.5
Motivation for first anal intercourse						
Was in love	179	14.8	102	8.2	281	11.5
Was curious, to try	782	64.7	1053	84.9	1835	74.9
To do like others	5	0.4	0	0.0	5	0.2
Was forced	27	2.2	2	0.2	29	1.2
Under the influence of a substance (alcohol, cannabis, etc)	43	3.5	23	1.9	66	2.7
Bet with friends	1	<0.1	3	0.2	3	0.1
Did it but did not want to	117	9.6	7	0.6	124	5.1
Do not remember	34	2.8	21	1.7	54	2.2
Other	22	1.9	29	2.4	52	2.1
Perception of first anal intercourse						
Very pleasant	70	5.8	333	26.9	402	16.5
Pleasant	245	20.4	485	39.3	729	30.0
Neither pleasant nor unpleasant	303	25.3	306	24.8	609	25.0
Unpleasant	340	28.3	70	5.6	410	16.8
Very unpleasant	216	18.0	17	1.4	233	9.6
I do not remember	26	2.2	25	2.0	51	2.1

One third of males and 43% of females declared never having had sexual intercourse without future, and those having had 3-way intercourse (two partners at the same time) or group sex (more than two partners at the same time) experiences were a small minority. However, those having ever had intercourse with someone met on the Internet accounted for 22% of females and 35% of males. More than half of males (56%) and 46% of females had ever had intercourse while intoxicated (Table 16).

Table 16 Sexual experiences

	Female		Male		Total	
	n	%	n	%	n	%
Sexual intercourse without future						
Often	153	6.1	282	11.0	435	8.6
Sometimes	438	17.4	559	21.8	997	19.6
Rather rarely	846	33.7	871	34.0	1717	33.8
Never	1076	42.8	853	33.3	1930	38.0
3-way intercourse (2 partners at the same time)						
Often	3	0.1	9	0.3	12	0.2
Sometimes	38	1.5	68	2.7	107	2.1
Rather rarely	202	8.1	328	12.8	531	10.5
Never	2270	90.3	2161	84.2	4431	87.2
Sexual intercourse with more than 2 partners at the same time (group sex, orgy)						
Often	0	0.0	3	<0.1	3	<0.1
Sometimes	11	0.4	29	1.1	40	0.8
Rather rarely	47	1.9	108	4.2	155	3.0
Never	2456	97.7	2425	94.6	4882	96.1
Sexual intercourse with someone you meet on the Internet						
Often	62	2.5	169	6.6	231	4.6
Sometimes	171	6.8	313	12.2	484	9.5
Rather rarely	333	13.2	421	16.4	754	14.8
Never	1947	77.5	1663	64.8	3610	71.1
Sexual intercourse after excessive consumption of drugs or alcohol						
Often	66	2.6	117	4.5	183	3.6
Sometimes	363	14.5	490	19.1	854	16.8
Rather rarely	724	28.8	839	32.7	1563	30.8
Never	1359	54.1	1120	43.7	2480	48.8

The vast majority of respondents had used some kind of contraception at their first intercourse, mainly male condoms (even if they were also using the contraceptive pill in almost two out of every 5 cases) (Table 17).

Table 17 Contraception / protection during the first intercourse

	Female		Male		Total	
	n	%	n	%	n	%
Contraception / protection first intercourse						
None	157	6.3	186	7.3	343	6.8
Male condom	2078	83.5	2153	84.7	4231	84.1
Contraceptive pill	987	39.7	917	36.1	1904	37.9
Vaginal ring	79	3.2	105	4.1	184	3.6
Patch	11	0.4	21	0.8	33	0.7
Implant or injections	13	0.5	35	1.4	48	1.0
Female condom	3	0.1	8	0.3	11	0.2
Chemical means (cream, eggs, sponge), diaphragm	3	0.1	5	0.2	8	0.1
Withdrawal (interruption before ejaculation)	60	2.4	58	2.3	118	2.3
IUD	41	1.6	101	4.0	142	2.8
Natural methods (temperature, calculation)	34	1.3	23	0.9	57	1.1
I do not know / remember	14	0.5	20	0.8	33	0.7
Other	11	0.5	3	0.1	15	0.3

However, at last intercourse contraception methods were more equally distributed between male condom and contraceptive pill. As for the type of contraception used at first sexual intercourse, all other contraception methods represented less than 5%, with the exception of IUD and vaginal ring (Table 18).

Table 18 Contraception / protection during the last intercourse

	Female		Male		Total	
	n	%	n	%	n	%
Contraception / protection last intercourse						
None	266	10.7	309	12.2	575	11.4
Male condom	1228	49.3	1497	59.0	2726	54.2
Contraceptive pill	1089	42.9	1195	48.0	2284	45.4
Vaginal ring	212	8.4	287	11.5	499	9.9
Patch	16	0.6	21	0.8	37	0.7
Implant or injections	37	1.5	50	2.0	87	1.7
Female condom	6	0.2	4	0.2	10	0.2
Chemical means (cream, eggs, sponge), diaphragm	7	0.3	8	0.3	15	0.3
Withdrawal (interruption before ejaculation)	55	2.2	58	2.3	114	2.3
IUD	206	8.1	264	10.6	470	9.3
Natural methods (temperature, calculation)	78	3.1	53	2.1	130	2.6
I do not know / remember	7	0.3	27	1.1	34	0.7
Other	20	0.8	13	0.5	33	0.7

7.6 Sexual orientation

Around 90% of both males and females reported being only or strongly attracted to people of the opposite sex, while two thirds of males and 58% of females reported being only attracted to people of the opposite sex. Females (9.7%) slightly outnumbered males (7.3%) in reporting any degree of same sex attraction or an attraction not affected by gender. It is worth noting that 0.6% of females and 0.4% of males declared not feeling attracted to anyone (Table 19).

Table 19 Sexual or affective attraction

	Female		Male		Total	
	n	%	n	%	n	%
Only attracted to people of the opposite sex	1513	58.2	1795	66.4	3308	62.4
Strongly attracted to people of the opposite sex	795	30.6	683	25.3	1479	27.9
Attracted by both men and women	135	5.2	47	1.7	182	3.4
Strongly attracted to people of the same sex as me	20	0.7	48	1.8	67	1.3
Only attracted to people of the same sex as me	29	1.1	75	2.8	104	2.0
The gender of the person does not affect my attraction	67	2.6	26	1.0	93	1.8
Not feeling attracted to anyone	16	0.6	9	0.4	26	0.5
Unknown / not sure	26	1.0	17	0.6	44	0.8

Ninety-two percent of participants described themselves as heterosexuals, slightly more than 6% as homosexuals or bisexuals, 1.6% did not know and 0.6% (N=29) indicated the option *other*. While males outnumbered females in describing themselves as homosexuals, the reverse was true for bisexuality or being unsure (Table 20).

Table 20 Sexual orientation identity

	Female		Male		Total	
	n	%	n	%	n	%
Heterosexual	2380	91.6	2491	91.7	4871	91.7
Lesbian / Gay	34	1.3	117	4.3	151	2.8
Bixesual	113	4.3	65	2.4	177	3.3
Unknown / not sure	57	2.2	29	1.1	86	1.6
Other	16	0.6	14	0.5	29	0.6

A multidimensional variable was created to assess sexual orientation combining the three dimensions: attraction, sex of lifetime sexual partners and sexual orientation identity. When combining these three indicators, 17% of participants were categorized as having a non-exclusively heterosexual orientation (i.e. they chose a response option categorized as “other than heterosexual” in at least one of the three dimensions) (Table 21).

Table 21 Multidimensional measurement of sexual orientation

	Female		Male		Total	
	n	%	n	%	n	%
Attraction						
Heterosexual (only or strongly attracted to people of the opposite sex)	2308	89.3	2479	92.1	4787	90.7
Non-heterosexual	276	10.7	213	7.9	490	9.3
Sex of sexual partners						
Heterosexual (only sexual partners of the opposite sex)	2121	84.8	2217	86.8	4339	85.8
Non-heterosexual	381	15.2	337	13.2	718	14.2
Identity						
Heterosexual (self-identifying as heterosexual)	2380	92.1	2491	92.2	4871	92.2
Non-heterosexual	204	7.9	210	7.8	414	7.8
Multidimensional variable						
Exclusively heterosexual	1938	80.3	2117	85.6	4055	83.0
Non-exclusively heterosexual	475	19.7	357	14.4	831	17.0

7.7 Sexual dysfunctions / problems

About one female in nine reported a sexual dysfunction. Among males, 17.5% indicated premature ejaculation and the same percentage erectile dysfunction. Among the latter, 15% were reported to be mild and <0.1% severe (Table 22).

Table 22 Sexual dysfunctions

	Female		Male		Total	
	n	%	n	%	n	%
Female dysfunctions	227	11.4				
Erectile dysfunction						
Severe			1	<0.1		
Moderate			11	0.5		
Mild to moderate			43	2.0		
Mild			318	14.9		
None			1764	82.5		
Premature ejaculation			394	17.5		

Many more females than those reporting a sexual dysfunction indicated ever looking for help or information about sexual troubles or problems. Their main information resource was the Internet, followed by a gynecologist. For males, the main resource was by far the Internet (86%). Ten percent of females and 13% of males indicated that the help they received was not helpful at all (Table 23).

Table 23 Information on sexual problems

	Female		Male		Total	
	n	%	n	%	n	%
Ever looked for help / information on sexual troubles / problems	596	22.9	435	16.1	1031	19.4
Mean(s) (multiple choice)						
Mother	90	15.2	16	3.8	107	10.4
Father	8	1.4	8	1.9	16	1.6
Friend(s)	202	33.9	89	20.5	291	28.2
Internet	428	71.9	373	85.8	802	77.8
General practitioner	32	5.4	69	15.8	101	9.8
Gynecologist	338	56.7				
Other medical specialist	59	13.7	26	4.4	86	8.3
School doctor	2	0.3	2	0.5	4	0.4
School nurse	2	0.4	1	0.2	3	0.3
Family planning center	43	7.2	16	3.6	59	5.7
Other	2	0.4	1	0.1	3	0.3
The help was helpful						
A lot	180	30.2	82	18.9	262	25.5
A little	344	57.7	285	65.4	629	61.0
Not at all	89	9.8	58	13.4	117	11.3
Do not know	13	2.2	10	2.2	23	2.2

7.8 Medication to enhance sexual performance

Less than 5% of males had ever used medication to enhance their sexual performance, and the main reason for it was curiosity. In half of the cases their partner was aware of it and friends were the providers of the medication in one third of the cases (Table 24).

Table 24 Medication to enhance sexual performance (user)

	Male	
	n	%
Use of medication to enhance sexual performance		
Lifetime	121	4.5
Last 30 days	18	15.2
Reasons for using medication (multiple choices) (n=121)		
Medical prescription	19	15.9
Curiosity	72	59.8
Increase penis stiffness	36	30.2
Decrease time between intercourses	11	9.1
Counter the effects of alcohol / drugs	18	14.7
Increase erectile sensation	12	10.0
Increase libido	14	12.0
Improve self-confidence	21	17.0
Decrease performance anxiety	17	14.2
To impress / satisfy the partner	33	27.0
Other	7	5.4
Partner knows the use of such medication (yes)	61	50.0
How the medication was obtained (n=121)		
Friends	46	37.7
Internet	33	27.6
Doctor	21	17.7
Dealer	12	9.7
Pharmacy	21	17.2
Other	4	3.4

Two percent of females reported ever having a partner who used medication to enhance sexual performance. In one third of the cases the reason to use it was curiosity. Among males having (or having had) sex with men, 2.2% of them indicated ever having a partner who used this kind of medication, also mainly for curiosity (Table 25).

Table 25 Medication to enhance sexual performance (partner of user)

	Female		Male		Total	
	n	%	n	%	n	%
Ever had a partner who used a medication to enhance sexual performance						
Yes	53	2.1	9	2.2	61	2.1
No	2184	88.8	326	82.7	2514	87.9
Do not know	224	9.1	60	15.1	284	9.9
Reasons for using medication (multiple choices)						
Medical prescription	8	14.3	2	26.6	10	16.0
Curiosity	18	34.4	5	63.5	23	38.4
Increase penis stiffness	12	22.7	3	36.3	15	24.6
Decrease time between intercourses	5	10.1	1	11.4	6	10.3
Counter the effects of alcohol / drugs	6	10.7	3	37.9	9	14.5
Increase erectile sensation	10	18.5	1	11.6	11	17.5
Increase libido	6	11.0	3	39.6	9	15.0
Improve self-confidence	4	7.9	0	0.0	4	6.8
Decrease performance anxiety	8	15.3	0	0.0	8	13.1
To impress / satisfy the partner	4	8.1	1	11.4	5	8.6
Do not know	3	5.4	0	0.0	3	4.6
Other	1	1.8	0	0.0	1	1.5

7.9 Unwanted sexual experiences

There was an important difference in lifetime unwanted sexual experiences between females (25%) and males (8%). Females also largely outnumbered males in ever accepting sexual intercourse without really wanting (53% vs. 23%). The main reason cited by females for accepting sexual intercourse without wanting was to have a smooth relationship, while for males it was because their partner expected intercourse (Table 26).

Table 26 USE and sexual intercourse without really wanting

	Female		Male		Total	
	n	%	n	%	n	%
Unwanted sexual intercourses or contacts (ever)						
No	1955	75.2	2470	91.8	4430	83.6
Yes, once	423	16.3	150	5.6	574	10.8
Yes, several times with the same person	115	4.4	45	1.7	160	3.0
Yes, several times with different persons	106	4.1	25	0.9	133	2.5
Ever accepted sexual intercourse without really wanting						
No, never	1224	47.1	2035	77.1	3297	62.3
Yes, once	551	21.2	325	12.3	885	16.7
Yes, several times	824	31.7	280	10.6	1114	21.0
Reason(s) for accepting without really wanting						
Lack of self-confidence	206	15.0	54	8.7	261	13.1
Lack of experience / did not know one's limits yet	225	16.4	52	8.4	277	13.9
To please	418	30.4	153	24.7	572	28.6
So that everything goes well in your relationship	554	40.3	170	27.3	723	36.2
For love	545	39.7	202	32.5	748	37.4
Intimidated by partner (charisma, age, reputation, etc.)	92	6.7	20	3.2	112	5.6
Under influence of a substance	91	6.6	64	10.2	155	7.7
Did not dare to say no	268	19.5	76	12.3	346	17.3
Misunderstanding but no possible come back (ambiguous behavior)	95	6.9	51	8.1	146	7.3
Scared	40	2.9	12	1.9	52	2.6
To thank the person for something	66	4.8	44	7.1	111	5.6
Partner expected to have sexual intercourses	447	32.5	227	36.5	675	33.7
Under pressure (insistence, etc.)	171	12.5	50	8.0	222	11.1
Other reasons	60	4.3	40	6.5	102	5.1

Females also outnumbered males both in ever regretting after having had intercourse (50% vs. 38%) and in ever refusing sexual intercourse to a partner (79% vs. 43%). Both gender mostly indicated that the last time they refused intercourse their partner understood without asking questions (Table 27).

Table 27 Regret and refusal

	Female		Male		Total	
	n	%	n	%	n	%
Ever had sexual intercourses that were regretted after						
Never	1289	49.6	1679	62.4	2973	56.1
Yes once	845	32.5	710	26.4	1555	29.4
Yes several times	465	17.9	302	11.2	769	14.5
Ever refused sexual intercourse to a partner	2062	79.4	1162	43.2	3230	61.0
The last time, the partner…						
Understood without asking any questions	924	44.8	432	37.2	1357	42.0
Understood but asked questions	579	28.1	337	29.0	919	28.5
Understood but was frustrated and/or showed her/his frustration	551	26.7	323	27.8	876	27.1
Moderately understood	146	7.1	102	8.8	248	7.7
Insisted (to convince you)	169	8.2	87	7.5	258	8.0
Made you feel guilty	146	7.1	59	5.1	206	6.4
Did not understand at all and got angry / upset	72	3.5	81	7.0	154	4.8
Said that you do not like her/him anymore	33	1.6	25	2.1	58	1.8
Other	7	0.3	18	1.6	25	0.8

Although very few youths indicated ever having been blackmailed to have sexual intercourse, again females (2.9%) largely outnumbered males (0.6%). The main reason for being blackmailed among females was their partner threatening to leave them (42%), while for males it was threatening to reveal intimate things to others (48%) (Table 28).

Table 28 Blackmail to have sexual intercourse

	Female		Male		Total	
	n	%	n	%	n	%
Ever been blackmailed to have sexual intercourse	76	2.9	18	0.6	94	1.8
Type of blackmail, someone threatened to…						
Post photos/videos of you or information about you on Internet or other support (mobile phone, Facebook, emails, etc.)	11	14.6	3	19.4	15	15.5
Reveal intimate things about you to others	12	16.3	9	48.1	21	22.3
Reveal intimate things about you to your parents	10	13.3	2	14.0	12	13.4
Leave you	32	42.5	5	28.0	37	39.7
Hurt you	20	26.7	5	30.3	25	27.4
Other	15	20.3	2	10.2	17	18.4

Females were five times more likely than males (16% vs. 3%) to report having ever been victim of sexual assault or abuse. The mean age was similar in both genders, just under 15 years (Table 29).

Table 29 Sexual assault/abuse

	Female		Male		Total	
	n	%	n	n	%	n
Ever been victim of sexual assault/abuse	414	15.9	75	2.8	490	9.2
Age first sexual assault/abuse (mean)	413	14.8±.27	75	14.3±.76	488	14.7±.25

7.10 HPV vaccination

Two females out of every 5 and 8% of males had been vaccinated against HPV. However, it is worth noting that half of males and over one-fifth of females did not know whether they had been vaccinated.

The main reasons for not being vaccinated were refusal for females and not being aware of the vaccination among males. For both gender, the main reason to refuse vaccination was an overall opposition to vaccination (Table 30).

Table 30 HPV vaccination

	Female		Male		Total	
	n	%	n	%	n	%
HPV vaccine						
Yes	1032	39.4	208	7.6	1241	23.2
No	1011	38.6	1163	42.7	2178	40.7
Do not know	576	22.0	1352	49.7	1930	36.1
Remember the age of first dose	660	64.1	34	16.8	695	56.3
Age at first dose (mean)	660	17.7±.10	34	19.3±1.2	675	17.7±.12
Reason for non-vaccination (unique choice)						
Unaware of the vaccination	265	26.2	743	63.9	1009	46.3
Refusal	414	40.9	154	13.3	570	26.2
Not in the age range	96	9.5	63	5.4	159	7.3
Already infected with HPV	23	2.2	11	0.9	33	1.5
Discouraged by friends/family	108	10.7	24	2.0	132	6.0
Other	106	10.5	168	14.5	276	12.7
Reason for refusal (unique choice)						
Afraid of side effects	58	14.0	12	7.9	70	12.3
Overall opposition to vaccination	154	37.2	94	61.0	249	43.7
HPV type-restricted protection	144	34.8	31	20.2	175	30.7
Other	58	14.1	17	10.9	76	13.3

7.11 Emergency contraception

Almost half of females had ever used emergency contraception and close to two-fifths of males reported their partner having ever used it. In both cases, the mean number of times was two and for two-thirds of them it was due to a failure in the contraceptive method used. Respondents indicating that they (or their partner) used emergency contraception as their main contraception method were very few (Table 31).

Table 31 Emergency contraception

	Female		Male		Total	
	n	%	n	%	n	%
Emergency contraception ever (herself-partner)	1275	48.9	904	38.1	2179	43.7
Number of times (mean)	1275	2.0±.04	904	1.8±.07	2179	1.9±.03
Reason for use (multiple choices)						
Main contraception	12	0.9	13	1.4		
Missed contraception	398	31.2	279	30.8		
Failed contraception	848	66.5	596	65.9		
Partner refused the condom	81	6.4	56	6.2		
Other	90	7.0	50	5.6		

7.12 Online sexual activity

Males outnumbered females in online sexual activity. They were more likely to have ever surfed on a dating website or application (68% vs. 44%), to have had a date with someone met on the Internet (48% vs. 43%) or to have had an erotic conversation with someone never met in real life (36% vs. 28%). They were also much more likely to have ever surfed on a website to see porn (96% vs. 63%) (Table 32).

Table 32 Online sexual activities

	Female		Male		Total	
	n	%	n	%	n	%
Ever surfed on a dating website or application						
No, never	1473	56.1	1050	38.4	2523	47.1
Yes, once	467	17.8	543	19.9	1010	18.8
Yes, several times	688	26.2	1140	41.7	1827	34.1
Ever had a date with people met on the Internet						
No, never	1504	57.3	1421	52.0	2928	54.5
Yes, once	491	18.7	482	17.6	975	18.2
Yes, several times	632	24.0	830	30.4	1465	27.3
Ever had an erotic conversation with people never met in real life (on the Internet, on the phone, etc.)						
No, never	1884	71.7	1756	64.3	3646	67.9
Yes, once	406	15.5	374	13.7	781	14.5
Yes, several times	336	12.8	602	22.0	941	17.5
Ever surfed on a website to see pornographic movies or images						
No, never	970	36.9	119	4.4	1090	20.3
Yes, once	371	14.1	94	3.4	465	8.7
Yes, several times	1285	48.9	2520	92.2	3811	71.0

Almost 3 out of 4 respondents reported having already sent a sexy text-only message without photo, a sexy photo and / or a video of themselves. This rate included both those who sent only a sexy text-only message, a photo, or a video and those who sent two or three types of these supports. On the other end, almost 80% of participants had already received such messages. There were no gender differences for these two actions.

Finally, 22% reported having already forwarded such messages to other persons without consent. While no gender differences seemed to appear for sending and receiving, males were overrepresented for the dissemination to other persons (Table 33).

Table 33 Sexting

	Female		Male		Total	
	n	%	n	%	n	%
Ever sent a sexy text-only message (without photo), a sexy photo and/or video of oneself	1892	73.4	1937	72.5	3829	73.0
Ever received a sexy text-only message (without photo), a sexy photo and/or video	1984	77.0	2145	80.3	4129	78.7
Ever forwarded a sexy text-only message (without photo), a sexy photo and/or video from another known or unknown person	412	16.0	740	27.7	1152	22.0
Ever sent a sexy text-only message (without photo)	1789	69.4	1891	70.8	3685	70.1
Ever received a sexy text-only message (without photo)	1893	73.4	1999	74.8	3899	74.2
Ever shared / showed a sexy text-only message from another known or unknown person	330	12.8	559	21.0	890	16.9
Ever sent a sexy photo and/or video of oneself	1341	52.0	1299	48.6	2640	50.3
Ever received a sexy photo and/or video	1431	55.5	1834	68.6	3265	62.2
Ever shared / showed a sexy photo and/or video from another known or unknown person	233	9.0	569	21.3	801	15.3

7.13 Sexual transactions

Males were slightly more likely than females (3.7% vs. 2.8%) to have received something or obtained an advantage in exchange of sexual intercourse, but it remained a small minority (Table 34).

Table 34 Sexual transactions (receiving)

	Female		Male		Total	
	n	%	n	%	n	%
Ever received something or obtained an advantage in exchange of a sexual intercourse with a person						
Never	2484	97.2	2556	96.3	5040	96.7
Once	33	1.3	46	1.7	80	1.5
2 or 3 times	21	0.8	33	1.3	55	1.0
4 or 10 times	6	0.2	8	0.3	14	0.3
More than 10 times	10	0.4	11	0.4	22	0.4

On the contrary, males clearly outnumbered females (13% vs. 0.3%) in ever giving something or offering an advantage in exchange of sexual intercourse (Table 35).

Table 35 Sexual transactions (giving)

	Female		Male		Total	
	n	%	n	%	n	%
Ever given something or offered an advantage in exchange of a sexual intercourse with a person						
Never	2547	99.7	2312	87.1	4859	93.3
Once	4	0.2	133	5.0	137	2.6
2 or 3 times	3	0.1	121	4.6	124	2.4
4 or 10 times	0	0.0	41	1.5	41	0.8
More than 10 times	1	<0.1	48	1.8	49	1.0

7.14 Sex education

The main resource for sexual information for both gender were their friends (37%), followed by their mother among females (30%) and school among males (20%) (Table 36).

Table 36 Sexuality educator

	Female		Male		Total	
	n	%	n	%	n	%
Who mainly talked to you about sexuality during your childhood and adolescence						
Mother	769	30.2	396	14.9	1166	22.4
Father	38	1.5	154	5.8	192	3.7
School	426	16.7	525	19.8	951	18.3
Friends	917	36.0	1028	38.8	1945	37.4
Other family member (aunt, uncle, grandparents, etc.)	53	2.1	32	1.2	85	1.6
Nobody	71	2.8	100	3.7	171	3.3
Internet	140	5.5	264	10.0	404	7.8
I do not know	84	3.3	114	4.3	197	3.8
Other	50	2.0	39	1.5	89	1.7

As for the themes that they considered were lacking in sex education, females indicated sexual practices including masturbation as their first option while males reported stereotypes (Table 37).

Table 37 Themes of sex education

	Female		Male		Total	
	n	%	n	%	n	%
Theme(s) that was/were lacking in sex education (multiple choice)						
Anatomy and development of the human body, puberty, period, nocturnal emission	401	15.7	368	13.9	768	14.8
Pregnancy, birth, how to make a child	202	7.9	198	7.5	401	7.7
Sexual practices including masturbation	927	36.3	688	25.9	16.1	31.0
Emotions, pleasure, love, tenderness, fear, sexual violence	714	28.0	640	24.1	1354	26.0
Romantic relationships	371	14.5	435	16.4	805	15.5
Heterosexuality	153	6.0	169	6.4	322	6.2
Homosexuality	568	22.3	475	17.9	1043	20.0
Bisexuality	591	23.2	449	16.9	1040	20.0
Questioning gender identity (Transgender people)	613	24.0	452	17.0	1066	20.5
Condom, contraception	307	12.0	327	12.3	634	12.2
Rights in the sexuality field (right to say no to sexual relations, right to live one's sexual orientation, right to abortion, etc.)	684	26.8	523	19.7	1207	23.2
Stereotypes, clichés, common ideas about sexuality (especially on the Internet)	835	32.7	855	32.2	1690	32.5
None of these themes	535	21.0	590	22.2	1126	21.6
I do not know	319	12.5	521	19.6	840	16.1
Other	52	2.0	42	1.6	94	1.8

7.15 Gender identity

Participants were categorized as a transgender person if they answered *other* to the question on their sex and/or *trans-woman*, *trans-man* or *other* to the question on gender identity. Thus, 26 participants were categorized as transgender (0.4%).

Respondents indicated that their sex at birth was male in 10 cases, female in 13 and other in 3. However, the most frequently reported gender identity was *other* (Table 38):

Table 38 Sociodemographic data (gender identity)

	Total	
	n	%
Gender identity		
Woman	1	4.2
Man	0	0.0
Trans woman	5	20.8
Trans man	8	33.3
Other	10	41.7
Sex at birth		
Man	10	38.5
Woman	13	50.0
Other	3	11.5
Mean age	26	26.7±.17
Hormonal treatment (yes)	9	40.9
Surgery operation (yes)	7	31.8

8

Discussion

8 Discussion

8.1 Results

Regarding socio-demographics, our sample is almost equally divided into males and females, and they follow the linguistic distribution described in Switzerland [121]. The percentage of Swiss-born participants is also similar to previous studies [122]. Half of our sample declared having tertiary studies, which is the same percentage that can be found in the 25-34 year-old age group in Switzerland[123].

The mean age at first sexual contact was just under 17 years. The partner was mainly the same age or older for women and the same age or younger for men

Similarly to what is reported in the literature [124, 125], the majority of respondents (86%) in our study had only had heterosexual contacts, however 15% of females and 13% of males had either homosexual or bisexual contacts. Among them, the first sexual contact was mainly with someone of the opposite sex. The proportion of males reporting only homosexual experiences (3.4%) was higher than among females (1.0%). A study among adolescents presenting to the emergency room[124] also found that there were more males than females reporting only same-sex partners, and a study among Danish youths found similar results[126].

Ninety-two percent of participants identifying themselves as heterosexuals, slightly more than 6% homosexuals or bisexuals, 1.6% did not know and 0.6% (N=29) indicated the option *other*. These results are very similar to those reported in the United States[125]. While males outnumbered females in declaring themselves as homosexual, the reverse was true for bisexuality or being unsure.

Around 90% of both males and females reported being only or strongly attracted to people of the opposite sex. Females (9.7%) slightly outnumbered males (7.3%) in reporting any degree of same sex attraction or an attraction not affected by gender. In the study by Copen et al. [125], there were almost no gender differences. It is worth noting that 0.6% of females and 0.4% of males declared not feeling attracted to anyone.

Participants were categorized as a transgender person if they answered *other* to the question on their sex or *trans-woman*, *trans-man* or *other* to the question on gender identity. Thus, 28 participants were categorized as transgender (0.4%). Although the prevalence rate of transgender people depends on the definition, our results are similar to those reported in a systematic review assessing self-reported transgender identity[127].

As previously described[125, 128-133], the vast majority had had vaginal sex and half of respondents had it at least weekly, as also indicated in the literature[133]. Mean age at first vaginal sexual intercourse was under age 18 years for both gender, mainly with a steady partner. About two-thirds of them thought that it happened at the right moment. The most cited reason to start vaginal sex was being in love, followed by curiosity. While 64% of males found this first experience pleasant or very

pleasant, for 69% of females it was very unpleasant, unpleasant or just neutral. This can have important implications, as negative first experiences are associated to later sexual difficulties[134].

Almost all respondents had ever had oral sex, most of them with an opposite-sex partner. Mean age at first time was around 18 years. These data are similar to those reported from central Europe among youths aged 15-24 years [128], among 25-34 year-olds in the US [125], among 16-21 year-olds in Canada[133], or among males in Estonia [129]. However, a Spanish sample of 14-24 years-old found that only slightly more than half of them had ever had oral sex[132].

The same percentage of females and males (49%) reported ever having had anal intercourse, on average at almost 22 years of age. This rate is higher than the ones reported among military conscripts in Estonia [129], among 24-25 year-olds in the US[125], among Canadian adolescents [133] or among the general population in Slovenia[128]. Spanish youths also reported much lower rates with an important difference between gender[132], while Canadian youths reported also much lower rates but without gender difference[135]. Regarding frequency, anal sex was practiced rarely and the first time it was part of a steady relationship. Even if the majority reported having done it for the first time at the right moment and while in a steady relationship, there was a gender difference about how the experience was felt: while 72% of women found it unpleasant, very unpleasant or neutral, two-thirds of men found it pleasant or very pleasant. For both gender, curiosity was the main reason for doing it.

One fourth of males and one-fifth of females had had ten or more sexual partners in their lifetime. However, only 14% and 9%, respectively, had ever had ten or more occasional partners. This rate is slightly higher than the one found among Danish youth[126]. A Canadian research reported that 25% of females and 30% of males had had six or more partners in their lifetime[130] while among youths in protection centers it represented 45% of females and 62% of males[135]. However, when analyzing the last 12 months, the majority (females 74%, males 62%) had only had one partner, probably because most of them were in a steady relationship.

Most respondents had been in at least one steady relationship, with almost half of them in two or three such relationships. Regarding their first steady relationship, as expected, females had a partner who was their age or older while for males the partner was their age or younger. Danish data show similar results, although males more often were the same age than their partner[126]. Overall, the majority of them were satisfied (whether very or somewhat) with it. Currently three out of every four participants were in a steady relationship, as previously reported[133]. The vast majority were satisfied with it.

A small percentage of participants (5%) declared never having had a sexual partner. This rate is lower than one declared among US men (12.5%) and women (8.3%) aged 25-29 years[136]. Another American study reported virginity rates of 11% for both gender at age 25[137]. The main reason given by males was the lack of opportunity, while females reported not having found the right person. This is quite similar to what Sprecher and Treger [138] described among college students: the main reason for males was *partner unwilling* and for females *not enough love*. These data are important in regard to a study concluding that sexually inexperienced adults perceived themselves as being stigmatized[139].

Over 70% of males and females had ever had casual sex partners. This is slightly higher than the percentage portrayed in a Minnesota sample[140]. Nevertheless, only one quarter had had a casual partner in the last 12 months. The decrease is probably explained by the fact that more youths are in a steady relationship.

Those having had 3-way intercourse (with two partners at the same time) or group (more than 2 partners at the same time) sex experiences were a small minority (4%), with slightly more males than females. The literature on this topic including young people is scarce. In a Canadian research among in youth (aged 14-17) protection centres, 38% of females and 43% of males reported at least one of these experiences[135], although the sample was clearly biased. Among young females (aged 18-20) attending a health clinic, the prevalence was 6%[141].

The percentage of females ever having been pregnant or of males ever having had their partner pregnant was relatively low, most probably due to the age (mean 26 years) of the sample as over two-thirds of mothers in Switzerland have their first child at age 30 years or over [121]. Moreover, almost 30% of females had interrupted their pregnancy and the rate increased to 42% for males referred to their partners. The fact that half of the sample were tertiary graduates or students could explain, at least partially, these relatively high rates as education level is a characteristic correlated to pregnancy interruption [142]. In this line, a study carried out in the US indicated that the reason for seeking abortion was *bad timing* in over one third of cases. It is also worth noting that a sizeable percentage of both males and females declared always using contraception before the pregnancy but that it failed. Jones et al.[143] also found that a substantial proportion (13-14%) of women seeking abortion reported being perfect contraception users (condom or pill). Nevertheless, more than half of those who had ever been pregnant (or who had ever had their partner pregnant) were not using contraception during the month before the pregnancy. An American study [143] among women who interrupted their pregnancy also reported that 46% of them were not using contraception in the month preceding conception, mainly because of the perception of low risk of pregnancy and issues about contraception.

The fact that the vast majority of respondents had used some kind of contraception at their first intercourse, mainly male condoms (even if they were also using the contraceptive pill in almost two out of every five cases) is a very positive result. In 2010[144], 80% of Swiss young people aged between 17 and 20 years old reported using a mean of protection / contraception. This finding is in agreement with results from a Scandinavian study women aged 18-26 years[145] and from French [146] and American[147] studies among youths. In the same line, those not using any contraceptive method at first intercourse were very few, as already reported[146].

However, at last intercourse contraception methods were more equally distributed between male condom and contraceptive pill, probably because of the higher likelihood of being in a steady relationship, as described in a US research[147]. As for the type of contraception used at first sexual intercourse, all other contraception methods represented less than 5%, with the exception of intrauterine devices (IUD).

Almost half of females had ever used emergency contraception and close to two-fifths of males reported their partner having ever used it. Twenty years ago[63], the rate was 20% of 16-20 year-old females and 18% of males' partners. The current percentages are also higher than described

elsewhere[130, 148]. For both genders, the mean number of times they had used it was two, while previous research indicated that it was mainly only once [63, 148]. For two-thirds of them it was due to a failure in the contraceptive method used, as previously described[149]. Rate of respondents indicating that they (or their partner) used emergency contraception as their main contraception method was very low.

There is a relatively important percentage of youths (45%, slightly higher among females) having ever undergone an HIV test, mainly as a general or sexual health check-up or to stop using condoms. Almost all of them had a negative result, as described in other studies[129, 150]. It is worth wondering whether those receiving a positive result would avoid answering the question and to what point the percentage of those having a positive HIV test (and, hence, those having ever undergone an HIV test) may be underestimated in our sample. The fact that, in a Spanish survey, the fear of a positive result was the main reason for not testing[151] seems to confirm this.

Additionally, about one youth in 10 reported ever having had a sexually transmitted infection (STI). This rate is similar to the one reported among adolescents presenting to an emergency department[124] and higher than among 18-29 year-olds in Slovenia[152], but lower than the one among 15-19 year-olds in St. Petersburg, Russia[153]. Chlamydia was the most frequently reported infection for both gender, in line with most studies[154 129 155]

Males outnumbered females in online sexual activity. They were more likely to have ever surfed on a dating website or application, to have had a date with someone met on the Internet or to have had an erotic conversation with someone never met in real life. They were also much more likely to have ever surfed on a website to watch porn. Similar data have been reported among 15-20 year-olds in Norway[156] and among 18-26 year-olds in Germany and Poland[157]. In the latter study, those using pornography (compared to non-users) were significantly more likely to report anal sex and casual sex experiences.

Those having ever had intercourse with someone met on the Internet accounted for 22% of females and 35% of males. This finding is relatively comparable to the one described among adolescents in Norway (30% for both gender) [156].

More than half of males (56%) and 46% of females had ever had intercourse while intoxicated. These results are very similar to those found among adolescents presenting to an emergency department [124] but higher than among Canadian youth[130]. Substance use has been associated to unprotected sex, emergency contraception use and a diagnosis of STI[131]. Moreover, binge drinking among females and drug use among both gender is associated to unwanted sexual experiences [131].

About one female in nine reported a sexual dysfunction. This rate is much lower than the ones reported by females aged 16-21 years in Canada [133, 158] and by 15-24 year-olds in France[159]. Moreover, an Internet-based study among Chinese women with a mean age of 25 years depicted that 60% of them were at risk of sexual dysfunction[160].

Among males, 17.5% indicated premature ejaculation and the same percentage erectile dysfunction, although only 0.6% declared it to be moderate or severe. These rates are different from the ones reported among Swiss young men (11% and 30%, respectively)[75]. An international online survey carried out among adults showed that, similar to our results, 18% of 18-24 year-olds

reported premature ejaculation. However, the prevalence increased to 23% among those in the 25-34 years age group [161]. A Canadian survey[133] described almost the same prevalence rates for premature ejaculation and erectile dysfunction. Moreau et al. [159] in their analysis of French youths aged 15-24 years found a prevalence rate of 23% for at least one sexual dysfunction for males. These differences could be explained because both the questions used and the time frame were different from the ones used in our study.

Many more females than those reporting a sexual dysfunction indicated ever looking for help or information about sexual troubles or problems. Their main information resource was the Internet, followed by a gynecologist. For males, the main resource was by far the Internet (86%), as already depicted[162]. It is important to note thought that 10% percent of females and 13% of males indicated that the help they received was not helpful at all.

About one male in twenty had ever used medication to enhance their sexual performance, and the main reason for it was curiosity. The medication was rarely medically prescribed, as friends and the Internet were the providers of the medication in almost two-thirds of the cases. These results are in line with previous publications [74, 163, 164]. Among males having sex with men, 2.2% of them indicated using this kind of medication, also mainly for curiosity. In the literature, its use among men having sex with men is associated with risky sexual practices such as increased number of sex-partners, higher rates of STIs, and unprotected sex with HIV-positive partners and with illicit drug use[92, 165].

There was an important difference in lifetime unwanted sexual experiences between females (25%) and males (8%), as previously described[131, 166]. However, data from Chilean males show higher rates than in our study, although using a wider definition[167]. Females also largely outnumbered males in ever accepting sexual intercourse without really wanting (53% vs. 23%). These rates are much higher than indicated among 18-24 year-olds in Canada[130] but very similar to another Canadian study (Females 47%, males 23%)[133]. The main reason cited by females for accepting sexual intercourse without wanting was to have a smooth relationship, while for males it was because their partner expected intercourse. Females also outnumbered males both in regretting after having had intercourse and in ever refusing sexual intercourse to a partner.

Females were five times more likely than males (16% vs. 3%) to report having ever been victim of sexual assault or abuse. A Canadian study[130] found lower rates and a less larger difference between gender. The mean age was similar in both genders, just under 15 years. In the same line, a Swiss study[168] on sexual violence towards children and youths conducted in 2009 among 9th grade students (14-15 years old) found a less large difference between gender but higher rates with 22% of girls and 8% of boys who reported some type of contact sexual victimization at least once in their lives.

Two females out of every 5 and 8% of males had received the HPV vaccination. Although this gender difference could be explained by the fact that HPV vaccination recommendation for males is very recent, it is worth noting that half of males and over one-fifth of females did not know whether they had been vaccinated. The vaccination rate among women found in our study parallels the one found by a Swiss survey in 2014[169]. On the contrary, the vaccination rate in the canton of Geneva in 2012 among adolescent girls who were aged 11-19 in 2008 (same age range as our sample) was

much higher, reaching 75% [170]. Overall European data referred to primary target and organized catch-up indicated a rate of 48%, also higher than the one found in our study [171]. Moreover, the vaccination rate among males is much lower than the one declared among US college males aged 21-26 years (46%)[172]. Similarly, it is also lower than the ones described for female (68%) and male (28%) US college students having received at least one dose [173].

The main reasons for not being vaccinated were refusal for females and not being aware of the vaccination for males. Concerning males not being aware, it is worth noting that an Italian research among males reported that over half of them had not heard about the vaccine, but over 70% were willing to be vaccinated and to pay for it [174]. In a previous Swiss survey, women aged 21-24 years declared lack of information and already having had sexual partners as the main reasons for not being vaccinated[169]. For both gender, the main reason to refuse vaccination was an overall opposition to vaccines. A US study among 18-26 year-old women found that the main reason for no interest in HPV vaccination was feeling that they did not need the vaccine [175].

Males were slightly more likely than females (3.7% vs. 2.8%) to have received something or obtained an advantage in exchange of sexual intercourse, but it remained a small minority. A study among Canadian adolescents in youth protection centers revealed more females (27%) than males (8%) having ever received money or other goods in exchange of sexual relations[135]. However, data from more general populations showed similar rates: Abels and Blignaut [176] reported that 2% of 15-24 year-old students had exchanged money or gifts for sexual intercourse, while American data show a prevalence of 4% for having sex in exchange of money or drugs[177].

On the contrary, males clearly outnumbered females (13% vs. 0.3%) in ever giving something or offering an advantage in exchange of sexual intercourse, as described in the literature[126]. A study among the general population of Slovenia[128] reported that 5.4% of males aged 25-34 years had ever paid for sex with women.

Sexting was a common activity in terms of sending (73%) or receiving (79%) sexual-related text-only messages, photos or videos among females and males. When messages were divided between text-only and photo or video, rates were lower for photo or video showing that sexual-related text-only messages are more prevalent. Compared to the first public study[50] on sexting conducted in 2008 in the USA including a group of young adults aged 20-26 years, our participants were more likely to report having already sent a text-only messages (70% vs. 58%) and photo or video of themselves (50% vs. 32%). For dissemination and forwarding to others, males clearly outnumbered females (16.0 vs. 28%). However, compared to the 2008 American study, rates were lower among our sample (15% vs. 17% for a photo or a video and 17% vs. 23% for a text-only message).

The main resource for sexual information for both gender were their friends (37%), followed by their mother among females (30%) and school among males (20%). A Spanish study concluded that adolescents indicated receiving sexual information mainly from their friends but little from their father or mother[178]. Nonetheless, a qualitative Australian research among 16-19 year-old males found that their sexual health information came mainly from school, although it was poorly recalled and mainly limited to physiological information[179]. This finding seems to be in line with our results indicating that the principal themes that respondents considered were lacking in sex education were sexual practices including masturbation for females and stereotypes for males.

8.2 Strengths and Limitations

The main strength of this research is that it is the first one carried out nationally since 1995 and is based on a nationally representative sample of youths. Furthermore, it covers a very large range of questions regarding sexuality among youths.

Nevertheless, some limitations need to be mentioned. First, we had a low response rate of 15%, even though this rate is similar to the one reported in a Danish survey using almost exactly the same methodology (20%)[126]. The fact that sexual health and behavior is a sensitive theme and that potential participants may not be at ease answering through the web (even if it was secured) could be an explanation, as surveys using other data collection techniques such as face-to-face interviews [125] or a paper-based questionnaire, web questionnaire or phone interview [145] reached much higher response rates (73% and 60%, respectively). We could only contact participants though postal mail and having to connect to the website and introduce a code might have reduced the likelihood to answer compared to having received the invitation electronically. Additionally, due to unexpected delays, the survey was launched right before summer holidays, which might also have reduced the response rate. Finally, the length of the questionnaire including the life history calendar may also have been a barrier. Although the life history calendar was used to avoid it, a recall bias cannot be excluded. In the same line, a social desirability bias cannot be excluded either, even if the questionnaire's anonymity should minimize it [180].

8.3 Conclusions and recommendations

Overall, youth in Switzerland report a healthy sexuality. The very high percentage of condom use at first intercourse, knowing when to use emergency contraception or the relatively high rate of HIV testing go in this direction.

However, young people being active on online sex need to be further analyzed regarding both the frequency of this practice and the potential risk they incur in, especially since this kind of sexual activity should be expected to increase in the future because of the availability of new connected devices and new Internet sites.

Unfortunately, and despite all the efforts, women continue to be overrepresented in the cases of unwanted sexual experiences and sexual abuse. Moreover, although the percentages are much lower, these phenomena are no unknown to males. Prevention measures need to be put in place.

Contrary to popular belief, sexual dysfunctions are relatively common among young people. How and where to address these issues, especially for males, remains to be explored and defined.

There is a sizeable percentage of youth who have exchanged sexual favors for money or gifts and need to be further characterized, as they are more likely to take risks. The same applies to those having sexual relationships while intoxicated or having group sex.

About one youth in twenty is virgin at age 26. This group needs to be further studied regarding the reasons for it, the association with specific behaviors, and to what degree they feel stigmatized.

Reliable contraceptive use is the norm in this age group and it varies from first to last intercourse. Male condom and hormonal contraception are the most used by far.

Emergency contraception is a clear option in cases when the main contraceptive method failed. Nevertheless, still 30% of pregnancies ended up in an abortion. The causes for it warrant further investigation.

Even if the condom use rate is quite high, even at last intercourse, the reported STI rate of 10% is relatively high compared to other studies and needs further analysis.

9

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9 References

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