

# Online or off-line victimisation and psychological well-being: a comparison of sexual-minority and heterosexual youth

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**Abstract** The purpose of this study was to compare sexual-minority and heterosexual youths' exposure to sexual abuse off-line, problematic sexual meetings off-line with person/s met online and online harassment with regard to prevalence, psychological well-being and support seeking. A nationally representative sample of 3,432 Swedish high school seniors completed an anonymous school-based survey about sexuality, health, sexual abuse and online-related sexual victimisation or harassment. Sexual-minority adolescents reported a greater rate of sexual abuse, problematic sexual meetings off-line with person/s met online and online harassment, compared to heterosexual youth. When compared to non-victimised heterosexual adolescents, victimised heterosexual adolescents and non-victimised and victimised sexual-minority adolescents reported more psychiatric symptoms, lower self-esteem and a weaker sense of coherence. Same-sex sexual orientation was related to more psychiatric symptoms, lower self-esteem and a weaker sense of coherence even when controlled for victimisation and gender. Compared to victimised heterosexual adolescents, victimised sexual-minority adolescents were more likely to seek support because of sexual abuse (females) or Internet-related problems (males and females). Results for sexual-minority youth were basically the same whether sexual orientation was assessed as sexual identity or as sexual or emotional

attraction. Health care providers are challenged to not only provide the same care to sexual-minority youth who seek counselling or psychiatric treatment for mental health problems or problems related to victimisation that all adolescents should receive but also to find ways to address topics like prevention of sexual abuse and risk-taking behaviour online or off-line.

**Keywords** Adolescent · Harassment · Health surveys · Internet · Sexual abuse · Sexual orientation · Support seeking

## Introduction

The Internet is an essential part of most young people's life. A recent study with more than 25,000 children aged 9–16 years from 25 European countries showed that 93 % of the participants went online at least weekly [1]. For many young people, the Internet provides opportunities they may not have in “real life”. The Internet has been shown to be a particularly important way to address sensitive issues for sexual-minority youth, as it gives the opportunity for sexual self-exploration in a relatively safe context where it is possible to be anonymous and easier to communicate than in a face-to-face meeting [2]. A study with same-sex attracted youth aged 14–21 years showed that they used the Internet to practise their sexual orientation, find same-sex friendships or intimacy, disclose their sexual orientation, inform themselves about same-sex sexuality, practise sex online or find out about and experience themselves as part of the gay community [3]. Sexual-minority youth may grow up in a context of “compulsory heterosexuality” which can be a lonely and stressful experience [3, 4] and they may perceive the

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Internet as a “lifeline” [5]. As a consequence, it is possible that sexual-minority youth use the Internet in more risky and potentially harmful ways than heterosexual youth. For example, they could be more ready to meet someone face to face that they first met on the Internet, as there may be few other possibilities to meet other sexual-minority people for friendship or sexual or romantic relationships in “real life”. One-quarter of the crimes analysed in a study about Internet-related sex crimes with youth victims included relationships between teenage boys and adult men, and it was concluded that gay or questioning boys who use the Internet to find contacts or information about sexual orientation may be vulnerable to adults who seek to initiate sexual relationships [6]. So far, research about Internet-related victimisation of sexual-minority youth is limited.

There is some evidence that sexual-minority youth may show more risky sexual behaviour than heterosexual youth. For example, 16.7 % of males in a sample of 17- to 25-year-old members of a Swedish LGB-organisation reported having had sexual intercourse before the age of 14 years as compared with 10.3 % of males in a population-based sample of 18-year-old high school students [7]. In that same study, 7.2 % in the LGB-sample reported that they had sex for money at least once (3.9 % when they were younger than 18 years old) as compared to 1.5 % of students in the high school sample. Previous research has shown that sexual-minority youth reported lower psychological well-being [8], even when controlled for childhood victimisation [9].

Previous research has shown that online and off-line victimisations were often combined for youth in general [10, 11]. A recent meta-analysis showed that sexual-minority youth were on average more likely to experience sexual abuse (OR 3.9), parental physical abuse (OR 2.3), peer assault at school (OR 2.7) or to miss school through fear (OR 3.9) [12]. In addition, sexual-minority youth reported higher rates of mental health problems such as major depression, anxiety disorders, alcohol dependence, illicit drug dependence or suicide attempts, even when controlled for childhood victimisation [9].

The impact of child sexual abuse on victims' health has been extensively investigated in previous research [13], while there is more limited research on health effects of child sexual abuse on sexual-minorities [9]. The concept of the sense of coherence [14] may be helpful in further investigating the associations between victimisation and health. Sense of coherence is a global orientation to life that includes three components: comprehensibility (understanding of situations and stimuli as structured, predictable and explicable), manageability (belief that the resources needed to meet demands are available) and meaningfulness (feeling that life makes sense and that demands are challenges, worthy of investment and engagement). A strong

sense of coherence is expected to be related to successful coping with stressful situations. In previous research, sexual abuse was strongly related to a weak sense of coherence among male and female adolescents, even after adjustment for socio-demographic variables, family structure and parental bonding [15]. To our knowledge, there is no previous research about sexual-minority youth's sense of coherence. It could be difficult for many sexual-minority youth to develop a strong sense of coherence, especially if they lack role models with the same sexual orientation, live in a hetero-normative context, are not open or have received negative reactions about their sexual orientation.

Health-care providers who meet sexual-minority youth may not always be aware of the youth's sexual orientation. In a study about sexual-minority youth's health care preferences, some youth stated that sexual orientation is not a medical issue and that clinicians should focus solely on the presenting physical concern, while others believed that a clinician who was informed about their sexual orientation could deliver better care [16]. Also, a majority of sexually abused adolescents disclose the abuse, often to a friend of their own age but seldom to a professional [17]. When the disclosure occurs in a supportive climate, the effect on the victims and their recovery can be expected to be beneficial, while there may be social costs and even detrimental effects of disclosure when the response to the disclosure is negative [18]. A review by Roberts et al. [19] showed that research about sexual trauma disclosure that addresses diversity such as non-heterosexual orientation was scarce.

This study is based on survey data from a nationally representative sample with Swedish late adolescents. It has been recommended that researchers use several dimensions of sexual orientation in health surveys with adolescents, if possible, as measures of different dimensions may be tapping somewhat different groups of sexual-minority youth [20, 21]. In the survey that was used in the current study, youth answered questions about three dimensions of sexual orientation—sexual identity, sexual or emotional attraction and sexual behaviour. The rates for these dimensions and the overlap between different dimensions have been reported in detail elsewhere (Priebe and Svedin, under review). In brief, dimensions of sexual orientation were significantly associated with each other, but rates for different dimensions varied substantially, even between males and females. For example, more adolescents were identified as sexual minority by sexual or emotional attraction than by sexual identity. It seems that different dimensions of sexual orientation include partially different groups of adolescents as sexual minority. As a consequence, prevalence rates for different types of victimisation could vary depending on how sexual orientation was assessed. In the study that is presented in this paper, sexual identity was used as the main dimension of sexual orientation. All

analyses were also carried out using emotional or sexual attraction as a measure of sexual orientation in order to validate the results.

Previous research has shown that female adolescents report sexual abuse more often than male adolescents [22, 23]. Furthermore, gender differences in sexual identity development have been found among sexual-minority youth [24, 25]. Because of that, the data in our study have been analysed separately for female and male adolescents.

The purpose of the study was to investigate whether adolescents with same-sex sexual orientation were, compared to heterosexual youth, more likely to report victimisation related to the Internet, specifically problematic sexual meetings off-line with person/s they first met online, or online harassment. In addition, the prevalence of sexual abuse was investigated. It was hypothesised that compared with non-victimised heterosexual youth, victimised heterosexual youth and both non-victimised and victimised sexual-minority youth would have more psychiatric symptoms, lower self-esteem and a weaker sense of coherence. It was also expected that different types of victimisation, sexual orientation and gender would contribute independently to psychological well-being. Victimised heterosexual and sexual-minority youths' informal or formal support seeking was investigated in an explorative manner.

## Methods

### Participants

Data collection was carried out within the project “Youth, sex and the Internet” on behalf of The Swedish National Board for Youth Affairs and the Swedish Government. A representative sample of Swedish high school seniors was selected by Statistics Sweden based on information from the Swedish School Register [26]. The sampling frame consisted of all students in the grade before the last grade of high school in 2007 at schools with at least ten students. In total, there were 123,551 students in 754 schools. The sampling frame was stratified for the number of students enrolled at each school (three groups 10–190, 191–360 and >360 students) and educational programme (20 programmes). A random sample of 150 schools with 7,700 students was selected, of which 119 schools chose to participate. Of the 5,792 enrolled students at these schools, 3,503 agreed to participate in the study, resulting in a response rate of 60.5 %. Five students were excluded from the sample due to unserious or incomplete questionnaires. The study was conducted in 2009 when the participants were in their last year of high school.

Participants who did not answer the question about gender ( $n = 38$ ) or who chose the alternative “the division

into male or female does not fit me” ( $n = 28$ ) were not included in this study. The sample used in this study consisted of 3,432 participants, 1,594 (46.4 %) male and 1,838 (53.6 %) female adolescents with a mean age of 18.3 years (range 16–22). According to official statistics, 52 % of Swedish 18-year-olds who enrolled at high school in 2009 were males and 48 % females [27]. Thus, females were slightly overrepresented in the sample. About 90 % of Swedish 18-year-olds are enrolled in high school, 2 % are studying in other educational alternatives such as college and 8 % are not studying [27].

### Procedure

An informational letter was sent to the principal of each school. Two weeks later, a letter with additional information was sent to the principals together with the questionnaires and information for school staff. Students received written information about the study and gave informed consent when choosing to fill in the questionnaire. The anonymous paper-and-pencil questionnaire was distributed by school staff and completed in the classroom during school hours. Questionnaires were returned in unmarked envelopes, individually sealed by each participant. Participants received written information about where to get counselling if participation had caused feelings of distress. Participants did not receive any personal incentives. Each school was offered 1,000 Swedish crowns as compensation for taking part in the study. Those schools that had not returned any questionnaires between 3 and 4 weeks after they had received them got a reminder by telephone. The study was approved by the Regional Ethical Review Board in Linköping, Sweden.

### Measures

The questionnaire was developed in collaboration with the Swedish Federation for Lesbian, Gay, Bisexual and Transgender Rights (RFSL) based on a questionnaire used in a previous study [28]. It consisted of 88 questions covering the following issues: (1) socio-demographic data and background, (2) lifestyle and health, (3) love and consensual sexual experiences, (4) emotional, sexual and physical abuse experiences, (5) sexually coercive behaviour, (6) use of Internet and mobile phones, problematic sexual meetings off-line with person/s met online and online harassment, (7) experiences of selling sex, (8) use of pornography and (9) support seeking.

### *Sexual abuse off-line*

The participants were asked if they ever had experienced any of the following *against their will*: (1) somebody

exposed himself/herself indecently to you, (2) somebody touched your private parts or tried to undress you in order to have sex with you, (3) you masturbated somebody else, (4) you had vaginal intercourse, (5) you had oral sex, (6) you had anal sex. Any type of sexual abuse was defined as any of alternatives (1)–(7). Penetrating abuse was defined as any of alternatives (4), (5) or (6). Follow-up questions about frequency of sexual abuse, age at first abuse incident, and offender's age and sex at first abuse incident were also asked. Both abuse by peers and by older offenders were included.

#### *Problematic sexual meetings off-line with person/s met online*

Those participants who reported that they had met persons in real life who they had first met online were asked "Have you ever experienced that (1) the person/s you met tried to persuade you to have sex with him/her/them against your will; (2) the person/s you met pressured or forced you to have sex; (3) the person/s you met gave you money or gifts in order to have sex with you?" Response alternatives were "yes, once," "yes, several times," and "no, never." One or several problematic sexual meetings were coded as "yes", separate for each type (1–3) as well as combined for all types of problematic sexual meetings off-line. A follow-up question about age at first problematic sexual meeting off-line was also asked.

#### *Online harassment*

Participants were asked whether they had received harassing messages via Internet or mobile phone during the past 12 months. Specifically, they were asked if they (1) had been harassed by text messages, (2) received threats via mobile phone, (3) found that others spread rumours or wrote nasty things about them on the Internet or (4) found that others disseminated sexual pictures/films of them electronically or digitally. Response alternatives were "yes, once," "yes, several times," and "no, never." One or several events were coded as "yes", separate for each type (1–4) as well as combined for all types of online harassment.

Two dimensions of sexual orientation were measured, sexual identity and emotional or sexual attraction. Sexual identity was the variable of main interest, while emotional or sexual attraction was used to validate the results.

#### *Sexual identity*

The participants were asked to answer the question: "How do you look upon yourself?" with the possible answers "as heterosexual," "as homosexual (lesbian/gay)," "as

bisexual," "unsure" and "none of these." Two categories, heterosexual and sexual minority (including all non-heterosexual answers), were calculated.

#### *Emotional or sexual attraction*

Emotional or sexual attraction was assessed by the following questions: "Some are emotionally and/or sexually attracted by persons of the opposite sex, while some are attracted by persons of the same sex. On a scale measuring your attraction to the opposite sex/the same sex, where would you place yourself?" Both questions had a 5-point scale ranging from no attraction (=1) to strong attraction (=5). A score  $\geq 3$  on the opposite-sex scale in combination with a score  $< 3$  on the same-sex scale was interpreted as heterosexual attraction. A low score ( $< 3$ ) on the opposite-sex scale and a high score ( $\geq 3$ ) on the same-sex scale was interpreted as homosexual attraction. A high score ( $\geq 3$ ) on both scales indicated bisexual attraction. Finally, a low score on both scales ( $< 3$ ) was categorised as asexual pattern. Two categories, heterosexual and sexual minority (including homosexual, bisexual and asexual pattern), were calculated.

#### *SCL-25*

SCL-25 has been developed from SCL-90 [29] and measures occurrence of psychiatric symptoms, mainly depression and anxiety, during the previous week. The measure consists of 25 items with a 4-point scale ranging from 1 = not at all to 4 = extremely. A total score ranging from 25 to 100 can be calculated with high values indicating a high symptom score. A cutoff was set at the 80th percentile with values  $\geq 53$  indicating poor mental health. SCL-25 has been shown to have acceptable reliability and validity [30, 31]. Cronbach's alpha was 0.93.

#### *The Rosenberg Self-esteem Scale*

The Rosenberg Self-esteem Scale [32] consists of 10 items ranging from 0 = strongly disagree to 3 = strongly agree. The total score ranges from 0 to 30 with high values indicating high self-esteem. A cutoff was set at the 20th percentile with values  $\leq 16$  indicating low self-esteem. Cronbach's alpha was 0.89.

#### *The Sense of Coherence Scale (SOC)*

The Sense of Coherence Scale (SOC) has been used in a number of previous studies and has been shown to be valid and reliable [33]. The version used in this study consists of 13 items, each of which can be rated on a 7-point scale. A total score based on all items is calculated and ranges

between 13 and 91. High values indicate a strong sense of coherence. Antonovsky suggested that scores can be collapsed into quintiles or tertiles [34]. In this study, a weak sense of coherence was defined as values in the lowest quartile with a score of  $\leq 50$ . Cronbach's alpha was 0.85.

No national cutoffs for the age group under investigation are available for the SCL-25, The Rosenberg Self-esteem Scale and the Sense of Coherence Scale. As the sample was population based and relatively large, percentiles and quartiles based on data from this study were used for the cutoffs.

### *Measures of support seeking*

At the end of the survey, all participants were asked if they had ever sought support or help for any of the issues mentioned in the survey. Nine different issues and an unspecified "other" category were listed with "yes" and "no" as response alternatives. It was possible to mark several issues. In this study, answers were included when the topics "sexual abuse" or "Internet-related problems" had been marked. Those who had marked at least one of the issues were also asked where or with whom they had sought support or help. The response alternatives were "young person of the same age," "parent," "adult member of the family or friend," "professional," "via the Internet," "voluntary organisation," "helpline" and "other." They were also asked "Did you receive the support or help you needed?" The answer was given on a 5-point scale ranging from 1 = "yes, very good" to 5 = "no, I did not get any help". A dichotomised score was calculated with values 1, 2 and 3 indicating "received support or help" and values 4 or 5 indicating "did not receive support or help".

### *Measure of meeting person/s off-line who were first met online*

Participants were asked whether they had ever met a person in "real life" whom they had first met online with the possible answers "yes, one person," "yes, between two and ten persons," "yes, more than ten persons" and "no".

### Data analysis

SPSS 19 was used in the analyses [35]. Results are shown as frequencies (percent) or means (*M*) with standard deviations (*SD*). Sexual identity was used as the main dimension of sexual orientation in all analyses. All analyses were also carried out using emotional or sexual attraction as a measure of sexual orientation in order to validate the results. Sexual-minority and heterosexual adolescents were compared with regard to the prevalence

of sexual abuse off-line, problematic sexual meetings off-line with person/s met online and harassing messages via Internet or mobile phone. Differences were shown as odds ratio (OR) with 95 % confidence intervals (CI). Incident characteristics such as victim's age or offender's gender were assessed and differences were assessed by using Fisher's exact test or independent samples *t* test. All analyses were carried out separately for male and female adolescents. Next, the relation between psychological well-being (specified as psychiatric symptoms, self-esteem and sense of coherence) and different types of victimisation were investigated for sexual-minority and heterosexual adolescents who had or had not been victimised. Non-victimised heterosexual adolescents were compared with victimised heterosexual, non-victimised and victimised sexual-minority adolescents, separately for males and females. Independent samples *t* test was used in these analyses. Logistic regressions were used to investigate the impact of different types of victimisation on psychological well-being, when controlled for gender and sexual orientation. Results were shown as *p* values and as adjusted odds ratios (aOR) with 95 % confidence intervals (CI). Finally, sexual-minority and heterosexual adolescents were compared with regard to support seeking for sexual abuse and Internet-related problems by using odds ratios (OR) with 95 % confidence intervals (CI).

## Results

### Sexual orientation

In total, 9.5 % ( $n = 324$ ) of the participants reported some type of sexual-minority identity (males 6.3 %,  $n = 100$ ; females 12.3 %,  $n = 224$ ). Same-sex attraction was reported by 15.8 % ( $n = 504$ ) (males 10.3 %,  $n = 151$ ; females 20.6 %,  $n = 353$ ). Among participants who answered to both measures, 69.7 % of those who reported a sexual-minority identity also reported same-sex attraction (males 61.4 %, females 73.3 %), while 59.5 % of those who reported same-sex attraction also reported sexual-minority identity (males 64 %, females 57.6 %). The following sections provide results for sexual identity, while a summary of results for sexual or emotional attraction is shown at the end of "Results".

### Sexual abuse off-line

Male adolescents with a sexual-minority identity reported some type of sexual abuse significantly more often than those with a heterosexual identity, but there were no significant differences between these two groups with regard to penetrating abuse exclusively (Table 1). Female



adolescents with sexual-minority identity had a more than twofold increase in the odds of some type of sexual abuse or penetrating abuse exclusively, compared to female adolescents with heterosexual identity (Table 1). A majority of sexual-minority males, but not females, reported a same-sex offender, while both male and female heterosexual adolescents most often reported an offender of the opposite sex (Table 1). A majority of both heterosexual and sexual-minority adolescents reported that the offender at first abuse occasion had been a peer (age difference less than 5 years).

#### Problematic sexual meetings off-line with person/s met online

Female adolescents with sexual-minority identity more often than females with heterosexual identity met someone in “real life” whom they had first met online (sexual minority 62.6 %, heterosexual 54.7 %; OR 1.4, 95 % CI 1.1–1.9). There were no significant differences between sexual-minority and heterosexual male adolescents (sexual minority 62.4 %, heterosexual 58.3 %).

When compared with male adolescents with heterosexual identity, male adolescents with sexual-minority identity had a 2.7-fold increase in the odds of ever having been exposed to at least one type of problematic sexual meeting off-line with a person or persons they first had met online (Table 1). Like males, female adolescents with sexual-minority identity had almost threefold increased odds of at least one type of problematic sexual meeting off-line with person/s they had first met online compared to female adolescents with heterosexual identity (Table 1).

#### Online harassment

Male adolescents with sexual-minority identity had significantly increased odds of online harassment during the past year compared to males with heterosexual identity, such as a 5.7-fold increase in the odds of having found that others disseminated sexual pictures/films of the participant on the Internet against his will (Table 1). Females with sexual-minority identity reported at least one type of online harassment during the past year more often than females with heterosexual identity, Table 1. Specifically, they had a 3.1-fold increase in the odds of having been harassed by text messages.

#### Psychological well-being related to victimisation and sexual orientation

Table 2 shows how different aspects of psychological well-being—psychiatric symptoms (SCL-25), self-esteem (Rosenberg Self-Esteem Scale) and sense of coherence—were related

to sexual orientation and sexual abuse or Internet-related victimisation.

Non-victimised heterosexual youth reported significantly fewer psychiatric symptoms, higher self-esteem and stronger sense of coherence than non-victimised sexual-minority youth, victimised heterosexual youth and victimised sexual-minority youth (Table 2). This was found for both male and female adolescents. Exceptions to the above-outlined results were the findings that male heterosexual or sexual-minority adolescents who reported some type of penetrating abuse or some type of problematic sexual meetings off-line with person/s they met online did not show significantly lower self-esteem than non-victimised heterosexual male adolescents, and that male heterosexual adolescents who reported any type of penetrating sexual abuse did not have a weaker sense of coherence than non-victimised heterosexual males (Table 2).

Table 3 provides the association of the different types of victimisation, gender and sexual orientation as independent variables with the three types of psychological well-being as dependent variables. All types of victimisation, female gender and same-sex sexual orientation were associated with more psychiatric symptoms, lower self-esteem and a weaker sense of coherence. Concerning psychiatric symptoms (SCL-25), victimised adolescents and females had a 2.4- to 3.3-fold increase in the adjusted odds of more psychiatric symptoms, while sexual-minority adolescents had a 2.2- to 2.3-fold increase. The associations between self-esteem and victimisation, gender and sexual orientation were about equally strong with a 1.7- to 2.1-fold increase in the adjusted odds of lower self-esteem. Finally, victimised adolescents had a 2.2- to 3.3-fold increase in the adjusted odds of a weaker sense of coherence, while sexual-minority adolescents had a 2.1- to 2.2-fold increase and females had a 1.5- to 1.7-fold increase in the adjusted odds.

#### Support seeking

Questions about support seeking were answered by all participants at the end of the survey. Compared to heterosexual youth, adolescents with sexual-minority identity reported more often that they had sought support or help because of sexual abuse or Internet-related problems (Table 4). For example, males with sexual-minority identity had a 2.9-fold increased odds of seeking support for Internet-related problems compared to males with heterosexual identity or attraction (Table 4). Females with sexual-minority identity or attraction had a 3.1-fold increased odds of seeking support because of sexual abuse or Internet-related problems (Table 4).

Male adolescents with sexual-minority identity most often sought support or help from their parents (42.9 %), young people of the same age, professionals or other (each

**Table 1** Prevalence of heterosexual and sexual-minority adolescents' exposure to sexual abuse and Internet-related victimisation

	Sexual identity, males % (n)			Sexual identity, females % (n)			
	Heterosexual (n = 1,478)	Sexual minority <sup>a</sup> (n = 100)	OR (95 % CI)	Heterosexual (n = 1,603)	Sexual minority <sup>a</sup> (n = 224)	OR (95 % CI)	Total (n = 1,827)
<b>Sexual abuse off-line (ever)</b>							
Any type of sexual abuse <sup>b</sup>	6.5 (96)	16.0 (16)	<b>2.7 (1.6-4.9)</b>	23.2 (372)	41.1 (92)	<b>2.3 (1.7-3.1)</b>	25.4 (464)
Any type of penetrating abuse <sup>c</sup>	2.9 (43)	5.0 (5)	1.8 (0.7-4.5)	8.5 (137)	19.6 (44)	<b>2.6 (1.8-3.8)</b>	9.9 (181)
<b>If any type of sexual abuse</b>	n = 61-78	n = 13-15		n = 330-356	n = 81-89		n = 411-445
How often?			Fisher's exact test			Fisher's exact test	
Once	37.2 (29)	40.0 (6)	0.879	51.7 (184)	47.2 (42)	0.642	50.8 (226)
2-5 times	34.6 (27)	40.0 (6)		35.1 (125)	40.4 (36)		36.2 (161)
More than 5 times	28.2 (22)	20.0 (3)		13.2 (47)	12.4 (11)		13.0 (58)
Victim's mean age (M) <sup>d</sup>	14.8	13.0	t test	14.3	13.4	t test	14.2
			0.073			<b>0.042</b>	
Offenders' gender <sup>d</sup>			Fisher's exact test			Fisher's exact test	
Male	22.5 (16)	73.3 (11)	<b>&lt;0.001</b>	99.4 (350)	97.8 (87)	0.183	99.1 (437)
Female	77.5 (55)	26.7 (4)		0.6 (2)	2.2 (2)		0.9 (4)
Age difference offender-victim							
Less than 5 years	83.6 (51)	61.5 (8)	Fisher's exact test	52.7 (174)	56.8 (46)	Chi-square test	53.5 (220)
Offender at least 5 years older	16.4 (10)	38.5 (5)	0.122	47.3 (156)	43.2 (35)	0.536	46.5 (191)
<b>Problematic sexual meetings off-line with person/s met online (ever)<sup>e</sup></b>	n = 774-778	n = 49-52	OR (95 % CI)	n = 841-845	n = 126-130	OR (95 % CI)	n = 967-975
... the person/s you met tried to persuade you to have sex with him/her/them against your will	3.6 (28)	11.5 (6)	<b>3.5 (1.4-8.9)</b>	5.2 (44)	11.5 (15)	<b>2.4 (1.3-4.4)</b>	6.1 (59)
... the person/s you met pressured or forced you to have sex	1.4 (11)	5.9 (3)	<b>4.4 (1.2-16.1)</b>	2.1 (18)	5.5 (7)	<b>2.7 (1.1-6.5)</b>	2.6 (25)
... the person/s you met gave you money or gifts in order to have sex with you	1.9 (15)	8.2 (4)	<b>4.5 (1.4-14.1)</b>	0.7 (6)	4.8 (6)	<b>7.0 (2.2-21.9)</b>	1.2 (12)
<b>At least one type of problematic sexual meeting off-line with person/s met online</b>	4.5 (36)	11.3 (6)	<b>2.7 (1.1-6.7)</b>	6.0 (51)	15.2 (20)	<b>2.8 (1.6-4.9)</b>	7.2 (71)
<b>If at least one type of problematic sexual meeting off-line</b>							
Victim's mean age (M) <sup>d</sup>	15.1	15.7	t test	15.2	14.8	t test	15.1
			0.527			0.176	
<b>Online harassment (past year)</b>	n = 774-778	n = 95-96	OR (95 % CI)	n = 1,561-1,569	n = 209-210	OR (95 % CI)	n = 1,770-1,779
... been harassed by text message/s	3.7 (52)	13.5 (13)	<b>4.1 (2.1-7.8)</b>	3.3 (52)	9.6 (20)	<b>3.1 (1.8-5.3)</b>	4.1 (72)
... received threats via mobile phone	10.4 (145)	12.6 (12)	1.3 (0.7-2.3)	7.1 (112)	11.9 (25)	<b>1.8 (1.1-2.8)</b>	7.7 (137)

Table 1 continued

	Sexual identity, males % (n)			Sexual identity, females % (n)			
	Heterosexual (n = 1,478)	Sexual minority <sup>a</sup> (n = 100)	OR (95 % CI)	Heterosexual (n = 1,603)	Sexual minority <sup>a</sup> (n = 224)	OR (95 % CI)	Total (n = 1,827)
... found that others spread rumours or wrote nasty things about you on the Internet	10.9 (152)	19.8 (19)	<b>2.0 (1.2–3.4)</b>	11.5 (179)	15.8 (33)	<b>1.5 (1.0–2.2)</b>	12.0 (212)
... found that others disseminated sexual pictures/films of you electronically or digitally	2.0 (28)	10.4 (10)	<b>5.7 (2.7–12.1)</b>	1.5 (23)	3.3 (7)	<b>2.3 (1.0–5.5)</b>	1.7 (30)
<b>At least one type of online harassment</b>	16.8 (249)	23.0 (23)	1.5 (0.9–2.4)	16.1 (258)	23.2 (52)	<b>1.6 (1.1–2.2)</b>	17.0 (310)

<sup>a</sup> Sexual minority: homosexual, bisexual, unsure, none of these

<sup>b</sup> Any type of abuse includes: somebody exposed himself/herself indecently to you, somebody touched your private parts or tried to undress you in order to have sex with you, you masturbated somebody else, you had vaginal intercourse, you have had oral sex, you have had anal sex against your will

<sup>c</sup> Penetrating abuse includes: vaginal intercourse, oral sex or anal sex against one's will

<sup>d</sup> Mean age (victim) or offender's sex at first incident

<sup>e</sup> Only those participants who ever met someone off-line whom they had first met online

Bold values for Fisher's exact test, t-test and Chi2 indicate that the p-value is significant at the level  $p < 0.05$ . Bold values for OR indicate that the values are significant with 95 % CI either above or below 1

28.6 %), while males with heterosexual identity most often sought support or help from young people of the same age (41.7 %), parents (33.3 %) or Internet sites (31.3 %). Female adolescents with sexual-minority or heterosexual identity most often sought support or help from young people of the same age (sexual minority 80.0 %, heterosexual 60.0 %), professionals (sexual minority 73.3 %, heterosexual 55.0 %) or parents (sexual minority 46.7 %, heterosexual 33.8 %). The differences between adolescents with sexual-minority identity and heterosexual identity were not statistically significant.

About one-third of adolescents with sexual-minority identity who had sought support or help because of sexual abuse or Internet-related problems did not perceive that they had received the support or help they had needed (sexual minority: males 28.6 %, females 26.9 %; heterosexual: males 17.1 %, females 15.1 %; n.s.).

#### Summary of results for sexual orientation as measured by emotional or sexual attraction

All analyses were carried out using emotional or sexual attraction as a dimension of sexual orientation. Full results are available on request. In general, the results were similar irrespective of whether sexual identity or emotional or sexual attraction was used in the analyses. Most of the significant differences that had been found between adolescents with different sexual identity were also found between adolescents with different sexual or emotional attraction, although less apparent.

The results for psychological well-being in relation to sexual abuse and Internet-related victimisation and the impact of sexual abuse/Internet-related victimisation, gender and sexual orientation on psychological well-being were basically the same when sexual orientation was measured as emotional or sexual attraction as compared to when it was measured as sexual identity. Different from the findings concerning sexual identity, male adolescents with same-sex attraction were more likely than male adolescents with heterosexual attraction to seek support or help because of sexual abuse (OR 5.0, 95 % CI 1.5–17.4), and female adolescents with same-sex attraction were not more likely than female adolescents with heterosexual attraction to seek support or help because of Internet-related problems.

## Discussion

This study compares sexual-minority and heterosexual adolescents with regard to prevalence of sexual abuse off-line, problematic sexual meetings off-line with person/s met online and online harassment and in relation to



**Table 2** Psychological well-being and sexual orientation among adolescents in relation to sexual abuse and Internet-related victimisation

	Sexual identity, males				Sexual identity, females			
	Hetero- sexual, No victim (ref.) M (SD) p (t test)	Sexual minority <sup>a</sup> , No victim M (SD) p (t test)	Hetero- sexual, Victim M (SD) p (t test)	Sexual minority <sup>a</sup> , Victim M (SD) p (t test)	Hetero- sexual, No victim (ref.) M (SD) p (t test)	Sexual minority <sup>a</sup> , No victim M (SD) p (t test)	Hetero- sexual, Victim M (SD) p (t test)	Sexual minority <sup>a</sup> , Victim M (SD) p (t test)
<b>SCL-25<sup>d</sup></b>								
Any type of sexual abuse offline <sup>e</sup>	37.9 (10.6)	42.1 (11.8) p = <b>0.001</b>	44.8 (16.6) p < <b>0.001</b>	52.0 (15.3) p = <b>0.006</b>	43.7 (11.8)	48.6 (14.2) p < <b>0.001</b>	49.7 (13.6) p < <b>0.001</b>	57.1 (13.7) p < <b>0.001</b>
Any type of penetrating sexual abuse offline <sup>b,g</sup>	38.1 (10.9)	43.0 (12.7) p = <b>0.001</b>	45.0 (18.3) p = <b>0.020</b>	52.8 (11.8) p = <b>0.003</b>	44.3 (12.0)	50.3 (14.6) p < <b>0.001</b>	53.2 (14.2) p < <b>0.001</b>	59.3 (12.3) p < <b>0.001</b>
Any type of problematic sexual meetings offline with person/s met online <sup>e,g</sup>	38.1 (11.0)	42.7 (12.1) p < <b>0.001</b>	45.8 (16.9) p = <b>0.007</b>	57.6 (16.9) p < <b>0.001</b>	44.8 (12.3)	51.2 (14.6) p < <b>0.001</b>	53.5 (15.2) p < <b>0.001</b>	61.0 (10.5) p < <b>0.001</b>
Any type of harassment via Internet or mobile phone <sup>b</sup>	36.9 (10.1)	41.4 (11.3) p = <b>0.001</b>	45.1 (13.8) p < <b>0.001</b>	51.1 (15.2) p = <b>0.001</b>	43.9 (11.9)	50.0 (13.5) p < <b>0.001</b>	51.3 (13.7) p < <b>0.001</b>	58.8 (16.0) p < <b>0.001</b>
<b>Rosenberg Self-Esteem Scale<sup>e</sup></b>								
Any type of sexual abuse offline <sup>e</sup>	23.6 (5.7)	20.6 (5.9) p < <b>0.001</b>	22.4 (6.0) p = <b>0.047</b>	19.4 (5.2) p = <b>0.006</b>	21.2 (6.2)	19.8 (6.7) p = <b>0.015</b>	19.6 (7.0) p < <b>0.001</b>	16.4 (7.6) p < <b>0.001</b>
Any type of penetrating sexual abuse offline <sup>b,g</sup>	23.5 (5.7)	20.5 (5.7) p < <b>0.001</b>	23.6 (4.9) p = 0.881	18.8 (7.2) p = 0.068	21.1 (6.2)	19.1 (7.0) p < <b>0.001</b>	17.8 (7.7) p < <b>0.001</b>	15.5 (7.4) p < <b>0.001</b>
Any type of problematic sexual meetings offline with person/s met online <sup>e,g</sup>	23.5 (5.7)	20.5 (5.8) p < <b>0.001</b>	22.6 (5.9) p = 0.296	19.3 (5.2) p = 0.073	20.9 (6.4)	18.9 (7.1) p < <b>0.001</b>	18.7 (7.6) p = <b>0.046</b>	13.5 (6.8) p < <b>0.001</b>
Any type of harassment via Internet or mobile phone <sup>b</sup>	23.8 (5.5)	21.0 (6.0) p < <b>0.001</b>	22.1 (6.4) p < <b>0.001</b>	18.6 (4.4) p < <b>0.001</b>	21.2 (6.2)	19.0 (7.1) p < <b>0.001</b>	19.1 (7.0) p < <b>0.001</b>	16.4 (7.5) p < <b>0.001</b>
<b>Sense of Coherence Scale<sup>f</sup></b>								
Any type of sexual abuse offline <sup>e</sup>	60.3 (11.8)	56.9 (13.0) p = <b>0.014</b>	55.9 (12.9) p = <b>0.001</b>	47.9 (10.6) p < <b>0.001</b>	58.6 (12.1)	53.8 (11.5) p < <b>0.001</b>	53.1 (12.8) p < <b>0.001</b>	46.4 (11.3) p < <b>0.001</b>
Any type of penetrating sexual abuse offline <sup>b,g</sup>	60.1 (11.9)	55.9 (13.3) p = <b>0.001</b>	57.3 (12.7) p = 0.147	48.0 (4.7) p = <b>0.023</b>	58.0 (12.3)	52.5 (11.9) p < <b>0.001</b>	50.0 (12.6) p < <b>0.001</b>	43.7 (9.6) p < <b>0.001</b>
Any type of problematic sexual meetings offline with person/s met online <sup>e,g</sup>	60.2 (11.7)	56.2 (12.6) p = <b>0.002</b>	51.7 (14.1) p < <b>0.001</b>	47.3 (17.0) p = <b>0.004</b>	57.5 (12.4)	51.7 (11.6) p < <b>0.001</b>	49.5 (13.6) p < <b>0.001</b>	40.2 (10.2) p < <b>0.001</b>
Any type of harassment via Internet or mobile phone <sup>b</sup>	61.4 (11.9)	57.8 (13.5) p = <b>0.008</b>	53.3 (12.2) p < <b>0.001</b>	48.0 (11.3) p < <b>0.001</b>	58.6 (12.0)	52.3 (11.6) p < <b>0.001</b>	50.2 (12.7) p < <b>0.001</b>	45.4 (11.5) p < <b>0.001</b>

<sup>a</sup> Sexual minority: homosexual, bisexual, unsure, none of these  
<sup>b</sup> Penetrating abuse includes vaginal intercourse, oral sex or anal sex against one's will  
<sup>c</sup> Only those participants who ever met someone off-line, whom they had first met online  
<sup>d</sup> High means indicate high score of psychic symptoms  
<sup>e</sup> High means indicate high self-esteem  
<sup>f</sup> High means indicate strong sense of coherence  
<sup>g</sup> Ever  
<sup>h</sup> Past year  
 Bold values for t-test indicate that the p-value is significant at the level p < 0.05

**Table 3** Impact of sexual abuse/Internet-related victimisation, gender and sexual orientation on psychological well-being. Logistic regression

	aOR	95 % CI	<i>p</i>
<b>Dependent variable: SCL-25</b>			
Any type of sexual abuse off-line (ref. no victim)	2.4	<b>2.0–3.0</b>	<b>&lt;0.001</b>
Gender (ref. male)	2.4	<b>2.0–2.9</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.2	<b>1.7–2.8</b>	<b>&lt;0.001</b>
Any type of penetrating abuse off-line (ref. no victim)	2.9	<b>2.2–3.9</b>	<b>&lt;0.001</b>
Gender (ref. male)	2.6	<b>2.2–3.2</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.2	<b>1.7–2.9</b>	<b>&lt;0.001</b>
Any type of problematic sexual meetings off-line with person met online (ref. no victim)	3.3	<b>2.2–4.9</b>	<b>&lt;0.001</b>
Gender (ref. male)	2.8	<b>2.3–3.4</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.3	<b>1.8–3.0</b>	<b>&lt;0.001</b>
Any type of harassment via Internet or mobile phone (ref. no victim)	2.9	<b>2.4–3.6</b>	<b>&lt;0.001</b>
Gender (ref. male)	3.0	<b>2.5–3.6</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.3	<b>1.8–3.0</b>	<b>&lt;0.001</b>
<b>Dependent variable: Rosenberg Self-Esteem Scale</b>			
Any type of sexual abuse off-line (ref. no victim)	1.7	<b>1.4–2.1</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.8	<b>1.5–2.2</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	1.9	<b>1.5–2.4</b>	<b>&lt;0.001</b>
Any type of penetrating abuse off-line (ref. no victim)	2.1	<b>1.6–2.8</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.9	<b>1.6–2.3</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	1.9	<b>1.5–2.5</b>	<b>&lt;0.001</b>
Any type of problematic sexual meetings off-line with person met online (ref. no victim)	2.1	<b>1.4–3.1</b>	<b>&lt;0.001</b>
Gender (ref. male)	2.0	<b>1.7–2.4</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.0	<b>1.5–2.5</b>	<b>&lt;0.001</b>
Any type of harassment via Internet or mobile phone (ref. no victim)	2.0	<b>1.6–2.4</b>	<b>&lt;0.001</b>
Gender (ref. male)	2.1	<b>1.7–2.5</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.0	<b>1.5–2.5</b>	<b>&lt;0.001</b>
<b>Dependent variable: Sense of Coherence Scale</b>			
Any type of sexual abuse off-line (ref. no victim)	2.2	<b>1.8–2.7</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.5	<b>1.2–1.7</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.0	<b>1.6–2.5</b>	<b>&lt;0.001</b>
Any type of penetrating abuse off-line (ref. no victim)	3.0	<b>2.3–4.0</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.6	<b>1.3–1.8</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.0	<b>1.6–2.6</b>	<b>&lt;0.001</b>
Any type of problematic sexual meetings off-line with person met online (ref. no victim)	3.3	<b>2.2–4.8</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.7	<b>1.4–2.0</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.1	<b>1.6–2.6</b>	<b>&lt;0.001</b>
Any type of harassment via Internet or mobile phone (ref. no victim)	3.1	<b>2.6–3.7</b>	<b>&lt;0.001</b>
Gender (ref. male)	1.8	<b>1.5–2.1</b>	<b>&lt;0.001</b>
Sexual orientation (ref. heterosexual)	2.1	<b>1.6–2.7</b>	<b>&lt;0.001</b>

Bold values for OR indicate that the values are significant with 95 % CI either above or below 1. Bold *p*-values indicate significance at the level  $p < 0.001$

**Table 4** Heterosexual and sexual-minority adolescents' support seeking for sexual abuse and Internet-related problems

Did ever seek support or help because of ...	Sexual identity, males % (n)				Sexual identity, females % (n)			
	Heterosexual (n = 1,375–1,376)	Sexual minority (n = 89–90)	OR (95 % CI)	Total (n = 1,465)	Heterosexual (n = 1,544–1,552)	Sexual minority (n = 207–208)	OR (95 % CI)	Total (n = 1,752–1,759)
... sexual abuse?								
Yes	1.1 (15)	2.2 (2)	2.1 (0.5–9.3)	1.2 (17)	3.9 (61)	11.1 (23)	<b>3.1 (1.9–5.1)</b>	4.8 (84)
... Internet-related problems?								
Yes	2.8 (39)	7.8 (7)	<b>2.9 (1.3–6.7)</b>	3.1 (46)	1.6 (25)	4.8 (10)	<b>3.1 (1.5–6.5)</b>	2.0 (35)

Bold values for OR indicate that the values are significant with 95 % CI either above or below 1

psychological well-being and support seeking. The main findings can be summarised as follows.

First, sexual-minority adolescents reported higher prevalence rates than heterosexual youth for sexual abuse off-line, problematic sexual meetings off-line with person/s met online and online harassment. The findings concerning sexual abuse are in line with previous findings [12], while there are to our knowledge no previous studies about adolescents' sexual orientation in relation to problematic sexual meetings off-line with person/s met online. In general, sexual-minority youth in our study reported having met someone off-line they first had met online more often than heterosexual youth, which is in line with previous findings [36]. When compared to heterosexual youth, males and females with a sexual-minority identity had an almost threefold increased odds of having experienced some type of problematic sexual meeting off-line with person/s they met online. In particular, females with sexual-minority identity were seven times more likely to report that the person/s they had met gave them money or gifts in order to have sex with them. It may be more difficult to identify possible warning signs when a youth decides to meet a person he or she only knows via the Internet. Another possibility which may be especially relevant for some sexual-minority youth is that the youth perceives the warning signals, but does not want to give up the chance of meeting the other person/s in real life.

It is concerning that sexual-minority youth are over-represented among youth reporting different types of online harassment. Male sexual-minority youth had fourfold increased odds of having been harassed by text messages and almost sixfold increased odds of others disseminating sexual pictures or films of them compared to heterosexual male adolescents. Female sexual-minority youth had almost twofold increased odds of having experienced the most serious harassment investigated in this study, receiving threats via mobile phone. Our findings

correspond with results from a population-based study with Norwegian high school seniors. Youth with homosexual or bisexual identity had been significantly more often harassed by rude comments or received sexual solicitations via the Internet when compared with heterosexual or "unsure" youth [36]. We do not know if the harassment reported in our study was related to the youths' sexual orientation. Mustanski et al. [37] found in a study with sexual-minority youths aged 16–24 years that 94 % had experienced some form of victimisation related to their sexual orientation, including verbal threats and insults, being chased, having property damaged and being physically or sexually assaulted. This high number relates to lifetime experience in a targeted sample and may not be applicable to the general population.

Second, a substantial part of sexual abuse off-line and problematic sexual meetings off-line with person/s met online seems to be related to peer abuse or dating violence. The mean age at victimisation was relatively high for problematic sexual meetings off-line with person/s first met online (*M* age males 15.2, females 15.1), the same was the case for mean age at first sexual abuse incident (*M* age males 14.5, females 14.2). Also, a majority of both heterosexual and sexual-minority adolescents who had experienced sexual abuse reported an age difference of less than 5 years between offender and victim of sexual abuse, indicating abuse between peers or dating partners.

A majority of sexual-minority males, but not females, reported a same-sex offender, while both male and female heterosexual adolescents most often reported an offender of the opposite sex. Eskin et al. [38] reported similar results for students with same-sex sexual orientation and Priebe and Svedin [23] found similar results as for heterosexual adolescents in a population-based sample of high school students. It may be that the pathways into potentially risky sexual situations are different for male and female sexual-minority youth. Given that a majority of the offenders are

male, it seems that male sexual-minority youth are more at risk when they meet a same-sex partner, while female sexual-minority youth are more at risk when they meet a partner of the opposite sex. More female than male sexual-minority youth in our sample were bisexual (Priebe and Svedin, under review) and probably dated female as well as male partners. Females with bisexual identity had voluntary sexual intercourse with a person of either sex significantly more often than females of any other sexual identity (89 % compared to 76 %,  $\chi^2 = 7.943$ ,  $df = 1$ ,  $p = 0.005$ ).

Third, different types of victimisation, sexual orientation and gender contributed independently to different aspects of psychological well-being. Both off-line sexual abuse, problematic sexual meetings off-line with person/s met online and online harassment were related to more psychiatric symptoms, lower self-esteem and a weaker sense of coherence. This is in line with previous findings from a study of 10- to 17-year-old Internet users that online and off-line victimisations were independently related to depressive symptomatology, delinquent behaviour and substance use [39]. It is important to keep in mind that many youths who report online victimisation also report off-line victimisation. In a study by Mitchell et al. [10], almost all (96 %) young people ages 10–17 years who reported online harassment or unwanted online sexual solicitation also reported at least one off-line victimisation, but online victimisation contributed independently to psychological distress.

Female gender and sexual-minority orientation were in our study independently related to more psychiatric symptoms, lower self-esteem and a weaker sense of coherence. The findings psychiatric symptoms and lower self-esteem are in line with previous findings [8, 9]. To our knowledge, there have been no previous studies that investigated the sense of coherence in relation to sexual orientation. A weakened sense of coherence not only affects current psychological well-being, but could also compromise young people's ability to cope with future challenges and victimisations. One such challenge could be to develop one's sexual orientation. A greater integration of sexual identity, for example involvement in sexual-minority activities, positive attitudes towards sexual-minority orientation or comfort with others knowing about one's sexual-minority orientation has been shown to be related to less depressive and anxious symptoms among sexual-minority youth [40]. Another possible explanation for why sexual-minority youth reported having been victimised more often than heterosexual youth may be that it is related to some form of hate crime. The reason for the victimisation may be the youth's sexual orientation per se or, more ambiguously, that the youth does not fit into the expected sex or gender stereotypes. Feeling different or gender atypical and its role in youths' development have

been described by, for example, Savin-Williams [41] and may contribute to an increased vulnerability to sexual victimisation or harassment. Sexual orientation may change over time, especially during adolescence, with higher mobility for females and sexual minorities [42]. This could be related to more experimentation and higher risk-taking behaviour that can result in victimisation.

Fourth, sexual-minority female or male adolescents reported more often than heterosexual adolescents that they had sought support or help because of sexual abuse or Internet-related problems. This is not surprising given that they also reported higher rates of victimisation and lower psychological well-being. Informal support was most often sought from young people of the same age or parents. Compared to previous research about disclosure of sexual abuse [17], relatively many had sought support or help from professionals such as psychologists. This was especially the case for sexual-minority females, of whom almost three out of four had sought professional support. More sexual-minority adolescents than heterosexual youth in our study perceived that they had not received the support they had needed, but the differences were not significant. Depending on the problem that is presented, general Internet use or Internet use related to sexuality, sexual orientation or victimisation should be carried out by health-care providers who meet with adolescents. When asked about their health-care preferences, sexual-minority youth first of all wanted the same high-quality, comprehensive care that all adolescents should receive, including privacy, cleanliness, honesty, respect and competence, sensitivity and knowledge as well as a nonjudgmental stance with regard to sexual-minority issues [16, 43, 44]. The American Academy of Pediatrics offers guidelines for paediatricians who care for and counsel non-heterosexual and questioning youth [45].

Finally, it is striking that the results in our study were similar irrespective of whether sexual orientation was measured as sexual identity or as emotional or sexual attraction. The overlap between the two measures of sexual orientation is only moderate with about two-thirds of those who report same-sex sexual orientation in one measure also reporting it in the other measure. This means that somewhat different groups were identified as sexual minority by the two measures. As in previous research, more adolescents were included when sexual minority was defined by emotional or sexual attraction instead of sexual identity [46]. Differences in victimisation prevalence rates between sexual-minority youth and heterosexual youth were less apparent when sexual orientation was measured by attraction instead of identity. Results concerning psychological well-being were almost identical for both types of measures. The results differed most when support seeking was investigated, which probably can be explained by the fact

that the number of sexual-minority youth who had sought support was low. The similarity of the results for both measures of sexual orientation suggests that the findings are robust. This is in line with a meta-analysis of disparities in childhood sexual abuse, parental physical abuse and peer victimisation among sexual-minority and sexual-non-minority youth, which found that the dimension used to assess sexual orientation did not moderate the association between sexual orientation and victimisation [12].

### Methodological considerations

Some caution is needed in interpreting the data in this study, as the number of sexual-minority youth was low. Although a relatively large sample was used in this study, both sexual minority and the different types of victimisation under investigation were relatively infrequent. Given that data were analysed separately for male and female adolescents, it was not possible to also analyse the data separately for different types of sexual minorities, such as homosexuals or bisexuals.

Adolescents may have sought support or help for additional reasons than those investigated here. Due to how the questions were asked, it was not possible to identify where they had sought support, if they had sought support for more than one problem, and how satisfied they were with different support sources, if they had sought more than one. More research about different types of support to victimised sexual-minority youth is needed. In particular, research about sexual-minority youths' perception of support they received and the Internet as a source of support would be of interest.

It is a limitation of this study that 31 of the 150 schools in the original sample did not participate in the study. Out of these, six refused to participate, students at one school were on practical training and not present at school during the data collection period, five schools promised to participate but did not contribute with data and 19 schools did not answer to the invitation to participate in the study.

### Summary and implications

Sexual-minority youth in our study more often reported problematic sexual meetings off-line with person/s met online, online harassment and sexual abuse, compared to heterosexual youth. Victimisation, sexual orientation and gender contributed independently to lower psychological well-being. It is encouraging that sexual-minority youth also sought support and help at a higher rate compared to heterosexual youth, but a third of them perceived that they had not received the support or help they had needed. A substantial number of youth who seek counselling or psychiatric treatment for mental health problems or problems

related to victimisation can be expected to be sexual-minority youth. It has been a challenge to Health care providers are challenged to not only provide the same care to these youth that all adolescents should receive, but also find ways to address topics like prevention of sexual abuse and risk-taking behaviour online or off-line.

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