

SEXUAL ASSAULT REPORTING

A study to improve prevention, information, and care of victims in emergency care settings

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Introduction

Sexual assault is a human rights violation and a global public health concern. The World Health Organization (WHO) defines sexual violence as, “any sexual act, attempt to obtain a sexual act, or other act directed against a person’s sexuality using coercion, by any person regardless of their relationship to the victim, in any setting. It includes rape, defined as the physically forced or otherwise coerced penetration of the vulva or anus with a penis, other body part or object”⁽¹⁾. Other definitions insist more on the lack of explicit consent rather than on the notion of coercion and refer to sexual assault as “any sexual contact or behavior that occurs without explicit consent of the victim”⁽²⁾. The elimination “of all forms of violence against all women and girls in private and public spheres, including trafficking and sexual and other types of exploitation” is target 5.2 of Sustainable Development Goal 5 (SDG5) of the 2030 Agenda for Sustainable Development⁽³⁾. In addition to elimination, ensuring effective prevention and protection, access to justice, victim support, and strengthened national and international coordination are key to combating sexual assault⁽⁴⁾.

Switzerland ratified the Council of Europe Convention on Preventing and Combating Violence against Women and Domestic Violence (Istanbul Convention) in 2017, and recently released the national action plan for 2022–2026 (PAN CI 2022–2026), which highlights three priority areas, the third being specifically related to sexual violence^(5,6). Measures 37 and 38 are related to ensuring medico-legal care for victims of sexual violence and developing cantonal healthcare related guidelines for victims of sexual and domestic violence⁽⁶⁾. Action 42 relates specifically to the improvement of national sexual assault statistics, which is particularly important to help inform future policies, training strategies and surveillance that will ultimately help improve care provided to sexual assault victims⁽⁶⁾. The topic of sexual violence and the legal definition of rape has become the focus of political and legal debate in Switzerland, partly due to the momentum created from the ratification of the Istanbul Convention. Recently, the Council of Europe’s Group of Experts on Action against Violence against Women and Domestic Violence (GREVIO) insisted that Switzerland’s legal definition of rape does not comply with the international standard that consent must be explicit^(7,8). The Swiss criminal code defines “rape” (Art. 190) as the forc[ing] of a person of the female sex by threats or violence, psychological pressure or

by being made incapable of resistance to submit to sexual intercourse. “Indecent assault” (Art. 189) is the use of “threats, force or psychological pressure on another person or makes that other person incapable of resistance in order to compel him or her to tolerate a sexual act similar to intercourse or any other sexual act”. In the context of our study, we define sexual assault as any sexual contact or attempted sexual contact without consent.

In Switzerland, data on sexual assault can be obtained from various sources (Figure 1), such as official police statistics to reported cases of assault taken from administrative data (hospitals, victim violence consultations), and population-based surveys on sexual assault among others.

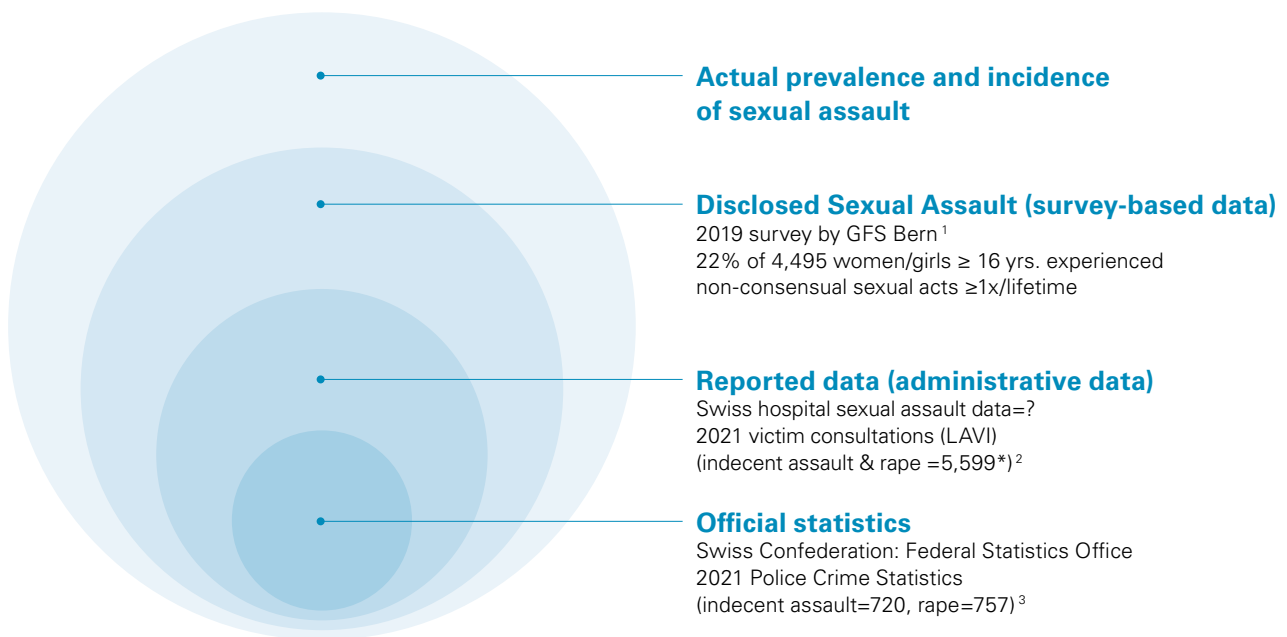
No statistics on sexual violence provide a comprehensive picture of the problem, with different sources of data representing different pieces of the puzzle. Shame, fear, stigmatisation, lack of awareness, legislation and protocols and many other obstacles prevent an unknown number of persons from disclosing, reporting, or seeking treatment for sexual assault. Some persons may also struggle with identifying violent sexual behaviour as violence. Sample surveys can act as a proxy for prevalence or incidence rates. According to WHO’s Global Database on the Prevalence of Violence Against Women, Switzerland is one of the twelve countries with the lowest prevalence estimates for lifetime physical and/or sexual intimate partner violence among ever-married/partnered women aged 15–49 (prevalence estimated at 12%)⁽⁹⁾. However, these estimates were conducted as part of Switzerland’s participation in the International Violence against Women Survey (CH-IVAWS) almost 20 years ago^(10,11). The CH-IVAWS was administered to a sample of 1,975 adult women aged 18–72 years from the Swiss German and Swiss French parts of Switzerland, excluding the Swiss Italian population.

The most recent survey conducted by GFS Bern on sexual violence prevalence in Switzerland was published in 2019^(12,13). At least 22% of surveyed women and girls over the age of 16 out of a sample of 4,495 reported having experienced sexual violence (captured in the survey as various forms of “non-consensual sexual acts”). 12% of them had sex against their will, while 7% were prevented from moving or had pain inflicted to force them to have sex^(12,13).

Little is known in Switzerland about sexual violence in sub-populations. Studies have shown that lesbians, bisexual women, transgender and non-binary communities ^(14,15) experience significantly higher rates of sexual assault and rape compared with heterosexual women ⁽¹⁶⁻¹⁹⁾, probably because of higher discrimination, psychosocial disadvantage, barriers to reporting

and lack of specific support services ⁽¹⁸⁾. Surveyed women with disabilities have been found to have 4 times the odds of experiencing sexual assault in the past year compared to women without disabilities ⁽²⁰⁾. Being part of ethnic and sexual minorities can also affect the recovery after sexual assault ⁽²¹⁾.

Figure 1: Sexual Assault Data in Switzerland, adapted from the European Institute for Gender Equality (EIGE): Administrative data collection on violence against women—Good practices ⁽²²⁾.



* multiple offenses possible

1. gfs.bern. Le harcèlement sexuel et les violences sexuelles faites aux femmes sont répandus en Suisse [Internet]. 2019 [cited 2023 Jan 23]. Available from: <https://cockpit.gfsbern.ch/fr/cockpit/violence-sexuelles-en-suisse/>
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3. Federal Statistical Office. Code pénal (CP) : Infractions pénales et personnes prévenues [Internet]. Crime and criminal justice. 2022. Available from: <https://www.bfs.admin.ch/bfs/en/home/statistics/crime-criminal-justice/police/offences.assetdetail.21324220.html>

The official sexual assault statistics are produced by the Federal Statistics Office and are based on data in the Police Crime Statistics Report⁽²³⁾. These recorded crime statistics such as police crime statistics reflect only a small fraction of women and girls who were exposed to sexual violence, as many of them very rarely report sexual assault to the police⁽²⁴⁻²⁶⁾. In 2021, only 757 cases of rape and 720 sexual assaults were recorded in Switzerland, a country with 8.7 million people. During the same period in Sweden, a country with a population of approximately 10.4 million people, 9,668 rapes were recorded by the police, in addition to 11,348 cases of “sexual molestation”⁽²⁷⁾. Depending on the context, a higher rate of recorded sexual assault can actually reflect change and improvement in the data collection, higher awareness and greater trust in the police⁽²²⁾.

Administrative data are data that are available and generated through routine collection, usually documenting the use of various types of services provided, such as medical care and victim legal consultations. The Swiss Federal Office of Statistics releases annual data on the number of people who have contacted a victim assistance center and who have the status of beneficiary in accordance with the federal law on assistance to victims of crime (LAVI) and, since 2017, the Federal Act on Compulsory Social Measures and Placements Prior to 1981 (CSMPA). In 2021, there were 5,599 victim consultations for sexual assault and rape⁽²⁸⁾. Robust collection and analysis of such data can inform all the general population as well as actors working in this field, including legislators, about the use of services after sexual assault, prevention and health education

strategies and improve services for persons who were sexually assaulted. Studying eventual service gaps and unmet needs based on administrative data can be a powerful tool for dialogue and advocacy at a national and international level to improve sexual assault prevention and response⁽²⁹⁾. This is particularly important for Swiss hospital data on sexual assault.

Currently, Switzerland has many registries for health-related outcomes such as HIV, cancer, transplants, hepatitis, air pollution and lung disease among others. However, there is no countrywide observatory of persons consulting for sexual assault in Swiss hospitals. Additionally, there has been little research on this subject, despite its importance for gaining knowledge about the characteristics of sexual assault victims, the assault that they experienced as well as the care and follow-up they received and psychophysical and sexual health at short, medium and long term⁽³⁰⁻³³⁾.

The aim of this study was to assess the characteristics of all persons including cisgender women, non-binary, queer persons, transgender men with a vulva and vagina and transgender women, regardless of sexual orientation, ≥ 14 years old, reporting sexual assault at the obstetrics and gynecology emergency departments of Geneva University Hospitals (HUG) and Lausanne University Hospitals (CHUV), between 2018 and 2021.

The use of the term “woman” or “girl” throughout our report is used when referencing and discussing previous research or literature that refers to “women and girls”.

Methods

Definitions

For a full list of all variables and definitions, please see Annex 1.

Ethics approval and Funding

This research project was approved by the Cantonal Research Ethics Commission of Geneva and Vaud, Switzerland (CCER Project ID 2016-01144), and conducted in accordance with the Declaration of Helsinki, the principles of Good Clinical Research Practices, the Human Research Act (HRA) and the Human Research Ordinance (HRO), as well as other locally relevant regulations⁽³⁴⁻³⁶⁾. This project is funded by the Swiss Federal Office for Gender Equality (FOGE) and the Geneva University Hospitals, as part of the wider project entitled, "Sexual Assault Reporting– A study to improve prevention, information and care after sexual assault in emergency care settings".

Inclusion and Exclusion Criteria

Retrospective data were collected for all persons including cisgender women, non-binary, queer persons, transgender men with a vulva and vagina and transgender women, regardless of sexual orientation, ≥ 14 years old presenting to the obstetrics and gynecology emergency departments of the Geneva and Lausanne University Hospitals (HUG and CHUV) to report a sexual assault over a four year period, (2018-2021). Please note that the term queer is used here only to refer to gender identity and not sexual orientation.

Children and adolescents < 14 , cisgender men and trans men with a penis (who usually do not consult obstetrics and gynecology emergency departments after a sexual assault) and recurrent patients with more than 3 sexual assaults reported at a participating centre within the study period (2018-2021) were excluded. For these recurrent patients, the first three assaults were included. Also, duplicate sexual assault reports that were not initially ordered by the Police or the public prosecutor, as well as reports that did not include sexual assault but other types of physical or psychological violence alone were excluded. Starting in June 2020, the canton of Vaud increased the number of hospitals where a sexual assault report could be filed. Reports from Hopitaux d'Yverdons-les-Bains, Rennaz, Payerne, Nyon, Morges were excluded as they were outside of the scope of the ethics approval.

Forensic and gynaecologic examination and data collection

The Romandy University Center of Legal Medicine (CURML), located on the two university hospital sites of Lausanne (CHUV) and Geneva (HUG) is a regional medicolegal center created in collaboration between the two university hospitals of French-speaking Switzerland. When a patient presents or is referred to the obstetrics and gynecology emergency departments of HUG and CHUV for a sexual assault, they are triaged by a nurse and examined by an on call forensic doctor from the CURML and a gynecologist on duty at the gyneco-obstetrical emergency department of the two sites. Starting in 2020 in the canton of Vaud, the CURML-CHUV forensic doctors travel to the regional hospitals to prevent the victims from having to travel long distances. The main goal is to tend to the patient's needs in the most coherent and coordinated manner by offering them medico-psychological and medico-legal follow-up throughout the short, medium and sometimes long-term⁽³⁷⁾. Treatment includes post-exposure prophylactic therapies, emergency contraception and various follow-up appointments that are slightly different at HUG and CHUV. At HUG, if desired, patients ≥ 16 years old are given an appointment at the Interdisciplinary Unit of Medicine and Prevention of Violence (UIMPV) with a psychologist the following day, a consultation at the HIV clinic five days after and an appointment at the gynecological outpatient clinic approximately ten days after⁽³⁷⁾. At CHUV, patients receive a single appointment at the psychosomatic and psychosocial clinic in the obstetrics and gynecology department between 1-30 days after the sexual assault⁽³⁸⁾. After the gynecological and forensic assessment at the gyneco-obstetrical emergency department, the follow-up for patients < 16 is established at the pediatrics department.

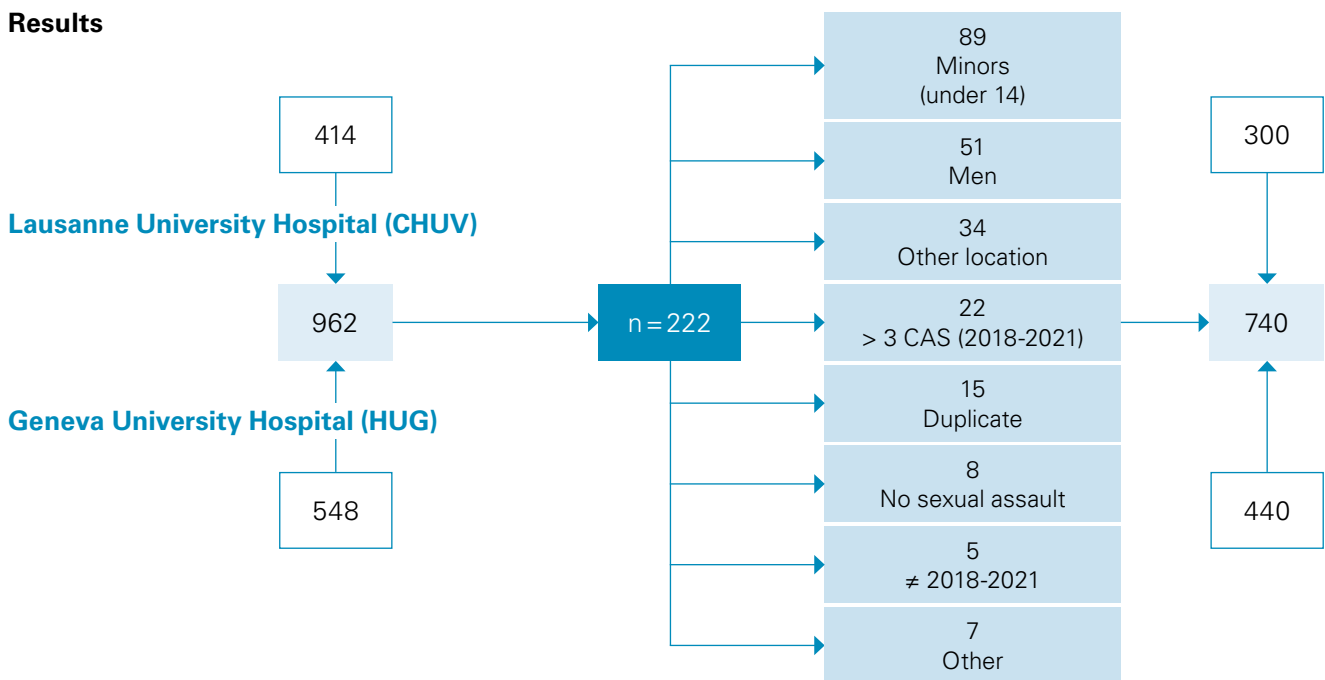
The medico-legal exam provides the necessary documentation, in the event of criminal proceedings and with the victim's consent for the judicial authorities ⁽³⁷⁾

During the timeframe of the study, the two regional university hospitals used the same paper format for the reporting of a medico-legal sexual assault, which allowed for comparability between sites. The data for this study was obtained from finalized sexual assault reports written and signed by the forensic doctor and gynecologist who examined the patient and their chiefs of units, that review and sign every report.

Data analysis

Descriptive statistics were provided to describe the sociodemographic and clinical characteristics of the patients reporting a sexual assault as well as the characteristics of the sexual assault itself.

Results



A total of 962 sexual assault records during the 48-month study period were reviewed (414 from the Lausanne University Hospital and 548 from the Geneva University Hospital), of which 740 were retained for analysis. Twenty-three percent (n=222) of the sexual assault records were ineligible for various reasons. Several records had multiple reasons for exclusion. Of the 222 records excluded, 40% (n=89) were minors under the age of 14, 23% (n=51) were cisgender men or boys. Thirty-four patients reported sexual assaults at sites other than at the HUG or CHUV. Since June 2020, medico-legal exams became available at regional hospitals in the canton of Vaud, allowing women and girls reporting a sexual assault to consult at a local hospital rather than traveling long distances. For this reason, 34 patients benefited from the availability of these new services but were ineligible for inclusion in our study population. Three patients presented more than 3 times during the 4-year study period, of which 22 records were excluded. Each of these patients' first 3 sexual assault records were included. Fifteen sexual assault cases were excluded as they were duplicate files, and 5 were outside of the timeline. Eight patients sexual assault records were not included in our analyses because the assault was not sexual in nature, or the patient later stated that the assault never occurred. There were 7 files that were excluded for various other reasons.

Sociodemographic characteristics

Table 1 provides details on the sociodemographic characteristics of the 740 patients presenting to the hospital emergency departments for a sexual assault (mean age 27.7 ± 11.8 years), range 14-93 years, median 24 years (IQR 19-33). From 2018-2019 there was an increase in the number of sexual assault consultations seen in the emergency departments (n=174, 2018 to n=216, 2019). In 2020, most likely because of COVID-19 and stay-at home orders, the emergency departments saw a decrease in the number of persons reporting sexual assaults (n=156), while in 2021, the number of consultations returned to pre-Covid frequency (n=182).

Forty-five percent (n=332) of all sexual assaults took place during the weekend, on either a Saturday or Sunday. The summer months had the highest frequency of sexual assault consultations (n=248, 34%) in comparison to the other seasons (Winter: 23%, Spring: 20%, Fall: 23%).

Table 1: Frequency of sexual assaults by year and site, Sociodemographic and assault characteristics of patients presenting to the Geneva and Lausanne University Hospitals to report a sexual assault (2018-2021). All data are n (%).

| Variable | Responses | N=740 |
|-------------------------------|---|--------------|
| Age | Mean (sd) | 27,7 (11,8) |
| | Median (IQR) | 24 (19–33,2) |
| | Range | 14 to 93 |
| Site | CHUV | 300 (40) |
| | HUG | 440 (60) |
| Year of the assault | 2017 | 1 (0) |
| | 2018 | 174 (24) |
| | 2019 | 216 (30) |
| | 2020 | 156 (21) |
| | 2021 | 182 (25) |
| | 2022 | 3 (0) |
| | missing | 8 |
| Day of the week | Monday | 74 (10) |
| | Tuesday | 62 (8) |
| | Wednesday | 85 (11) |
| | Thursday | 79 (11) |
| | Friday | 99 (13) |
| | Saturday | 174 (24) |
| | Sunday | 158 (21) |
| | Unknown | 9 (1) |
| Season | Winter | 165 (23) |
| | Spring | 148 (20) |
| | Summer | 248 (34) |
| | Fall | 171 (23) |
| | Unknown | 8 |
| Civil Status | Single | 440 (60) |
| | Unknown | 116 (16) |
| | Married | 67 (9) |
| | Divorced | 44 (6) |
| | Cohabiting | 43 (6) |
| | Separated | 16 (2) |
| | NA* | 9 |
| | Widowed | 5 (1) |
| Victim's nationality (Region) | Switzerland | 279 (39) |
| | Unknown | 168 (23) |
| | Europe | 146 (20) |
| | Americas | 59 (8) |
| | Sub-Saharan Africa | 28 (4) |
| | Middle East and North Africa | 22 (3) |
| | Asia | 18 (2) |
| | Pacific | 2 (0) |
| | NA* | 18 |
| Assault location | Home | 418 (56) |
| | ...Assailant's home | 195 (26) |
| | ...Victim's home | 169 (23) |
| | ...Friend/family member's home | 43 (6) |
| | ...Couple's home | 11 (1) |
| | Public | 144 (19) |
| | Unknown (amnesia) | 78 (11) |
| | Hotel | 31 (4) |
| | Car | 23 (3) |
| | Institutional Care Setting | 22 (3) |
| | Other (including unspecified) | 17 (2) |
| | Institution | 3 (0) |
| | School | 2 (0) |
| | Workplace | 2 (0) |
| | Number of perpetrators | One |
| Multiple | | 56 (8) |
| Unknown (amnesia) | | 115 (16) |
| Known assailant | No | 206 (28) |
| | Yes/Yes & no (1≤ assailants) | 431 (58) |
| | ...Friend/colleague/peer/acquaintance | 226 (53) |
| | ...Current intimate partner | 73 (17) |
| | ...Other (known to victim) | 39 (9) |
| | ...Former intimate partner | 37 (9) |
| | ...Other (unknown to victim) | 14 (3) |
| | ...Family member | 13 (3) |
| | ...Social network/internet acquaintance | 12 (3) |
| | ...Authority figure/care provider | 10 (2) |
| | ...Unknown | 6 (1) |
| | Unknown (amnesia) | 103 (14) |

| Variable | Responses | N=740 |
|---|-------------------|----------|
| Mandated by the Police or the public prosecutor | No | 441 (60) |
| | Yes | 299 (40) |
| Decision to press Charges | No | 52 (7) |
| | Yes | 129 (17) |
| | Undecided | 5 (1) |
| | Unknown | 552 (75) |
| NA* | 2 | |
| Prior sexual assault | No | 121 (17) |
| | Yes | 139 (19) |
| | Unknown | 467 (64) |
| | NA* | 13 |
| Time to examination | <24h | 374 (51) |
| | 24-72h | 236 (32) |
| | 72h-7d | 96 (13) |
| | > 1 wk. | 32 (5) |
| Physical and Psychological Violence | No | 216 (30) |
| | Yes | 355 (48) |
| | Unknown (amnesia) | 161 (22) |
| | NA* | 8 |
| Condom use | No | 379 (57) |
| | Yes | 42 (6) |
| | Yes and No | 33 (5) |
| | Unknown (amnesia) | 211 (32) |
| | NA* | 75 |
| Recent sexual contact | No | 557 (78) |
| | Yes | 161 (22) |
| | NA* | 22 |
| Amnesia | No | 473 (64) |
| | Yes | 267 (36) |
| First vaginal Penetration | No | 635 (87) |
| | Yes | 66 (9) |
| | Unknown | 33 (4) |
| NA* | 6 | |
| Contraception | No | 377 (51) |
| | Yes | 230 (31) |
| | Unknown | 133 (18) |
| Menopause | No | 664 (90) |
| | Yes | 37 (5) |
| | Unknown | 39 (5) |
| Pregnant at time of Assault | No | 735 (99) |
| | Yes | 5 (1) |
| Menstruation | No | 552 (75) |
| | Yes | 68 (9) |
| | Unknown | 120 (16) |
| Bathed/Showered/Washed Body before examination | No | 252 (34) |
| | Yes | 335 (45) |
| | Unknown | 153 (21) |
| Changed before examination | No | 187 (25) |
| | Yes | 300 (41) |
| | Unknown | 253 (34) |
| Habitual alcohol consumption | No | 211 (29) |
| | Occasionally | 418 (57) |
| | Regularly | 64 (9) |
| | Daily | 38 (5) |
| | NA* | 9 |
| Alcohol prior to assault | No | 264 (36) |
| | Yes | 442 (60) |
| | Unknown | 33 (4) |
| | NA* | 1 |
| Habitual drug consumption | No | 508 (70) |
| | Occasionally | 158 (22) |
| | Regularly | 36 (5) |
| | Daily | 25 (3) |
| | NA* | 13 |
| Drugs prior to assault | No | 613 (84) |
| | Yes | 121 (16) |
| | NA* | 6 |

*NA=Not Applicable

Most of the patients were from Switzerland (39%) or other European countries (20%), followed by persons from North, Central or South America (8%). A small proportion of patients presenting for sexual assaults were originally from Sub-Saharan Africa (4%), and the Middle East and/or North Africa (3%) as well as Asia (2%). The nationality of 23% of the study participants was marked as unknown, because there was no mention of their citizenship on their sexual assault report. Sixty percent of the patients seeking emergency care for sexual assault were single, 15% were married (9%) or cohabitating (6%), and 8% were divorced (6%) or separated (2%). In 16% of the sexual assault reports, the civil status of the patient was missing.

In 58% of the sexual assaults, the victim reported knowing the assailant, while 28% of patients did not previously know the person who sexually assaulted them. Of those who knew their assaulter, over half (53%) were a friend/colleague/peer/or acquaintance. Current intimate partners (17%) and former intimate partners (9%) represent a significant proportion of known assailants. Family members and authority figures were more rarely cited as the perpetrator in this population older than 14.

In 8% of cases, there were multiple perpetrators (n=56), where the assailants were mostly a combination of known and unknown. There was one assailant in 77% of the sexual assault cases, and 16% of the patients did not know the number of perpetrators because of amnesia (n=115). Seventeen percent of patients stated that this was their first sexual assault, while 19% stated that they experienced prior sexual assault. In 64% of the sexual assault reports, there was no mention of whether or not the person had another sexual assault experience.

The Police or the public prosecutor ordered 40% of the sexual assault medico-legal examinations, while 60% came to the emergency department seeking care on their own volition. Seven percent of the patients clearly stated that they did not intend to press charges, while 17% declared that they intended to bring charges against their aggressor. For 75% of the sexual assaults, we do not have additional information on the survivor's intention of pressing charges.

Fifty-one percent of patients presented for emergency care within 24 hours of the sexual assault, and another 32% within 24-72h, totalling 83% within the first 3 days. Thirteen percent came to the hospital between 72h and 7 days, with the remaining 4% who came after one week.

Two hundred sixty-seven patients (36%) experienced some form of amnesia—either partial (n=111, 42%) or total (n=156, 58%). We are unable to differentiate between amnesia due to trauma (peritraumatic dissociation) and amnesia due to alcohol or substance use.

Substance use was widely prevalent in our sample: 442 (60%) reported consuming alcohol prior to the sexual assault, and 121 (16%) reported using drugs. In total, most patients (63%, n=467) reported some type of substance use, of which 96 reported the use of both alcohol and drugs. When asked about their drinking habits, 57% (n=418) responded that they drink alcohol occasionally, and 14% drink either regularly (9%) or daily (5%). When asked about their drug habits, 22% (n=158) responded that they use drugs occasionally, and 14% use drugs either regularly (5%) or daily (3%). Among persons using drugs, the most frequently cited drugs were cannabis or hashish (81%), cocaine (31%) and Ecstasy or MDMA (10%).

Assault characteristics

Approximately one quarter of the patients were unable to recall or specify which types of penetration (if any) they were subjected to, because of amnesia. Vaginal penetration was reported by 67% (n=485), anal penetration by 17% (n=122), and oral penetration by 21% (n=154) (Table 2). One hundred ninety-one patients reported more than one penetration site (2 sites penetrated n=145, 3 sites penetrated n=46). Of the persons who reported vaginal penetration, penile penetration was reported in 85% of cases, and digital penetration in 40% of cases. Ejaculation was reported in 34% of sexual assaults with vaginal-penile penetration.

Of the persons who reported anal penetration, penile penetration was reported in 75% of cases, and digital penetration in 33% of cases. Ejaculation was reported in 13% of sexual assaults with anal-penile penetration.

Table 2: Sexual assault penetration sites and penetrant types (penile, digital, tongue, object and other) (n=740). All data are n (row percentage). There may be more than 1 penetration site or penetrant type per person*.

| Penetration Site | Yes | No | Unknown (Amnesia) | Penile Penetration | Ejaculation (Yes) | Ejaculation (No) | Ejaculation Unknown (Amnesia) | Digital (Finger) | Tongue | Object | Other |
|------------------|----------|----------|-------------------|--------------------|-------------------|------------------|-------------------------------|------------------|--------|--------|-------|
| Vaginal | 485 (67) | 59 (8) | 182 (25) | 410 (85) | 140 (34) | 95 (23) | 175 (43) | 196 (40) | 21 (4) | 8 (2) | 4 (1) |
| Anal | 122 (17) | 407 (57) | 191 (27) | 91 (75) | 12 (13) | 29 (32) | 49 (54) | 40 (33) | 3 (2) | 3 (2) | - |
| Oral | 154 (21) | 378 (52) | 190 (26) | 150 (97) | 28 (19) | 84 (57) | 36 (24) | 4 (3) | 5 (3) | 0 | - |

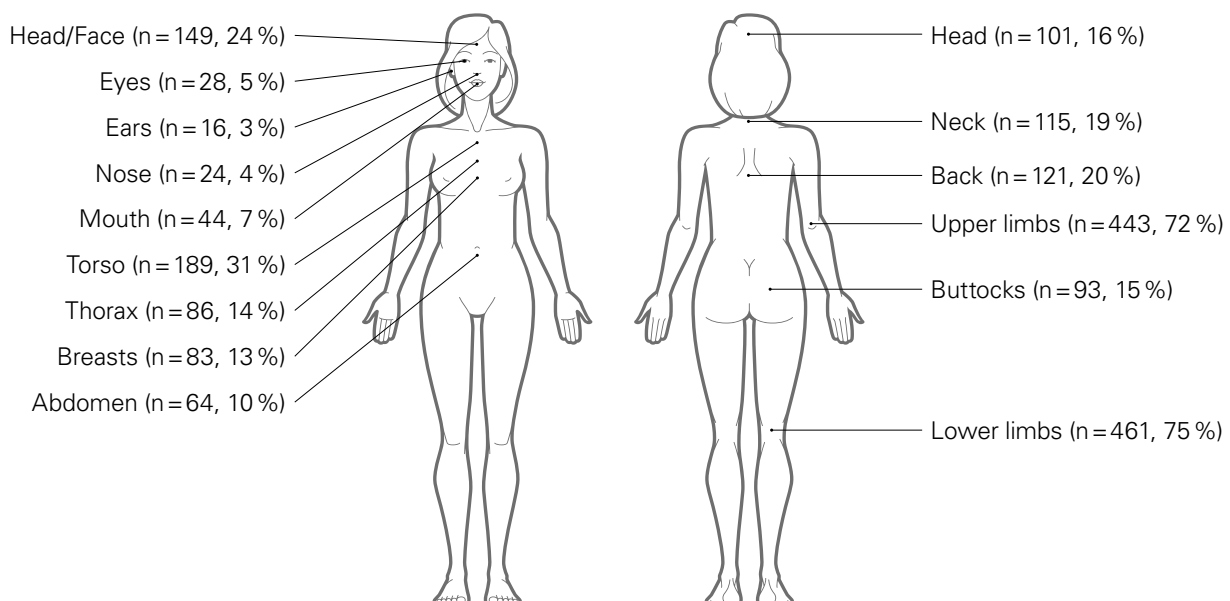
*4 % report 0 penetration. 72% reported at least 1 penetration site. 24% of patients report not knowing or not remembering if there was penetration.

For 66 patients, the sexual assault was the victim’s first vaginal penetration (9%). In line with the age structure of the sample, 6% of the patients confirmed that they had undergone menopause. 31% of the patients were currently using some form of contraception, while 9% of the total sample was menstruating at the time of the assault, and an additional 1% was pregnant.

Almost 60% (n=379) declared that a condom was not used during the assault, and only 6% of the victims noted the use of a condom. 32% were unsure if a condom was used or not due to amnesia.

The use of physical or psychological violence was described in 48% (n=355) of sexual assaults, with an additional 22% of the patients being unsure because of amnesia. Of the patients who experienced violence, 95% described it as physical (n=336) and an additional 32% (n=114) described experiencing psychological abuse. Various types of physical violence were employed, such as being held down against their will (n=244), being hit (36%), shoved or pushed (31%), strangled (25%), held by their hair (15%) or bitten (7%). The use of a weapon was recorded in 31 sexual assault cases, with knives being the weapon most frequently used.

Figure 2: Body Injuries According to site (n=619, 84%)

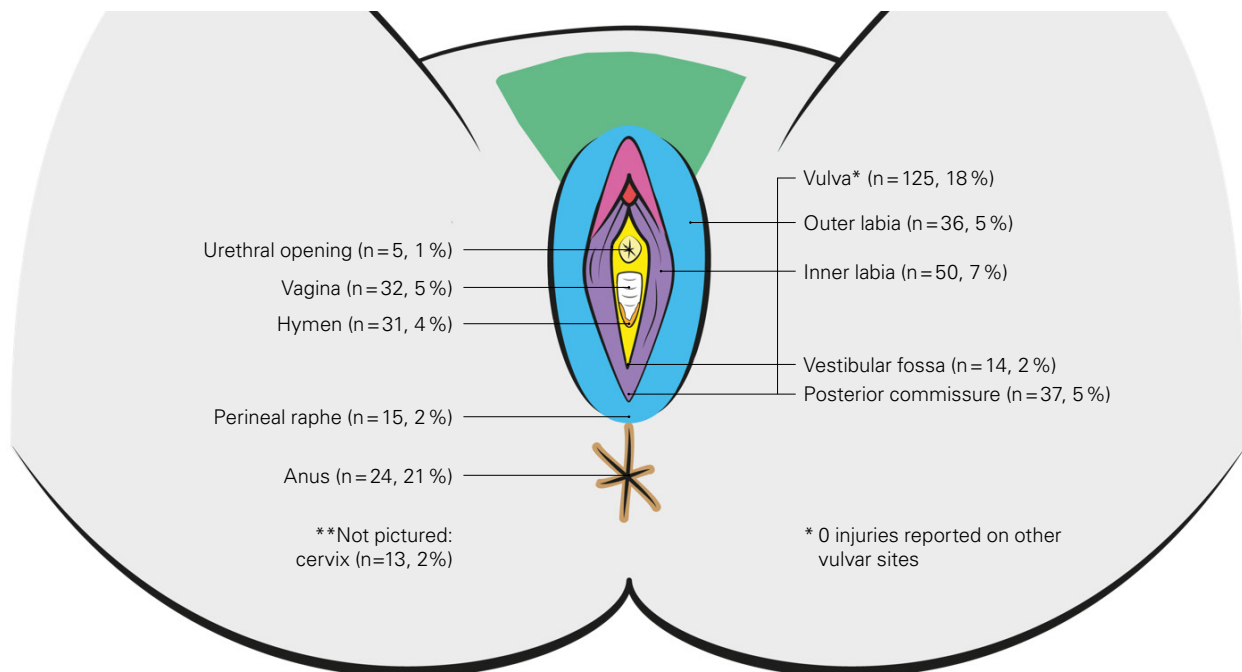


The forensic doctors recorded body injuries in 84% of the sexual assault reports (n=619) (Figure 2). In order of incidence, lower limb injuries (n=461, 75%) and upper limb injuries (n=443, 72%), followed by injuries

to the torso (n=189, 31%), and head/face (n=149, 24%), back (n=121, 20%), neck (n=115, 19%) and buttocks (n=93, 15%) were the most frequently recorded injuries to the body.

Figure 3: Ano-genital injuries (n=196, 28%) according to site among patients who underwent a gynecological exam (n=705). Anal injury (n=24, 21%) among patients who underwent a gynaecological exam and reported anal penetration (n=113). Genital injury (n=129, 28%) among patients who underwent a gynaecological exam and reported vaginal penetration (n=467).

Illustration: Romain Dewaele® www.unige.ch/ssi



Gynecological exam

Of the 740 patients reporting sexual assault, 23 forwent the gynecological exam for various reasons, the most common being that the patient refused the exam n=16 (70%). Gynecological exam data were not available for additional 12 study participants.

Genital injuries

Of the 705 patients who underwent gynaecological examination, 24% (n=172) presented with genital injury. Among the 467 reporting vaginal penetration, the percentage of genital injury was 28% (n=129) (Table 3).

Genital injuries were present in 21% of the patients from 19-49, in 30% of patients from 14-19 and 33% of patients from 50-93. The sooner the examination, the more frequently genital injury was observed (<24h: 27%, 24h-72h: 25%), progressively decreasing to 16% detection at 72h-1week, and finally 12% at 1 week or more.

Genital injuries were observed in 38% of sexual assaults involving more than one perpetrator, and in 25% of sexual assaults with a single perpetrator. When the survivor knew the assailant, the percentage of genital injury was 24% while it was 31% when they did not know the assailant. Digital vaginal penetration (penetration by finger) and penile-vaginal penetration

had similar rates of genital injury (28% vs 27%). There were 7 cases of vaginal penetration with an object, of which 3 (43%) presented with genital injury.

Vulvar injury was the most frequent site for genital injury, specifically on the inner labia (n=50, 7%), posterior commissure (n=37, 5%) and outer labia (n=36, 5%) (Figure 3).

Anal injuries

Of the 705 patients who underwent gynaecological examination, 5% (n=38) presented with anal injury. Among the 113 patients reporting anal penetration, 21% (n=24) presented with any injury (Table 4).

Table 3: Frequency of genital injuries among patients who had a gynecological examination (n=705). All data are n (row percentage).

| Variable | Responses | All (N = 705) | No genital injury (N = 533) | Genital injury (N = 172) |
|-------------------------------|-------------------|------------------|--------------------------------|-----------------------------|
| Age | 14-19 | 212 | 148 (70) | 64 (30) |
| | 20-49 | 451 | 357 (79) | 94 (21) |
| | 50-93 | 42 | 28 (67) | 14 (33) |
| Time to examination | < 24h | 357 | 260 (73) | 97 (27) |
| | 24-72h | 223 | 168 (75) | 55 (25) |
| | 72h-7d | 91 | 76 (84) | 15 (16) |
| | > 1 wk. | 32 | 28 (88) | 4 (12) |
| | NA | 2 | 1 | 1 |
| Known assailant | No | 196 | 135 (69) | 61 (31) |
| | Yes | 409 | 311 (76) | 98 (24) |
| | Unknown (amnesia) | 100 | 87 (87) | 13 (13) |
| Number of perpetrators | One | 541 | 406 (75) | 135 (25) |
| | Multiple | 52 | 32 (62) | 20 (38) |
| | Unknown (amnesia) | 112 | 95 (85) | 17 (15) |
| Vaginal Penetration | No | 47 | 42 (89) | 5 (11) |
| | Yes | 467 | 338 (72) | 129 (28) |
| | Unknown (amnesia) | 177 | 145 (82) | 32 (18) |
| | NA | 14 | 8 | 6 |
| Vaginal Penetration-Penis | No | 118 | 91 (77) | 27 (23) |
| | Yes | 396 | 289 (73) | 107 (27) |
| | Unknown (amnesia) | 177 | 145 (82) | 32 (18) |
| | NA | 14 | 8 | 6 |
| Vaginal Penetration-Finger(s) | No | 331 | 248 (75) | 83 (25) |
| | Yes | 183 | 132 (72) | 51 (28) |
| | Unknown (amnesia) | 177 | 145 (82) | 32 (18) |
| | NA | 14 | 8 | 6 |
| Vaginal Penetration-Object(s) | No | 507 | 376 (74) | 131 (26) |
| | Yes | 7 | 4 (57) | 3 (43) |
| | Unknown (amnesia) | 177 | 145 (82) | 32 (18) |
| | NA | 14 | 8 | 6 |
| Number of vaginal penetrants | None | 50 | 43 (86) | 7 (14) |
| | Single | 342 | 249 (73) | 93 (27) |
| | Multiple | 122 | 88 (72) | 34 (28) |
| | Unknown (amnesia) | 177 | 145 (82) | 32 (18) |
| | NA | 14 | 8 | 6 |
| Anal penetration | No | 386 | 289 (75) | 97 (25) |
| | Yes | 113 | 77 (68) | 36 (32) |
| | Unknown (amnesia) | 186 | 154 (83) | 32 (17) |
| | NA | 20 | 13 | 7 |

Table 4: Frequency of anal injuries among patients who had a gynecological examination (n=705). All data are n (row percentage).

| Variable | Responses | All (N = 705) | No anal injury (N = 667) | Anal injury (N = 38) |
|----------------------------|-------------------|--------------------------|-------------------------------------|---------------------------------|
| Age | 14-19 | 212 | 206 (97) | 6 (3) |
| | 20-49 | 451 | 423 (94) | 28 (6) |
| | 50-93 | 42 | 38 (90) | 4 (10) |
| Time to examination | <24h | 357 | 337 (94) | 20 (6) |
| | 24-72h | 223 | 210 (94) | 13 (6) |
| | 72h-7d | 91 | 87 (96) | 4 (4) |
| | > 1 wk. | 32 | 31 (97) | 1 (3) |
| | NA | 2 | 2 | 0 |
| Known assailant | No | 196 | 183 (93) | 13 (7) |
| | Yes | 409 | 387 (95) | 22 (5) |
| | Unknown (amnesia) | 100 | 97 (97) | 3 (3) |
| Number of perpetrators | One | 541 | 512 (95) | 29 (5) |
| | Multiple | 52 | 48 (92) | 4 (8) |
| | Unknown (amnesia) | 112 | 107 (96) | 5 (4) |
| Anal Penetration | No | 386 | 380 (98) | 6 (2) |
| | Yes | 113 | 89 (79) | 24 (21) |
| | Unknown (amnesia) | 186 | 180 (97) | 6 (3) |
| | NA | 14 | 18 | 2 |
| Anal penetration-Penis | No | 415 | 406 (98) | 9 (2) |
| | Yes | 84 | 63 (75) | 21 (25) |
| | Unknown (amnesia) | 186 | 180 (97) | 6 (3) |
| | NA | 20 | 18 | 2 |
| Anal penetration-Finger(s) | No | 462 | 436 (94) | 26 (6) |
| | Yes | 37 | 33 (89) | 4 (11) |
| | Unknown (amnesia) | 186 | 180 (97) | 6 (3) |
| | NA | 20 | 18 | 2 |
| Anal penetration-Object | No | 496 | 467 (94) | 29 (6) |
| | Yes | 3 | 2 (67) | 1 (33) |
| | Unknown (amnesia) | 186 | 180 (97) | 6 (3) |
| | NA | 20 | 18 | 2 |
| Number of anal penetrants | None | 386 | 380 (98) | 6 (2) |
| | Single | 102 | 80 (78) | 22 (22) |
| | Multiple | 11 | 9 (82) | 2 (18) |
| | Unknown (amnesia) | 186 | 180 (97) | 6 (3) |
| | NA | 20 | 18 | 2 |
| Vaginal penetration | No | 47 | 40 (85) | 7 (15) |
| | Yes | 467 | 445 (95) | 22 (5) |
| | Unknown (amnesia) | 177 | 169 (95) | 8 (5) |
| | NA | 14 | 13 | 1 |

Table 5: Factors according to timing of Sexual Assault Medico-Legal Consultation. All data are n (row percentage).

| Variable | Modality | All* (N=738) | Late consultation (≥ 24h) (N=364) | Early consultation (< 24 h) (N=374) |
|---|-------------------|-------------------------|--|---|
| Mandated by the Police or the public prosecutor | No | 440 | 252 (57) | 188 (43) |
| | Yes | 298 | 112 (38) | 186 (62) |
| Age | 14-19 | 220 | 101 (46) | 119 (54) |
| | 20-49 | 474 | 238 (50) | 236 (50) |
| | 50-93 | 44 | 25 (57) | 19 (43) |
| Use of physical violence | No | 235 | 119 (51) | 116 (49) |
| | Yes | 336 | 172 (51) | 164 (49) |
| | Unknown (amnesia) | 159 | 70 (44) | 89 (56) |
| | missing | 8 | 3 | 5 |
| Weapon | No | 536 | 270 (50) | 266 (50) |
| | Yes | 31 | 18 (58) | 13 (42) |
| | Unknown | 162 | 72 (44) | 90 (56) |
| | Missing | 9 | 4 | 5 |
| Amnesia | No | 473 | 233 (49) | 240 (51) |
| | Yes | 265 | 131 (49) | 134 (51) |
| Known assailant | No | 206 | 88 (43) | 118 (57) |
| | Yes | 430 | 240 (56) | 190 (44) |
| | Unknown (amnesia) | 102 | 36 (35) | 66 (65) |
| Number of perpetrators | One | 568 | 291 (51) | 277 (49) |
| | Multiple | 56 | 29 (52) | 27 (48) |
| | Unknown (amnesia) | 114 | 44 (39) | 70 (61) |
| Alcohol before assault | No | 262 | 157 (60) | 105 (40) |
| | Yes | 442 | 183 (41) | 259 (59) |
| | Unknown | 33 | 23 (70) | 10 (30) |
| | missing | 1 | 1 | 0 |
| Drugs before assault | No | 611 | 310 (51) | 301 (49) |
| | Yes | 121 | 52 (43) | 69 (57) |
| | Missing | 6 | 2 | 4 |
| Vaginal penetration | No | 59 | 31 (53) | 28 (47) |
| | Yes | 485 | 244 (50) | 241 (50) |
| | Unknown (amnesia) | 180 | 85 (47) | 95 (53) |
| | missing | 14 | 4 | 10 |
| Vaginal penetration-Penis | No | 134 | 64 (48) | 70 (52) |
| | Yes | 410 | 211 (51) | 199 (49) |
| | Unknown (amnesia) | 180 | 85 (47) | 95 (53) |
| | missing | 14 | 4 | 10 |
| Vaginal penetration-Finger(s) | No | 348 | 177 (51) | 171 (49) |
| | Yes | 196 | 98 (50) | 98 (50) |
| | Unknown (amnesia) | 180 | 85 (47) | 95 (53) |
| | Missing | 14 | 4 | 10 |
| Vaginal penetration-Object(s) | No | 536 | 268 (50) | 268 (50) |
| | Yes | 8 | 7 (88) | 1 (12) |
| | Unknown (amnesia) | 180 | 85 (47) | 95 (53) |
| | missing | 14 | 4 | 10 |
| Number of vaginal penetrants | None | 62 | 32 (52) | 30 (48) |
| | Single | 350 | 170 (49) | 180 (51) |
| | Multiple | 132 | 73 (55) | 59 (45) |
| | Unknown (amnesia) | 180 | 85 (47) | 95 (53) |
| | Missing | 14 | 4 | 10 |
| Anal Penetration | No | 407 | 199 (49) | 208 (51) |
| | Yes | 122 | 67 (55) | 55 (45) |
| | Unknown (amnesia) | 189 | 89 (47) | 100 (53) |
| | missing | 20 | 9 | 11 |
| Anal Penetration-Penis | No | 438 | 210 (48) | 228 (52) |
| | Yes | 91 | 56 (62) | 35 (38) |
| | Unknown (amnesia) | 189 | 89 (47) | 100 (53) |
| | missing | 20 | 9 | 11 |
| Anal Penetration-Finger(s) | No | 489 | 248 (51) | 241 (49) |
| | Yes | 40 | 18 (45) | 22 (55) |
| | Unknown (amnesia) | 189 | 89 (47) | 100 (53) |
| | missing | 20 | 9 | 11 |
| Anal Penetration-Object(s) | No | 526 | 265 (50) | 261 (50) |
| | Yes | 3 | 1 (33) | 2 (67) |
| | Unknown (amnesia) | 189 | 89 (47) | 100 (53) |
| | missing | 20 | 9 | 11 |
| Number of anal penetrants | None | 407 | 199 (49) | 208 (51) |
| | Single | 110 | 59 (54) | 51 (46) |
| | Multiple | 12 | 8 (67) | 4 (33) |
| | Unknown (amnesia) | 189 | 89 (47) | 100 (53) |
| | Missing | 20 | 9 | 11 |
| Oral Penetration | No | 378 | 187 (49) | 191 (51) |
| | Yes | 154 | 82 (53) | 72 (47) |
| | Unknown (amnesia) | 188 | 87 (46) | 101 (54) |
| | missing | 18 | 8 | 10 |

*time to consultation was missing for 2 women.

Table 6: Frequency of Treatment and Follow-up Appointment. All data are n (row percentage).

| Variable | Modality | N=740 |
|---|----------------|----------|
| Emergency Contraception Prescribed | No | 261 (35) |
| | Yes | 225 (30) |
| | Missing | 254 (34) |
| Gonorrhea Prophylaxis (Ceftriaxone) | No | 135 (18) |
| | Yes | 213 (29) |
| | Missing | 392 (53) |
| Chlamydia Prophylaxis (Azithromycin) | No | 120 (16) |
| | Yes | 251 (34) |
| | Missing | 368 (50) |
| | Not Applicable | 1 |
| Hepatitis B Immunoglobulin/Vaccine | No | 273 (37) |
| | Yes | 111 (15) |
| | Missing | 353 (48) |
| | Not Applicable | 3 |
| PEP Starter and PEP Prescribed | No | 201 (27) |
| | Yes | 226 (31) |
| | Missing | 311 (42) |
| | Not Applicable | 2 |
| Appointment with Infectious Disease Department Proposed (HUG) | | N=440 |
| | No | 73 (17) |
| | Yes | 154 (35) |
| | Missing | 213 (48) |
| | Not Applicable | 1 |
| UIMPV Appointment Proposed (HUG) | | N=440 |
| | No | 49 (11) |
| | Yes | 218 (50) |
| | Missing | 173 (39) |

Table 7: Alcohol consumption according to perpetrator type (when known). All data are n (row percentage).

| Type of perpetrator | N | No alcohol (N=264) | Alcohol (N=442) | Unknown consumption (N=33) |
|---|-----|--------------------|-----------------|----------------------------|
| Friend/colleague/peer/acquaintance | 226 | 93 (41) | 127 (56) | 6 (3) |
| Unknown (Perpetrator unknown to survivor) | 206 | 51 (25) | 142 (69) | 13 (6) |
| Unknown (amnesia) | 103 | 10 (10) | 90 (87) | 3 (3) |
| Current intimate partner | 73 | 45 (62) | 22 (30) | 6 (8) |
| Other (known to survivor) | 39 | 17 (44) | 19 (49) | 3 (8) |
| Former intimate partner | 37 | 19 (51) | 16 (43) | 2 (5) |
| Other (unknown to survivor) | 14 | 2 (14) | 11 (79) | 1 (7) |
| Family member | 13 | 7 (54) | 6 (46) | 0 (0) |
| Social network/internet acquaintance | 12 | 8 (67) | 4 (33) | 0 (0) |
| Authority Figure/care provider | 10 | 9 (90) | 1 (10) | 0 (0) |
| Missing | 6 | 3 (50) | 3 (50) | 0 (0) |
| NA | 1 | NA | 1 | NA |

Of the patients who were not using a form of contraception, were not pregnant, or menopausal, 264 reported penile-vaginal penetration and/or penile-anal penetration. Of these 264 patients, 118 received emergency contraception (45%) while 34 (13%) did not. The reason that the 34 eligible patients did not receive emergency contraception was either because they refused (n=12) or the reason that no contraception was given was unknown (n=22). It is unknown whether 111 patients (42%) received emergency contraception or not.

Antibiotic prophylaxis for Gonorrhea (Ceftriaxone 500 mg) was prescribed for 29% of the victims, while antibiotic prophylaxis for Chlamydia (Azithromycin 1 g) was prescribed for 34% of the victims. Similarly, post-exposure prophylaxis to protect against HIV infection (HIV-PEP Emtricitabine/Tenofovir and Lopinavir/Ritonavir) was prescribed in 31% of cases, while its prescription is unknown for 42% of cases. In Geneva, 35% of the patients were recommended to attend a follow-up appointment with an infectious disease specialist.

Discussion

Our study highlights the key sociodemographic and assault characteristics of victims reporting sexual assault between 2018 and 2021 in the cantons of Geneva and Vaud, Switzerland. These results can be used to make evidence-based and informed prevention, care, and education campaigns against sexual assault for both men and women, also based on attitudes and behaviours toward rape and rape culture, to help prevent rape myth and sexual assault.

Prevention

Rape does not necessarily involve a stranger.

One of the more common myths about rape and sexual assault is that rape usually involves a stranger. However, as has also been shown in large-scale surveys of violence and gender relations, our results highlight that rape does not necessarily involve a stranger, since 58% of the patients who have consulted our services, reported knowing the assailant⁽³⁹⁾. However, the population who consulted the emergency departments differs from the population that attended the LAVI centers: in comparison with the clients of the LAVI centers, our population is younger, and the assailant is not often an intimate partner, but rather friends, colleagues, or acquaintances (53%). Victims of intimate partner violence may report the sexual assault less frequently, or never, or elsewhere than the emergency department. This is important not only from an epidemiological perspective, but critical when planning how to provide medical treatment and follow-up for different populations and when planning sensitization and training of healthcare professionals.

Weekends/Summer

Our results highlight a key message to help improve service provision for victims of sexual assault as well as prevention and education strategies: sexual assaults reporting at the emergency are more frequent during the summer months and on the weekends. Swiss hospital emergency departments should be aware of an increased incidence of sexual assaults during these times and plan accordingly. A report analyzing seasonal patterns in crime from 1993-2010 in the United States showed similar results in that rape and sexual assault rates were higher during the summer than winter, spring and fall⁽⁴⁰⁾. However, it is unknown why these crimes are more likely to occur during the summer and whether it is in relationship with the temperature,

more hours of daylight, more flexible vacation-like schedules, or a different amount of layers of clothes for both the victim and the assailant⁽⁴¹⁾. A report analysing sexual assault patterns by day of the week in the UK also showed similar results with more sexual assault occurring on the weekends (Friday, Saturday, Sunday). They also found that as the weather improved, more people are outside socialising, and for longer and later, leading to an increase of sexual assault⁽⁴¹⁾. Prevention efforts and education campaigns could be in full effect during summer festivals and summer nightlife activities, including bringing attention to and demystifying rape myths originating from common stereotypes⁽⁴²⁾.

Existing and future information sources and campaigns could cover both prevention messages and education on what to do in case of sexual assault, such as when, where and why to consult an emergency department. The official Vaud website already explains where and how to seek medical care after a sexual assault⁽⁴³⁾. The Geneva canton website mainly refers to the police and mentions the possibility of consulting the hospital to collect evidence of the assault⁽⁴⁴⁾. Available information could be updated with clear indications on how the evidence is collected and the healthcare that victims can and will receive, even when they do not want to collect evidence and press charges but simply receive prophylactic treatments, counselling, information and psychological support.

Amnesia, Substance Use, Trauma

Many cross-sectional studies have found a significant relationship between alcohol consumption (by the victim, the perpetrator or both) and sexual assault^(30,45-47). Alcohol is commonly noted as a risk factor for sexual assault perpetration, with between 34% to 74% of sexual violence perpetrators reporting alcohol use at the time of the sexual assault⁽⁴⁸⁻⁵⁰⁾. Alcohol and drug use decreases victim and perpetrator's risk perception and increases vulnerability for exposure to violence^(48,51). In line with previous publications, alcohol and drug use were prevalent in patients reporting sexual assault within our population. Toxicological investigations were not systematically performed and thus we were unable to evaluate the alcohol and drug use of the alleged sexual assault perpetrators. Within the Geneva and Lausanne population of patients reporting sexual assaults, 60% said that alcohol was involved. In comparison to a previous study carried out in the University of Geneva Hospitals, alcohol was consumed by 48% of the population presenting for sexual assault⁽⁴⁵⁾. The fact that children were included in the previous study may explain why alcohol was less frequently found. While other studies reported drug use in up to 34% of sexual assaults, 16% of our victim population reported consuming drugs prior to the assault (n=121)⁽⁵²⁾.

Some researchers differentiate between substance-related victimization or incapacitated rape and forcible rape^(26,28). In these papers, forcible rape involves the use of physical force or threat of force or harm. Incapacitated rape is usually associated with their "voluntary consumption" or an intake of substances without knowledge: "drug or alcohol facilitated rape". Such differentiation has been thought to be useful to inform prevention and information campaigns and be part of a minimum data set on sexual assault^(46,51). According to a review by Testa and Livingston, "it appears that most incidents of incapacitated rape follow voluntary consumption of large amounts of alcohol as opposed to deliberate intoxication of the woman by a perpetrator," particularly among younger women⁽⁴⁶⁾. Alcohol use is less frequently involved in sexual assaults among current intimate partners than any other type of relationship, which is also reflected among our population (Table 7)⁽⁴⁶⁾. Alcohol can be associated with an increased risk of sexual assault, particularly by non-intimate partners^(53,54). Risk increases with heavy alcohol use⁽⁴⁶⁾. WHO defines heavy episodic drinking (HED) as consuming at least 60 grams or more of pure

alcohol during a single occasion⁽⁵⁵⁾. A consumption of 60 grams of pure alcohol corresponds approximately to 6 standard alcoholic drinks, (For example, 1 glass of wine (1 dl) 12% vol=9.6 g ethanol, 1 beer (3 dl) 4.5% vol = 10.8 g ethanol^(55,56)). For future research and prevention efforts, we would like to be able to differentiate between heavy episodic drinking and other types of consumption. Knowing more about this could inform prevention and risk reduction programs. Future prevention campaigns in Switzerland could use our data to promote awareness on safe and consensual sex when alcohol is involved and engaging in a community-based approach to avoid putting the weight of prevention only into women's shoulders.

Heavy alcohol use might contribute to amnesia indeed half of the patients who reported alcohol consumption also reported amnesia against less than 15% with amnesia without having drunk alcohol. However, we are unable to draw conclusions in our sample and know when and how amnesia is related to alcohol or other substance consumption, trauma or several associated causes. Peritraumatic dissociation is defined as, "a complex array of reactions at the time of a trauma that include depersonalisation, derealisation, dissociative amnesia, out-of-body experiences, emotional numbness, and altered time perception"⁽⁵⁷⁾. Previous studies found correlations between such peritraumatic dissociations and acute stress disorder and post-traumatic stress disorder⁽⁵⁷⁻⁵⁹⁾. Training to increase professionals' knowledge and recognition of risk factors associated with acute stress disorder could improve the healthcare of those patients that require interventions in the acute phase to decrease the risk of developing a mental health disorder⁽⁵⁹⁾.

Re-victimization

Having previously experienced sexual assault is a key vulnerability factor for sexual re-victimization⁽⁶⁰⁻⁶²⁾. A similar 10-year retrospective Italian study found 26.7% of the women reporting sexual assault had been previously exposed to sexual assault. Among our sample, 19% of the sexual assaults reported were among patients who had already experienced at least one prior sexual assault, while 64% of the sexual assault reports were missing information on whether a prior assault had occurred. In a recently published meta-analysis, almost 50% of all child sexual abuse victims are sexually re-victimized at some point in the future⁽⁶²⁾. Such a high prevalence of re-victimization highlights the need to ask any patient systematically if they are experiencing violence or if they have experienced violence to provide necessary support. It also highlights the need to inform both patients and health professionals that a previous assault increases the risk of experiencing another assault so that this can be eventually prevented or treated accordingly. Recently, researchers have found a relationship between hypersexuality or compulsive sexual behaviour and experienced trauma^(63,64). Post-traumatic symptoms could lead to compulsive sexual behaviour through the pathway of depression, shame and guilt⁽⁶⁴⁾.

Care

Medico-legal sexual assault consultations take place within the emergency department setting usually within a short time frame making them a unique opportunity to provide patients with the necessary treatment for STIs, unwanted pregnancy, and mental health symptoms. In our sample, 83% of the patients sought consultation for their sexual assault within 72 hours.

Only 31% (n=230) reported that they were using a contraceptive, which is extremely few in comparison to the two thirds of women reportedly using one or more contraceptive methods by the Federal Statistical Office⁽⁶⁵⁾. Furthermore, only between 6 and 11% of our sample reported that a condom was used in the assault. The emergency contraceptive (ulipristal acetate 30 g or a copper intrauterine device) can be taken up to 5 days (120 hours) of unprotected sex. Such information should be widely available in information campaigns.

31% of the patients received the Post-Exposure Prophylaxis starter kit, until they had a follow-up meeting with the infectious diseases specialists (HUG) or the gynecologist (CHUV). Missing information on the patient's sexual assault report in regard to treatments was a limitation during our retrospective review. Many reports did not include information on follow-up treatment and appointments. (Missing data: infectious disease follow-up: 61%, Emergency contraception: 34%, Prophylactic Antibiotics for Gonorrhoea: 53%, Prophylactic Antibiotics for Chlamydia: 50%). In comparison to a study from the US looking at 939 sexual assault records and medications prescribed following emergency room visits, 45.3% of their patients received emergency contraception, while 97.3% did not receive antiviral post-exposure prophylactic medication. They also found that victims of sexual assault perpetrated by an intimate partner had a decreased likelihood by 48% of being prescribed antibiotics and emergency contraception⁽⁶⁶⁾. Studies as well as our clinical experience show that factors such as a patient's concern for STIs, HIV and pregnancy are associated with treatment-seeking behaviour^(67,68). Future prospective studies can add information on indications, prescriptions, acceptance and compliance to antibiotics, antiretrovirals and emergency contraception that we are currently unable to explore. Our protocols do not contain recommendations and information on Human Papilloma Virus (HPV). However, persons who have been sexually assaulted are at risk of acquiring HPV infection, and the efficacy of the HPV vaccine is high. Given the age of the population in this cohort, information and care could also address HPV, cervical screening, and vaccination of HPV where relevant^(69,70).

COVID-19

Many studies found a significant decrease in the number of patients presenting for emergency care services during the COVID-19 pandemic, including women seeking emergency care for sexual assault⁽⁷¹⁻⁷⁵⁾. The literature shows that reported sexual assault cases dropped to between 30% and 50% during the early days of the pandemic^(74,75). Potential hypotheses include the reduction of some forms of sexual violence during this period, fear of exposure to COVID-19 in the emergency departments, and lack of awareness of availability of services. While there may have been fewer absolute cases of sexual assault reported, the perpetrator was more likely to be the intimate partner, ex-intimate partner or family member compared with pre-COVID-19 reports^(74,75). Many countries have reported an increase in domestic violence during the coronavirus pandemic (COVID-19), in particular a higher incidence and severity of violence^(76,77). While we do not have data on domestic violence reports during COVID-19, our results also show that fewer women reported for sexual assault in the Geneva and Lausanne University gynecologic ED in 2020, than in 2018, 2019 and 2021.

Injury Detection/Documentation of evidence

Medico-legal research has proven that documented injury can be an important factor in predicting the outcome of sexual assault prosecution and thus, injury documentation is important in the forensic examination of sexual assault victims⁽⁷⁸⁻⁸⁰⁾. 45% of our patients bathed or washed themselves prior to coming to the emergency department. Although it is still possible to collect evidence, it is best for victims not to bathe, shower, brush teeth or go to the bathroom before coming for a medico-legal exam. Ano-genital injuries were more frequent in patients who were examined within 24 hours of the assault⁽⁸¹⁾. In the literature, ano-genital injury prevalence has been reported in a wide range of 6% to 87% of victims seeking emergency care for sexual assault⁽⁸¹⁾. Our study found that 28% (n=196) of the victims had some type of ano-genital injury. Research on injuries from consensual sexual intercourse also shows that genital lesions are also present in a wide range of patients, from 6% to 73% and when excluding minors, from 6% to 55%⁽⁸²⁾.

Genital injury

Research has shown that the person examining's experience and level of training in the detection of sexual assault injuries may influence the prevalence of genital injuries found^(83,84). As the Geneva and Lausanne University Hospitals have residents in different stages of their training, there may be a variation of what junior and senior doctors detect as a genital injury. In Switzerland, the cultivation of dedicated experts solely devoted to documenting and caring for sexual assault victims has not yet been developed. Another factor contributing to the sensitivity of ano-genital detection is whether gross visualization, toluidine blue dye enhancement, colposcopy or anoscopy were used. Colposcopy is also used for documentation purposes, for interpretation and review by experts as well as for education purposes.

Studies have shown that trained forensic doctors using colposcopy obtain evidence of ano-genital injury in 71% to 86% of rape victims^(85,86), which is higher than the 28% of ano-genital injuries found in our sample⁽⁸⁶⁾. These same studies found that there was little difference in the detection of ano-genital injuries when gross visualization and colposcopy were used, if the examiner is a highly trained sexual assault expert^(78,86). In our study, we are unable to determine if the colposcope was used systematically even though, both CHUV and HUG protocols state that the colposcope should be used systematically. These findings may indicate the need of improving training in the ano-genital exam and use of colposcope by younger residents. Even though the gynecological exam is conducted by the gynecologists, the forensic residents are also present during the exam and experienced in detecting and recognizing lesions. They can indeed contribute with the gynecologist in the assessment and eventual interpretation of lesions.

Anal injury

Other prevalence studies of anal injuries following anal penetration vary with ranges from 16% to 22.3%^(81,87). Our findings are reflected within this range, with anal injuries present in approximately 21% of the patients who reported anal penetration of any type (penile, digital or with an object). Anal injuries are progressively less frequently detected after 72 hours, which was also echoed in our study⁽⁴⁹⁾.

Anal penetration did not result in visible anal injury in the majority of cases. The external anal examination may be insufficient to visualize anal injury, and anoscopy may be required. Anal injury may also be minimized by the use of body fluids or other lubrication. No published studies have evaluated anal trauma resulting from consensual anal penetration⁽⁸¹⁾. More tears were identified on the anus following toluidine-blue as compared to direct visualization, but not colposcopy⁽⁷⁸⁾.

We hope that our data on sexual assault with anal penetration will contribute to the change of the legal definition of rape in Switzerland.

Body Injuries

We found similar results reconfirming what others have found—bodily injuries (non-genital) are more prevalent than ano-genital injuries in persons who were sexually assaulted⁽⁸¹⁾. Body injuries were recorded in 84% of the sexual assault reports, with injuries to the upper and lower limbs being the most common sites. Forensic doctors recorded body injuries in 63% of the victims seeking emergency care for sexual assault in a study conducted in the Geneva University Hospital from 2005 to 2014⁽⁴⁵⁾. However, minor patients made up 26% of the sample, while this study included persons who were 14 or older. The forensic doctors, even during residency, do not rotate and are trained and experienced in documenting and identifying body lesions. This is a part of their daily practice.

Reporting to Police

In our study, 7% of the survivors clearly stated that they did not intend to press charges, while 17% declared that they intended to bring charges against their aggressor and for an overwhelming 75% of the sexual assaults, we do not have further information, because the information was not included in the report or because the victim had not yet decided if they would bring charges against the perpetrator. In the US, large-scale research studies suggest that only 5-20% of sexual assaults are reported to the police. In the UK, latest estimates from the Crime Survey for England and Wales (CSEW) showed that fewer than one in six (16%) female victims and fewer than one in five (19%) male victims aged 16 to 59 years of sexual assault by rape or penetration since the age of 16 years reported it to the police⁽²⁵⁾. To reiterate, there were 757 rapes reported in 2021 in the Swiss Police Crime Statistics, and 720 sexual assaults⁽²³⁾. If we use the more conservative estimate that only 20% of sexual assaults are reported to the police, one could extrapolate a hypothetical estimate of the number of sexual assaults which would be much higher than 700 (3,785 rapes and 3,600 sexual assaults). There are a wide range of reasons that victims do not report sexual assault to the police such as being ashamed, not having faith in the criminal justice system, fear of retaliation etc. Research also shows that many people who have been sexually assaulted do not necessarily recognize it as such and therefore do not report^(89,90). This may also lead to re-victimization.

Most of the sample included persons from Switzerland (39%) or other European countries (20%). Even though the cantons of Vaud and Geneva differ in terms of foreign population (34% for Vaud and 41% for Geneva), one might wonder if non-Swiss persons consult less frequently after a sexual assault because of economic, insurance, language, access, cultural or information barriers^(43,91). Future information and prevention campaigns could investigate and eventually target/include specifically non-Swiss populations.

Strengths

We describe the use of a reproducible medico-legal protocol for caring for persons that were sexually assaulted as well the forms for reporting their characteristics at the obstetrics and gynecology emergency departments in two Swiss cantons. HUG and CHUV are the two largest hospitals in the French speaking part of Switzerland. We had a large data sample of 740 patients between 2018 and 2021. Because of the careful attention to definitions used for each variable, our study is easily reproducible either in another Swiss canton, or in another country.

Limitations

A large number of persons will never report sexual assault to any type of official agency, whether hospital or police, etc.; and no extraction of administrative data will provide statistics about the extent of hidden sexual assault ⁽²²⁾.

Incomplete data—although both centers collect the same information, the requirements for which questions need a response varies between sites. Demographic data is missing from the reports, which highlights the importance of a nationally standardized database with a pre-defined minimum data set, such as nationality.

Amnesia—Approximately 25% of the patients in our study reported some kind of amnesia, either total or partial. This has a profound impact on the amount of available and exploitable data but is itself an important finding as discussed before. Amnesia could be a manifestation of the trauma of sexual assault (peritraumatic dissociation) or linked with substance use. Future studies need to take it into account in their design and data interpretation.

While we paid careful attention to the definitions of every variable used, there is no existing international classification or terminology to define and describe the injury types that should be used for each anatomical site. Furthermore, although we are unable to provide data on the sexual orientation or gender identity of the patients due to the retrospective nature of the study, we will aim to capture this information in future studies.

When the patients leave the emergency care facilities, they are given follow-up appointments. We are unable to provide data on their short, medium and longer term care received. Whether they attend the follow-up visits, or whether they adhere to the treatment protocols, etc. remains part of the information gap that, we hope, will be covered by our ongoing prospective study.

Conclusion and Recommendations

There is a lack of data regarding sexual assault or rape in Switzerland. Reliable national and regional measurements of sexual assault and its health and social consequences can inform designing effective social, economic, political and health responses. In addition, data are crucial to assess the effects of eventual prevention and support strategies and interventions, to prevent rape myth and sexual assault. We would like to further emphasize the need to collect data from various sources such as LAVI, police, and other associations such as “Viol secours” in addition to the hospital data, because these different sources often receive different populations and who have varying experiences. Our hope is to create a national observatory of sexual assault reports in Swiss Hospitals.

Policy Recommendations

Approaches to gathering hospital data should be made uniform across Switzerland. We recommend a minimum data set with the following variables to be collected across the country’s hospitals where sexual assaults can be reported. Common variable names, response options and definitions should be shared between all sites.

Creating a national observatory and minimum data set requires the full support of the federation and collaboration between many different entities including emergency gynaecological and medico-legal departments. In examples of other mandatory registries, there is usually a legal mandate/law requiring the cantons or institutions to report certain data. For example, the Oncological Disease Registration Act (LEMO RS 818.33) requires doctors, laboratories, hospitals and other private or public institutions in Switzerland to declare cancer and tumor data to a national registry with the aim of creating a complete and fully exhaustive registry of oncological diseases in Switzerland. Similarly, the Swiss Neonatal Network & Follow-up Group (SwissNeoNet) created a Swiss Minimal Neonatal Data Set. All Swiss level III and level IIB institutions are required to provide hospital data for the registry thanks to the Inter-Cantonal Declaration for Highly Specialized Medicine (HSM) of September 22, 2011 ⁽⁹²⁾.

Collecting a standardized sexual violence data set in all locations where medico-legal exams are carried out in Switzerland could improve healthcare professionals’ standardization in their documentation and coding. Classifications, such as the World Health Organization’s (WHO) International Classification of Diseases and Related Health Related Problems (ICD) provide a nationally and internationally comparable system for reporting and recording statistics on diseases and related health problems ⁽⁹³⁾. Standardized nomenclatures and classifications help public health authorities, professionals from different sectors (care, police, legal, associations, and education) and the general public to record information about risk factors, socio-demographic characteristics, the experience of care, and follow-up treatment of sexual assault. Recording data based on an aligned set of variables would allow the creation of a national dataset which could be used to analyse similarities and differences in types of sexual assaults, survivors and perpetrators, which healthcare services are being accessed and what resources are required for planning purposes and improve access, care and healthcare experiences ⁽⁹⁴⁾.

DPI

To improve the standardization and alignment of the sexual assault reports as well as routine electronic collection of data, the results of the present retrospective study helped us to create an electronic case report form integrated into the patient’s electronic health record at HUG, where we can include the documentation of the lesions, the results of the analyses and the documents to be given to the patient (certificate of lesions, lifting of medical secret, work stoppage, follow-up appointments, information on prophylactic treatments, etc.) all within their electronic medical record. Our hope is that such form can be used in different sites in Switzerland and regularly updated.

Figure 4: Electronic Case Report Form in Electronic Health Record

Service de gynécologie - CAS - Consultation

EDS : 10938529 - Passage du 23.05.2008 00:00 - Service de pathologie clinique (Laboratoire de

Données administratives

Date et heure de l'entretien 16.12.2022 15:21

Date et heure du début de l'examen

Référence CURML

Examen réalisé en présence d'un accompagnant

Examen réalisé sans accompagnant

Gynécologue + Moi

Légiste + Moi

Infirmière + Moi

Victime

Venu(e) seul(e)

Amené(e) par la police par un tiers

Genève, le 16 décembre 2022

CAS - CONSULTATION / Entretien du vendredi 16 décembre 2022 à 15:21
N / Réf :

Concerné : Madame Accreditation TEST,
née le 01.01.1970 - 52 ans
N° EDS : 10938529

Adresse : Micheli-du-Crest 24
CH - 1211 GENEVE 14
Tél : Mobile / Fixe

DONNÉES ADMINISTRATIVES
Genre sexuel actuel - Femme
Genre assigné à la naissance - Femme
Situation familiale
Etat civil :
Origines de la patiente
Lieu de naissance :
Nationalité :
Professions et études
Profession actuelle :
Occupation avant admission : en formation (école, apprentissage, études)
Niveau d'études : 5 - haute école spécialisée / école prof. sup.

Swiss Sexual Violence Standardized Data Set

Victim Characteristics

Victim sex, Victim Gender, **Victim Age**, Civil Status, Victim Nationality, Sexual Orientation, Reproductive Status (Menopause, Amenorrhea, Currently menstruating or date of last menstrual period, Contraception Use, Pregnancy, Last Menstrual Period), Height, Weight, Comorbidities

Assault Characteristics

Assault date(s)/Time, Season, Day of the week, Number of perpetrators, **Location of assault**, Mandated by the Police or the public prosecutor, Whether victim pressing charges, **Survivor-perpetrator relationship**, **Perpetrator sex**, **Perpetrator age**, First time assault, Prior assault during the year, First time vaginal penetration, Amnesia, Type of sexual assault (Penetration: Vaginal, Anal, Oral; Penetrant: Penis, Digit, Mouth, Object; Use of condom: Vaginal, Anal, Oral; Ejaculation: Vaginal, Anal, Oral; Non-Genital Acts; Other), Number of penetrants, Alcohol Use (voluntary or involuntary, heavy episodic drinking), Drug Use (voluntary or involuntary, type)

Violence Characteristics

Recurrent violence, Domestic violence, **Use of physical violence (force)**, **Use of psychological violence**, Use of weapon(s)

Post-Assault Characteristics

Time elapsed since assault, Bathed, Showered, Washed and/or changed clothing, Vaginal douche, Enema, Defecated, Vomited, Brushed teeth, Rinsed mouth

Forensic Evidence

Forensic Examination Conducted, Head and/or neck trauma; Presence or absence of bodily injury [Site: Head/Face (head, nose, eyes, ears, mouth), neck, torso (breasts, thorax, abdomen), back, buttocks, upper limbs, and lower limbs]; Type: Ecchymosis (bruise), Dermabrasion (abrasion), Erythema (redness), Edema (swelling), Wound, Fracture and contusion, Petechiae; Date of recent sexual contact (past 7 days). Recovered evidence: Blood and urine samples for possible alcohol and/or toxicology testing, Clothing, Oral and ano-genital swabs and smears, Body swabs, Saliva sample for DNA analysis and comparison, Tampon, sanitary napkin or other feminine hygiene product

Gynecological Exam

Presence or absence of ano-genital injury [Site: Vulva (outer labia, inner labia, posterior commissure, fourchette, vestibular fossa), urethral opening (meatus), vagina, hymen, cervix, perineal raphe, anus and rectum]; Type: Ecchymosis (bruise), Dermabrasion (abrasion), Erythema (redness), Edema (swelling), Laceration, Contusion), Use of colposcope and/or anoscope or gross visualization

Service Referrals

Referral for services, Services Provided, Patient Experience

Items in bold are recommended from the WHO minimum data set

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Characteristics

Demographic Characteristics

Civil Status: Civil status according to patient's sexual assault report: single, married, divorced, cohabitation, separated, widowed or unknown.

Patient's Nationality (Region): Regions were determined by patient's nationality. Switzerland, Europe, Americas, Sub-Saharan Africa, Middle East and North Africa, Asia, Pacific and Unknown. If patient had dual Swiss-citizenship, they were included as Swiss.

Known/unknown alleged perpetrator: a patient identifies whether they knew their perpetrator prior to the assault. In the event that there were multiple assailants, it is possible that the survivor may have known one and not the other(s).

Patient/perpetrator(s) relationship: Based on UN Women and WHO Proposed Response Options and Recommended Definitions for Minimum Data Set⁽⁹⁴⁾: Current intimate partner, Former intimate partner, Family member, Friend/colleague/peer or acquaintance, Authority figure/care provider, Other—known to survivor, Other—unknown to survivor.

Season: Winter: December, January, February; Spring: March, April, May; Summer: June, July, August; Fall: September, October, November

Location: Based on UN Women and WHO Proposed Response Options and Recommended Definitions for Minimum Data Set⁽⁶⁷⁾: Home: home of victim, home of perpetrator, home of victim and perpetrator, Friend's home; Public: street, open area, public transport, public toilets, forest, park; School; Institution: prison; Institutional care setting: hospitals, psychiatric facilities, residential care; Work; Other

Assault Characteristics

Mandated by the Police or the public prosecutor: In Switzerland, police investigate sexual assault ex-officio (with the exception of sexual harassment, prosecuted on complaint). When the patient comes to the local hospital with the help of the authorities, the process is called "mandated by the Police or the public prosecutor or under mandate". When the patient comes to the hospital on her own volition without the assistance of the local authorities, the process is not "mandated by the Police or the public prosecutor". Even without a mandate, the patient can decide if they want to press charges at any point during or after the medico-legal examination.

Gynecological Exam: Examination and documentation of the presence or absence of ano-genital lesions by a gynecologist using "direct visualization" and colposcopy, without staining techniques to examine the vulva, urethral opening (meatus), vagina, hymen, cervix, perineal raphe, anus and rectum.

Bacteriological samples and PCR tests for Chlamydia trachomatis and Neisseria gonorrhoeae are collected from the vagina and cervix.

Injury Types: Injuries were classified into Ecchymosis (bruise), Dermabrasion (abrasion), erythema (redness), edema (swelling), laceration, fracture and contusion. In French: Ecchymose, Dermabrasion, Erythème, Œdème, Déchirure, fracture, Plaie, Érosion, Contusion.

Bodily injury (non ano-genital injuries): Injuries found on the head/face (head, nose, eyes, ears, mouth), neck, torso (breasts, thorax, abdomen), back, buttocks, upper limbs, and lower limbs.

Ano-genital injuries: Injuries found on the vulva (outer labia, inner labia, posterior commissure, vestibular fossa), urethral opening (meatus), vagina, hymen, cervix, perineal raphe, anus and rectum.

Anal injury: Injuries found on the perianal region, anus and rectum.

Genital injury: Injuries found on the vulva (external labia, internal labia, posterior commissure, vestibular fossa), urethral opening (meatus), vagina, hymen, cervix and perineal raphe.

Number of penetrants: refers to the number (e.g. 0, single, multiple) and type of penetrants (e.g. penis, finger (digit), object).

Abbreviations list

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|---------------|---|--------------|--|
| AIDS | Acquired Immunodeficiency Syndrome | HRA | Human Research Act |
| CCER | Geneva Regional Ethics Committee | HRO | Human Research Ordinance |
| CHUV | Lausanne University Hospital | HSM | Highly Specialized Medicine |
| CSMPA | Federal Act on Compulsory Social Measures and Placements prior to 1981 | HUG | Geneva University Hospitals |
| CURML | The Romandy University Centre of Legal Medicine | ICD | International Classification of Diseases and Health Related Problems |
| DPI | Dossier Patient Intégré | LAVI | Crime Victims Assistance Act |
| FOGE | Swiss Federal Office for Gender Equality | SDG | Sustainable Development Goals |
| GREVIO | Group of Experts on Action against Violence against Women and Domestic Violence | STI | Sexually transmitted infections |
| HIV | Human Immunodeficiency Virus | UIMPV | Interdisciplinary Unit for Medicine and Violence Prevention |
| HPV | Human Papilloma Virus | WHO | World Health Organization |

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