

Online sexual behaviours among Swedish youth: associations to background factors, behaviours and abuse

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Received: 23 October 2014 / Accepted: 1 January 2015 / Published online: 15 January 2015
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Abstract Sexual activity online may result in positive experiences for young people, or lead them to engage in risky behaviours possibly resulting in sexual assault or abuse. The aim of our study was to investigate associations between online sexual behaviours among Swedish youth and background factors as well as aspects of well-being. The behaviours investigated were: having sex online with a contact met online, having sex with an online contact offline, posting sexual pictures online, and selling sex online. We used data from a representative sample of 3,432 Swedish youth who were asked about their lifetime experiences as well as their experiences within the previous year. We hypothesized that more advanced online sexual behaviours were associated with more problematic background factors, worse psychosocial well-being and riskier behaviours in general. Bivariate relationships were evaluated followed by a multiple logistic regression model. Our data suggested that most Swedish youth do not perform any of the assessed online sexual behaviours. Young people who reported online sexual behaviour showed a more problematic background, rated their health as poorer, had a more sexualized life and had experienced more sexual or

physical abuse. Professionals who work with young people need to help them better evaluate potential risks online and offer support when needed. Youths who sell sex online are especially at risk and need extra attention, as they might be in greater need of protection and therapeutic support.

Keywords Sexual risk taking · Online sexual behaviour · Sexting · Selling sex · Youth · Adolescent · Internet

Introduction

In the last decade, there have been considerable changes in the availability of digital technology and the role it plays in our lives. In Sweden, almost 100 % of young people have access to the Internet, as is the case in the UK and the US [1–3]. Most young people also have access to a smartphone and/or a laptop, which allows them to spend more time in private online. For some, the Internet is also part of their sexual life [4–6]. Exploring sexuality and establishing social relationships are normal parts of a young person's life. In this context, the Internet is a natural arena for finding information and potential romantic and sexual relationships. Cooper [7] stresses that the Internet is popular for sexual purposes due to its easy access, affordability and the possibility of anonymity.

While sexual activities online may lead to positive experiences, it can also be risky. Livingstone et al. [8] suggest that most activities children engage in online can be either beneficial or harmful, depending on the circumstances. Most young people are mindful of the risks online [9, 10] but may not always be aware of the consequences of their risk taking. Studies indicate that those who take sexual risks offline also do so online [11–13] and that risk taking in general such as use of drugs, smoking,

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truancy and having unprotected sex, peaks in adolescence [14–16]. A combination of an urge for sensation seeking with a relative lack of impulse control during adolescence could be one contributor to this risk-taking behaviour [16]. Baumgartner et al. [17] studied how young people estimated risks online, and found those who took most risks perceived that their peers were engaged in similar activities, saw more benefits than risks associated with the behaviours, and felt personally less vulnerable to negative consequences. Examples of possible negative outcomes from online sexual behaviours are receiving unwanted requests for sex and/or sexual pictures [18–20], unsafe sexual contacts that can lead to sexually transmitted diseases and pregnancy [12, 21, 22] or grooming situations leading to abusive sexual situations [23–26]. Even if the risk of becoming a victim of online sexual abuse is small [27], those victimized can face tragic and painful experiences [28, 29] that in some cases can even lead to suicide attempts or completed suicide [30].

Few studies have investigated or discussed whether certain online sexual behaviours are riskier than others. Baumgartner et al. [17] studied online sexual risk-taking behaviours and considered the following four behaviours to be especially risky if the communication was with unknown people: (1) searching online for someone to talk to about sex, (2) searching online for someone to have sex with, (3) sending intimate photos or videos and (4) disclosing personal information such as telephone numbers and addresses to someone online. These behaviours were shown to increase the likelihood of negative experiences, such as unwanted aggressive sexual solicitation, misuse of intimate information, feelings of shame, guilt and embarrassment and an increased risk of contracting sexually transmitted diseases.

Different online sexual behaviours have been found to be associated with psychological and social problems such as affective disorders, depression, and behavioural problems including substance abuse [20, 31]. Maltreatment, behavioural problems and low cognitive ability have been shown to be associated with high-risk Internet behaviours including unintentional as well as intentional exposure to sexual content, posting high-risk social network profiles and online sexual solicitations. In addition, these behaviours were shown to be predictors of subsequent offline meetings [32].

This study used data from a representative sample of Swedish youth to investigate whether certain online sexual behaviours may be associated with specific background factors, behaviours and abuse.

We looked at four different online sexual behaviours: sexual interaction online with a person met online, sexual interaction offline with a person met online, posting sexual pictures online via Internet or mobile phone, and

selling sex to online contacts. According to the definition of Baumgartner et al. [17], these four behaviours would be identified as risky. Our hypothesis was that more advanced online behaviours would be associated with more problematic background factors and a diminished sense of well-being, meaning that young people who engaged in more advanced online sexual behaviours exhibited poor psychosocial health, low self-esteem, poor relationships with parents and increased risk taking in general (such as, e.g. an early debut of alcohol use, drug use and/or early sexual debut).

We viewed these four online sexual behaviours as a hierarchy in which meeting a person online for sex online was considered the least advanced and selling sex online was the most advanced. This study aimed to investigate the following:

- The potential differences in background between those who had performed any of the four online sexual behaviours and those who had not.
- Whether performance of any of these behaviours was more related to diminished psychosocial well-being and a history of more risk taking and sexual experiences.

Materials and methods

Participants

A representative sample of Swedish high school seniors was selected by Statistics Sweden using information from the Swedish School Register. According to official statistics, 91 % of Swedish 18-year-olds were enrolled in high school, 2 % were studying in other educational alternatives, such as college and 7 % were not studying in 2009 [33].

The sampling frame consisted of all students in the second year of Swedish high schools with at least 10 students. In total, there were 123,551 students at 754 schools in 2007. It was stratified by number of students enrolled at each school (10–190, 191–360 and >360 students) and educational program (20 programs). A random sample that included one or two programs at 150 schools was selected (7,700 students) and 119 schools chose to participate. Of the 5,792 enrolled students at these schools, 3,503 students participated in the study resulting in a response rate of 60.5 %. Five students were excluded from the sample due to frivolous or incomplete responses.

Participants who did not answer the question about gender ($n = 38$) or who answered “the division into male or female does not fit me” ($n = 28$) were also excluded. The final sample for this paper consisted of 3,432 respondents, 1,594 (46.4 %) boys and 1,838 (53.6 %) girls, with a median age of 18 (range 16–22).

Procedure

Between January and April of 2009, Statistics Sweden distributed the questionnaires to all participating schools and collected them. An information letter was sent to the principals of the selected schools, and 2 weeks later additional information and questionnaires were sent to the principals and teachers, followed by a telephone reminder 1 month later. Students received written information about the study and gave informed consent for participation when filling in the questionnaire. According to the Ethical Review Act of Sweden, active consent is not required from parents when adolescents are 15 years of age or older [34]. Teachers distributed the paper-and-pencil questionnaire. The questionnaire was completed anonymously in the classroom during school hours and placed in a sealed envelope by the students themselves. The schools then returned the questionnaires to Statistics Sweden. All students were given written information about the location and availability of counselling options.

The study was approved by the Regional Ethical Review Board in Linköping, Sweden (Dnr 220-08).

Measures

The questionnaire used in the study was based on the questionnaire from the Baltic Sea Regional Study of

Adolescents Sexuality [35] with the addition of questions about use of the Internet. The questionnaire consisted of 88 questions covering nine major areas: (1) socio-demographic data and background, (2) lifestyle and health, (3) love and consensual sexual experiences including sending sexual messages, (4) emotional, sexual, and physical abuse experiences, (5) sexually coercive behaviour, (6) use of the Internet and mobile phones and Internet-related harassments and sexual abuse, (7) experiences of selling sex, (8) use of pornography, and (9) seeking support.

Using the four online sexual behaviours investigated by our study, we developed four index questions, Table 1.

Question 1: Sex online with person met online: “Have you got to know someone on the Internet during the last 12 months that you have had sex with online?” [$n = 149$, 4.6 % (boys 6.9 %, girls 2.7 %, $p < 0.001$)].

Question 2: Sex offline with person met online: “Have you got to know someone on the Internet during the last 12 months that you have met offline and have had sex with?” [$n = 374$, 11.6 % (boys 15.2 %, girls 8.5 %, $p < 0.001$)].

Question 3: Posted sexual pictures online: “Have you during the last 12 months posted sexual pictures of yourself on the Internet or via mobile phone?” [$n = 138$, 4.3 % (boys 4.5 %, girls 4.1 %, $p = 0.617$)].

Question 4: Sold sex online: “Have you ever sold sexual services?”. Only those who answered that the contacts with

Table 1 Description and classification of sexual behaviours online

	Boys <i>n</i> (%)	Girls <i>n</i> (%)	Total <i>n</i> (%)	Chi-square
Index questions				
Sex online with person met online: yes	101 (6.9)	48 (2.7)	149 (4.6)	31.139 $df = 1 < 0.001$
Sex offline with person met online: yes	223 (15.2)	151 (8.5)	374 (11.6)	34.682 $df = 1 < 0.001$
Posted sexual pictures	65 (4.5)	73 (4.1)	138 (4.3)	0.251 $df = 1$ 0.617
Sold sex to a person met online	14 (0.9)	11 (0.6)	25 (0.7)	0.924 $df = 1$ 0.336
Any of the above	293 (18.4)	228 (12.4)	521 (15.2)	23.682 $df = 1 < 0.001$
Reference group	1,301 (81.6)	1,610 (87.6)	2,911 (84.8)	
All	1,594 (100.0)	1,838 (100.0)	3,432 (100.0)	
Number of different sexual behaviours online				
No activity	1,301 (81.6)	1,610 (87.6)	2,911 (84.8)	31.429 $df = 4 < 0.001$
One activity	214 (13.4)	188 (10.2)	402 (11.7)	
Two activities	53 (3.3)	29 (1.6)	82 (2.4)	
Three activities	21 (1.3)	7 (0.4)	28 (0.8)	
Four activities	5 (0.3)	4 (0.2)	9 (0.3)	
Classification based on the hierarchy used in the analyses				
Group a: met online sex online	37 (2.3)	23 (1.3)	60 (1.7)	5.688 $df = 1$ 0.017
Group b: met online sex offline	184 (11.5)	127 (6.9)	311 (9.1)	22.242 $df = 1 < 0.001$
Group c: posted sexual pictures	58 (3.6)	67 (3.6)	125 (3.6)	0.000 $df = 1$ 0.992
Group d: sold sex online	14 (0.9)	11 (0.6)	25 (0.7)	0.924 $df = 1$ 0.336
Group 0: no sexual online behaviour, reference group	1,301 (81.6)	1,610 (87.6)	2,911 (84.8)	
All	1,594	1,838	3,432	

the buyer was made online were included [$n = 25$, 0.7 % (boys 0.9 %, girls 0.6 %, $p = 0.336$)].

Reference group: None of the assessed sexual behaviour online [$n = 2,911$, 84.8 % (boys 81.6 %, girls 87.6 %, $p < 0.001$)].

Based on their responses to the four index questions, participants were divided into five groups: (a), (b), (c), (d) and the reference group (0) (Table 1). The groups were hierarchically ordered according to our estimation of more or less advanced sexual behaviours online based on data from three previous studies [23, 36, 37]. Jonsson et al. [23], interviewed young women selling sex online, and Quayle et al. [37] where young people who had sent or posted self produced sexual pictures online were interviewed. In these studies, some of the interviewed youth viewed it as more advanced to send a sexual picture than having web cam sex, or dating people online. At the same time, the interviewed youth who met people online for the purpose of selling sex often was exposed to extreme situations where they sometimes fear for their lives during the sexual encounter. In the constructed hierarchy, the group (d) (sold sex online, $n = 25$, boys 0.9 % and girls 0.6 %, $p = 0.336$) was rated as the most advanced behaviour and also expected to include the most vulnerable youth. The participants in this group could also have made acts that defined group (a–c). Group (a), sex online, was limited to youth who had only had sex online with a person met online ($n = 60$, boys 2.3 % and girls 1.3 %, $p = 0.017$). Group (b), sex offline, had not performed acts within groups (c) and (d) but may have performed acts within group (a) ($n = 311$, boys 11.5 % and girls 9.1 %, $p < 0.001$). Group (c) had not sold sex online but may have performed acts included in group (a) and (b) ($n = 125$, boys 3.6 % and girls 3.6 %, $p = 0.992$). Finally, group (0), the reference group, had no experience with online sexual behaviour according to the four questions ($n = 2,911$, boys 81.6, and girls 87.6 %).

Differences between the groups were analysed using answers given to questions referring to social background, Internet use, mental health, and parental bonding. The young people who participated in the current study did their third year in high school where three programs are offered: (1) higher education preparatory programs, typically including humanities, natural science, and social science; (2) vocational programs, such as health and social care, building and construction, hotel management, and tourism; and (3) other programs, such as preparatory education, program-oriented individual options, vocational introduction, individual alternative, and introductory language [38]. Youths who had drunk alcohol more than a few times per month were categorized as high-risk alcohol users. Antisocial behaviour included three or more of the following questions: Have you ever: (1) been away a whole night without your parents knowing where you were?, (2) Threatened, harassed or

bullied anyone?, (3) Have had a violent settlement with a teacher?, (4) Gotten into a fight, behaved bad or hurt others?, (5) Hit or hurt an animal? Youths who used the Internet more than 3 h a day were categorized as high consumers of the Internet. Youths who watched pornography every week or every day were categorized as high consumers of pornography. Those who had shared their email address or telephone number during the last 12 months with someone only known through the Internet were categorized as risk taking on the Internet. Concerning sexual behaviours, the participants were asked six questions with the possible answers Yes and No; Have you ever had: oral sex with a boy/man, oral sex with a girl/woman, anal sex with a boy/man, anal sex with a girl/woman, vaginal intercourse with a boy/man and vaginal intercourse with a girl/woman? Sexual abuse included experiences of penetrating abuse (oral, vaginal or anal). Finally physical abuse was youth who answered that they had been pushed or shaken by an adult, if an adult had ever thrown something at them, hit them with their hands or fist, kicked or bitten them or hit them with an object or burnt or scalded them.

To describe psychosocial health and parental relationships among the participants, five standardized instruments were included in the questionnaire: Symptom Checklist-25 (SCL-25), Rosenberg Self-Esteem Scale, Sense of Coherence (SOC), Parental Bonding Instrument (PBI) and Illinois Rape Myth Acceptance Scale (IRMA-SF).

SCL-25 [39, 40] measures the prevalence of psychological symptoms, mainly depression and anxiety during the previous week. Every question consists of four possible responses, ranging from 1 (not at all) to 4 (extremely). The total value ranges between 25 and 100. High values indicate high occurrence of symptoms. Cronbach's alpha was 0.93 in this sample.

The Rosenberg Self-Esteem Scale [41] consists of 10 questions measuring the self-esteem of the respondent. Every question has four possible answers, ranging from 0 (not at all) to 3 (completely right). Consequently, the total score ranges between 0 and 30. High values correspond to strong self-esteem. Cronbach's alpha was 0.89 in this sample.

Sense of Coherence (SOC) [42] measures the perception of coherence in life and is built on three components: comprehensibility, manageability, and meaningfulness. A strong sense of coherence is expected to enhance a person's ability to handle stressful life situations and to be strongly related to perceived health, including psychological health [43]. The version of the form used in this study (KASAM-13) consists of 13 questions estimated on a seven-grade scale from 1 (very seldom or never) to 7 (very often). The total score varies between 13 and 91. High scores indicate a high sense of coherence. Cronbach's alpha was 0.85 in this sample.

The Parental Bonding Instrument (PBI) [44, 45] measures a youth's perceived relationship with his or her

mother and father during childhood. PBI consists of 25 questions divided into two fundamental parental dimensions: care (12 questions) and overprotection (13 questions). Each question has four possible answers, ranging from 0 (agree totally) to 3 (do not agree). Total score varies between 0 and 36 for care, and between 0 and 39 for overprotection. In this study, high scores indicated high care or overprotection. Values under the 20th percentile correspond to low care (≤ 25 for mother and ≤ 21 for father) and values over the 80th percentile correspond to high overprotection (≥ 18 points for mother and ≥ 17 points for father). Cronbach's alpha in this sample was 0.84 for the mother and 0.85 for the father regarding care. Regarding control, Cronbach's alpha was 0.85 for the mother and 0.84 for the father. High care and low overprotection is considered to be optimal parental bonding whereas low care and high overprotection ("affectionless control") are considered to be the least optimal parental bonding [44].

Illinois Rape Myth Acceptance Scale (IRMA) [46] measures general rape myth acceptance. It includes myths about men's violence against women. In this study, a shorter version of the test, IRMA-SF, was used. The 22 questions included five fillers and had seven possible answers ranging from 1 (not at all) to 7 (completely). The total score for the 17 questions, not including the five fillers, varies between 17 and 119. High scores (>80) indicate more rape myth endorsement. Cronbach's alpha was 0.87 in this sample.

Analysis

Bivariate relationships between the five groups and background variables (living situation, study program, parental employment, parental educational level, immigrant status and parental bonding index), health/health behaviour (including results from the SOC, Rosenberg and SCL-25; smoking; alcohol consumption; drug use; antisocial behaviour; high consumer of Internet and Internet risk), sexual behaviour (sexual debut age, number of intercourse partners, oral/anal/vaginal sex, sexual desire, high consumer of pornography, results from IRMA and abuse (sexual and physical abuse) were evaluated using Pearson's Chi square. Each variable was further evaluated using single multinomial logistic regression, where each independent variable was entered into the model and each outcome modelled separately. Furthermore, each domain of predictors (background, health/health behaviour, sexual behaviour, and abuse) was modelled in multiple multinomial logistic regression models; each domain modelled separately. This action was performed to reduce the number of variables to be considered in the final models, since entering all variables into the models would cause saturation. All variables

found to be statistically significant in these models were subsequently entered into the final model. All statistical analyses were performed using IBM SPSS version 22.0 (IBM Inc., Armonk, NY). All tests were two-sided and a p value <0.05 was considered statistically significant. In "Results", only statistically significant differences are described.

Results

Sociodemographic background and parental bonding

Comparisons between participants with a history of online sexual behaviours (a–d) and those with no history of online sexual behaviour (0)

The background of participants with a history of online sexual behaviour (a–d) and the reference group (0) was similar in many ways, including immigrant status and parental education levels (Table 2). However, some significant differences between the groups were found. For example, participants who had had sex online with an online contact (a) more often had parents who had immigrated from a European country outside Sweden. In addition, those who had had sex offline with a person met online (b) or who had sold sex online (d) more often had mothers who were unemployed, while individuals with a history of online sexual behaviour (a–c) were more likely to have attended vocational programs at school than those in the reference group (0). The participants who had had sex online with a person met online (a) posted sexual pictures online (c) and those who had sold sex online (d) reported poorer relationships with their mothers and fathers, both regarding overprotection and care, than the reference group (0). Finally, the participants who had sold sex online (d) more frequently lived without their parents.

Comparisons among participants with a history of online sexual behaviours (a–d)

Compared to the group who had met a person online for sex offline (b), those who had posted sexual pictures (c) more commonly reported a poor relationship with both their parents. In the analysis, the participants who had sold sex online (d) distinguished themselves from those in groups (a–c) in the following respects: those individuals in group (d) reported a poorer relationship with their mothers and lived with their parents less often than those in groups (a–c). They were more likely to have had a father with a university education compared with the participants who had had sex online with a person met online (a) and those

Table 2 Background and socio-demographic variables by different groups

	0 = No sexual behaviour <i>n</i> (%)	<i>a</i> = Met online, sex online <i>n</i> (%)	<i>b</i> = Met online, sex offline <i>n</i> (%)	<i>c</i> = Posted sexual pictures <i>n</i> (%)	<i>d</i> = Sold sex online <i>n</i> (%)	<i>p</i> [#]	Pairwise comparisons from logistic regression
Living situation						0.009	Reference level
Living with both parents or alternating between parents	2,568 (88.2)	56 (93.3)	281 (90.4)	107 (85.6)	17 (68.0)		
Other	343 (11.8)	4 (6.7)	30 (9.6)	18 (14.4)	8 (32.0)		0/d*, a/d**, b/d**, c/d*
Study program						0.001	Reference level
Academic	1,434 (49.3)	15 (25.0)	136 (43.7)	44 (35.2)	11 (44.0)		
Vocational	1,280 (44.0)	39 (65.0)	156 (50.2)	72 (57.6)	12 (48.0)		0/a***, 0/b*, 0/c**, a/b*
Other	197 (6.8)	6 (10.0)	19 (6.1)	9 (7.2)	2 (8.0)		0/a*
Father's occupational status						0.013	Reference level
Active (work, parental leave, studies)	2,522 (86.6)	49 (81.7)	271 (87.1)	105 (84.0)	16 (64.0)		
Inactive (unemployed, retired)	389 (13.4)	11 (18.3)	40 (12.9)	20 (16.0)	9 (36.0)		0/d**, b/d**, c/d*
Mother's occupational status						0.001	Reference level
Active (work, parental leave, studies)	2,568 (88.2)	51 (85.0)	257 (82.6)	112 (89.6)	17 (68.0)		
Inactive (unemployed, retired)	343 (11.8)	9 (15.0)	54 (17.4)	13 (10.4)	8 (32.0)		0/b**, 0/d**, c/d**
Father's education						0.211	Reference level
Non-university	1,454 (50.9)	36 (62.1)	145 (47.9)	65 (53.3)	8 (33.3)		
University	931 (32.6)	13 (22.4)	106 (35.0)	32 (26.2)	12 (50.0)		a/b*, a/d**, c/d*
Don't know	474 (16.6)	9 (15.5)	52 (17.2)	25 (20.5)	4 (16.7)		
Mother's education						0.715	Reference level
Non-university	1,255 (43.4)	33 (55.0)	131 (42.4)	55 (44.4)	14 (56.0)		
University	1,253 (43.4)	22 (36.7)	136 (44.0)	53 (42.7)	9 (36.0)		
Don't know	382 (13.2)	5 (8.3)	42 (13.6)	16 (12.9)	2 (8.0)		
Adolescent region of birth						0.470	Reference level
Sweden	2,674 (92.9)	59 (98.3)	289 (93.8)	114 (93.4)	21 (84.0)		
Europe except Sweden	93 (3.2)	1 (1.7)	11 (3.6)	3 (2.4)	2 (8.0)		
Outside Europe	110 (3.8)	0 (0.0)	8 (2.6)	5 (4.1)	2 (8.0)		
Parental region of birth						0.110	Reference level
Sweden	2,304 (79.1)	45 (75.0)	250 (80.4)	98 (78.4)	17 (68.0)		
Europe except Sweden	311 (10.7)	12 (20.0)	36 (11.6)	19 (15.2)	4 (16.0)		0/a*
Outside Europe	296 (10.2)	3 (5.0)	25 (8.0)	8 (6.4)	4 (16.0)		

Table 2 continued

	0 = No sexual online behaviour n (%)	a = Met online, sex online n (%)	b = Met online, sex offline n (%)	c = Posted sexual pictures n (%)	d = Sold sex online n (%)	p [#]	Pairwise comparisons from logistic regression
PBI						<0.001	
Mother							
Low care/high overprotection							
No	2,430 (86.3)	43 (75.4)	250 (82.8)	82 (70.7)	9 (42.9)		Reference level
Yes	387 (13.7)	14 (24.6)	52 (17.2)	34 (29.3)	12 (57.1)		0/a*, 0/c***, 0/d***, a/d***, b/c**, b/d***, c/d*
Father						<0.001	
Low care/high overprotection							
No	2,232 (82.7)	37 (69.8)	229 (79.8)	76 (70.4)	10 (55.6)		Reference level
Yes	467 (17.3)	16 (30.2)	58 (20.2)	32 (29.6)	8 (44.4)		0/a*, 0/c***, 0/d***, b/d*

Chi square test, * < 0.05, ** < 0.01, *** < 0.001

who had posted sexual pictures (c). Moreover, their fathers were more likely to have been employed compared to the other participants (b–c).

Health, risk-taking behaviours and Internet use

Comparisons between participants with a history of online sexual behaviours (a–d) and no history of online sexual behaviour (0)

Participants with a history of online sexual behaviour generally had poorer health than those with no history of online sexual behaviour (Table 3). They also reported a weaker sense of coherence (a–d), lower self-esteem (a, c–d) and poorer mental health (c–d). Smoking, alcohol and drug use were all more common among participants who had met a person online for offline sex (b) or posted sexual pictures online (c) than in the reference group (0). Participants who had sold sex online (d) reported more experiences of smoking and drug use but not more alcohol use. Compared to the reference group (0), antisocial behaviour was more common among all participants with a history of online sexual behaviour (a–d). In addition, groups (a–d) reported different online behaviour from those in the reference group (0). For example, they were significantly more often high consumers of the Internet (a–c) and also had taken more risks by sharing personal information (a–c).

Comparisons between participants with different online sexual behaviours (a–d)

Participants who had sold sex online (d) had poorer mental health than those in all other groups. They also had a lower sense of coherence, except for the youth who had posted sexual pictures online (c). In addition, the participants who had sold sex online reported lower self-esteem compared to those who had met a person online for sex offline (b) or posted sexual pictures online (c). Individuals in group (d) reported more experiences of smoking and drug use (but not more alcohol use) compared to all other groups (a–c), and reported a higher rate of antisocial behaviour than those in groups (a–b).

Participants who had posted sexual pictures online (c) reported a lower sense of coherence and poorer mental health than those who had met a person online for sex offline (b), while participants who had met a person online for sex online (a) shared information online more often than the youth who had met a person online for sex offline (b). However, individuals in group (a) shared personal information less often via mobile phone than those who had posted sexual pictures (c) or sold sex online (d).

Sexual behaviours and experiences of abuse

Comparisons between participants with a history of online sexual behaviours (a–d) and those with no history of online sexual behaviour (0)

Most of the participating youth had had their sexual debut at the age of 14 or older (Table 4). Significantly more participants in groups (a–c) had sexually debuted than those in the reference group (0). An early sexual debut (10–14-years-old) was more common among participants in groups (b) and (c) than among those in the reference group (0). Overall, the participants with a history of online sexual behaviour (a–d) had a more sexualized life offline. Specifically, they had more sexual partners, had tried a variety of different forms of sex (a–d), had more sexual desire (a–d) and consumed more pornography (a–c) than those in the reference group (0). The participants with a history of online sexual behaviour reported more experiences of sexual abuse (b–d) and physical abuse (a, c–d) than the reference group (0).

Comparisons between participants with a history of different sexual online behaviours (a–d)

The participants who had sold sex online (d) more often had an early sexual debut than those who had met a person online for sex online or offline (a–b). Among the four groups with a history of different online sexual behaviours, there were no significant differences when it came to pornography consumption or sexual desire. Those participants who had met a person online for sex online (a) had had fewer sexual partners than the other groups (b–d). Finally, those who had sex offline with a person met online (b) more often had experience of oral and vaginal sex than those who had had sex online (a) or posted sexual pictures online (c).

In comparing abuse among the different groups, it was shown that the participants who had sold sex online (d) reported higher frequencies of both sexual and physical abuse than those with a history of other online sexual behaviours (a–c). Differences were also found between the groups of youth who had posted sexual pictures online (c) and those who had had sex offline with a person first met online (b), such that those posting sexual pictures more often had been both sexually and physically abused.

Multivariate analysis

The multiple logistic regression analysis, presented in Table 5, only included groups (0) and (a–c). The group of youths who reported experience of selling sex online (d) was too small ($n = 25$) to include.

Comparisons between participants with a history of online sexual behaviours (a–c) and those with no history of online sexual behaviour (0)

The greatest differences were shown between the reference group (0) and the youth who had posted sexual pictures online (c). For example, those who had posted sexual pictures (c) were almost seven times more likely to have shared personal information via the Internet (Table 5). They were also twice as likely to report a poorer sense of coherence together with a more problematic relationship with their mothers and had almost four times more often tried heroin, cocaine, ecstasy or amphetamine. Posting sexual pictures online (c) was also associated with more sexualized behaviour such as consumption of pornography, vaginal sex and anal sex. Finally, an association with sexual abuse was also found.

A similar pattern was seen among youth in the reference group (0) and those in groups (b) and (c) which included more risky Internet behaviour, higher consumption of pornography and more frequent experience of sexual abuse. There was also an association with antisocial behaviour. The participants who had had sex offline with a person met online (b) were also more likely to have an unemployed mother. Most prominent were the associations with a more sexualized life in general, especially vaginal sex, which was more than 11 times more common in this group (b) compared to the reference group (0).

Youths who had sex online with an online contact (a) were twice as likely to be high consumers of the Internet and almost eight times as likely to have engaged in more risky Internet behaviour compared to the youth in the reference group (0). Those in group (a) were also more likely to have experienced anal sex and were more accepting of rape myths. Physical abuse was more than twice as common in this group.

Comparisons between participants with a history of different online sexual behaviours (a–c)

Differences between sexual behaviours online were not as many when comparing the youths in the three groups. The greatest differences were shown between youth who have had sex online with a person met online (a) and the youth who had had sex offline with a person met online (b). Youths who had met a person online for sex offline (b) were less likely to attend a vocational program at school and had less accepting attitudes towards rape myths, compared to youths who had met a person online for sex online (a). Moreover, youths who had met a person online for sex offline (b) were almost 18 times more likely to have experienced vaginal sex than those who had sex online with a contact met online (a). Finally, the youth with experience

Table 3 Health, risk taking and Internet behaviour variables by different groups

	0 = No sexual behaviour <i>n</i> (%)	<i>a</i> = Met online, sex online <i>n</i> (%)	<i>b</i> = Met online, sex offline <i>n</i> (%)	<i>c</i> = Posted sexual pic- tures <i>n</i> (%)	<i>d</i> = Sold sex online (%)	<i>n</i>	<i>p</i> [#]	Pairwise comparisons from logistic regression
SOC cutoff 25								
Normal to strong SOC	2,104 (75.0)	35 (60.3)	198 (65.8)	61 (51.7)	8 (33.3)		<0.001	Reference level
Weak SOC	703 (25.0)	23 (39.7)	103 (34.2)	57 (48.3)	16 (66.7)			0/ <i>a</i> *, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a/d</i> *, <i>b/c</i> ***, <i>b/d</i> **
Rosenberg cutoff 20								
Normal to high self-esteem	2,284 (80.1)	41 (68.3)	243 (78.9)	85 (70.2)	11 (47.8)		<0.001	Reference level
Low self-esteem	568 (19.9)	19 (31.7)	65 (21.1)	36 (29.8)	12 (52.2)			0/ <i>a</i> *, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>b/d</i> ***, <i>c/d</i> *
SCL-25 cutoff 80								
Normal to good mental health	2,256 (80.5)	42 (75.0)	241 (78.2)	79 (65.3)	8 (34.8)		<0.001	Reference level
Poor mental health	548 (19.5)	14 (25.0)	67 (21.8)	42 (34.7)	15 (65.2)			0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a/c</i> ***, <i>a/d</i> ***, <i>b/c</i> **, <i>b/d</i> ***, <i>c/d</i> **
Smoking								
No	1,989 (68.7)	33 (55.0)	165 (53.1)	67 (53.6)	6 (25.0)		<0.001	Reference level
Yes	907 (31.3)	27 (45.0)	146 (46.9)	58 (46.4)	18 (75.0)			0/ <i>a</i> *, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a/d</i> *, <i>b/d</i> *, <i>c/d</i> *
Alcohol risk								
No	1,336 (45.9)	25 (41.7)	104 (33.4)	39 (31.2)	10 (40.0)		<0.001	Reference level
Yes	1,575 (54.1)	35 (58.3)	207 (66.6)	86 (68.8)	15 (60.0)			0/ <i>b</i> ***, 0/ <i>c</i> ***
Tried hashish/marijuana								
No	2,381 (82.8)	50 (83.3)	208 (67.8)	93 (74.4)	8 (34.8)		<0.001	Reference level
Yes	496 (17.2)	10 (16.7)	99 (32.2)	32 (25.6)	15 (65.2)			0/ <i>b</i> ***, 0/ <i>c</i> *, 0/ <i>d</i> ***, <i>a/b</i> ** <i>a/d</i> ***, <i>b/d</i> ***, <i>c/d</i> ***
Tried heroin, cocaine, ecstasy, amphetamines								
No	2,775 (96.3)	57 (95.0)	281 (90.1)	108 (86.4)	10 (41.7)		<0.001	Reference level
Yes	107 (3.7)	3 (5.09)	28 (9.1)	17 (13.6)	15 (58.3)			0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a/d</i> ***, <i>b/d</i> ***, <i>c/d</i> ***
Antisocial behaviour								
0–2	2,564 (88.6)	46 (76.7)	217 (70.0)	88 (70.4)	12 (50.0)		<0.001	Reference level
3–5	331 (11.4)	14 (23.3)	93 (30.0)	37 (29.6)	12 (50.0)			0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a/d</i> *, <i>b/d</i> *
Internet risk								
							<0.001	

Table 3 continued

	0 = No sexual online behaviour <i>n</i> (%)	<i>a</i> = Met online, sex online <i>n</i> (%)	<i>b</i> = Met online, sex offline <i>n</i> (%)	<i>c</i> = Posted sexual pictures <i>n</i> (%)	<i>d</i> = Sold sex online (%)	<i>n</i>	<i>p</i> [#]	Pairwise comparisons from logistic regression
No	1,437 (50.9)	4 (6.7)	53 (17.2)	15 (12.0)	0 (0.0)			Reference level
Yes	1,388 (49.1)	56 (93.3)	255 (82.8)	110 (88.0)	24 (100.0)			0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***, <i>a</i> / <i>b</i> *
High consumer Internet							<0.001	Reference level
No	2,351 (84.8)	38 (64.4)	230 (74.9)	85 (70.8)	15 (71.4)			Reference level
Yes	422 (15.2)	21 (35.6)	77 (25.1)	35 (29.2)	6 (28.6)			0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***

[#] Chi square test, * < 0.05, ** < 0.01, *** < 0.001

of having had sex offline with a person met online (b) was less likely to have experienced physical abuse than those having sex online with a person met online.

Few differences were shown among the other groups, but youth who had posted sexual pictures (c) was more than four times as likely to have been sexually abused than youth who had had sex online with a contact online (a). In addition, posting sexual pictures was associated with a poorer sense of coherence and a higher likelihood of physical abuse than youth having had sex offline with an online contact (b).

Discussion

This study investigated differences between young people who had performed online sexual behaviours and those who had not. It also examined whether any of the four assessed online sexual behaviours was related to a more problematic background and various aspects of psychosocial well-being, including more risk taking and sexual experiences. The results may be summarized in four main findings.

First, the study suggests that the vast majority of Swedish youth who identify themselves as traditionally male or female did not perform any of the assessed online sexual behaviours, indicating that it is not likely to be an everyday behaviour among most youth. Out of the approximately 15 % of the young people who performed online sexual behaviours, having sex offline with a person met online was most common. The second most common was having had sex online with a person met online, followed by experiences of posting sexual pictures. Most sexual behaviours online can be understood as a natural way to explore sexuality or to find potential romantic and sexual relationships [4, 5, 12, 31, 47]. However, it may be problematic to consider some of the behaviours assessed in this study as just positive sexual exploration or dating. For example, selling sex online is defined as sexual exploitation according to the UN [48].

Second, the clearest pattern from the study was the difference between the participants with a history of online sexual behaviour and those without.

In the bivariate analysis, the youth who performed online sexual behaviour reported worse psychological health, including a lower sense of coherence and self-esteem. They also had a poorer relationship with their parents. These results are in line with a previous study by Baumgartner et al. [11]. The combination of poor health and dysfunctional family relationships might possibly put the youth in a more vulnerable situation so that sexual contacts online might fill a need for affirmation and being seen. This need can probably be reached more easily by communicating

Table 4 Sexual behaviour, attitudes and experiences of sexual and physical abuse by different groups

	0 = No sexual behaviour <i>n</i> (%)	<i>a</i> = Met online, sex offline <i>n</i> (%)	<i>b</i> = Met online, sex offline <i>n</i> (%)	<i>c</i> = Posted sexual pictures <i>n</i> (%)	<i>d</i> = Sold sex <i>n</i> (%)	Pairwise comparisons from logistic regression
Sexual debut age						
No debut	943 (32.4)	10 (16.7)	2 (0.6)	13 (10.5)	2 (8.3)	<0.001 0/ <i>a</i> **, 0/ <i>b</i> ***, 0/ <i>c</i> ***, <i>a</i> / <i>b</i> ***, <i>b</i> / <i>c</i> ***
10–14 years old	497 (17.1)	9 (15.0)	91 (29.3)	36 (29.0)	12 (50.0)	0/ <i>a</i> **, 0/ <i>c</i> ***, 0/ <i>d</i> **, <i>a</i> / <i>b</i> ***, <i>a</i> / <i>d</i> **, <i>b</i> / <i>d</i> **
Over 14 years old	1,469 (50.5)	41 (68.3)	218 (70.1)	75 (60.5)	10 (41.7)	Reference level
No. of intercourse partners						
1	720 (26.8)	7 (12.5)	1 (0.3)	7 (5.9)	1 (4.3)	Reference level
2–5	1,436 (53.4)	35 (62.5)	165 (53.4)	56 (47.1)	2 (8.7)	0/ <i>a</i> *, 0/ <i>b</i> ***, 0/ <i>c</i> ***, <i>a</i> / <i>b</i> ***, <i>b</i> / <i>c</i> **, <i>b</i> / <i>d</i> **
6	534 (19.9)	14 (25.0)	143 (46.3)	56 (47.1)	20 (87.0)	0/ <i>a</i> *, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a</i> / <i>b</i> ***, <i>a</i> / <i>c</i> *, <i>a</i> / <i>d</i> *, <i>b</i> / <i>c</i> **
Oral sex						
No	1,110 (38.1)	14 (23.3)	18 (5.8)	19 (15.2)	3 (12.0)	<0.001
Yes	1,801 (61.9)	46 (76.7)	293 (94.2)	106 (84.8)	22 (88.0)	Reference level 0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> *, <i>a</i> / <i>b</i> ***, <i>b</i> / <i>c</i> **
Anal sex						
No	2,309 (79.3)	36 (60.0)	189 (60.8)	70 (56.0)	5 (20.0)	<0.001
Yes	602 (20.1)	24 (40.0)	112 (39.2)	55 (44.0)	20 (80.0)	Reference level 0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> ***, <i>a</i> / <i>d</i> **, <i>b</i> / <i>d</i> ***, <i>c</i> / <i>d</i> **
Vaginal sex						
No	960 (33.0)	9 (15.0)	6 (1.9)	12 (9.6)	3 (12.0)	<0.001
Yes	1,951 (67.0)	51 (85.0)	305 (98.1)	113 (90.4)	22 (88.0)	Reference level 0/ <i>a</i> **, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> *, <i>a</i> / <i>b</i> ***, <i>b</i> / <i>c</i> ***, <i>b</i> / <i>d</i> **
Sexual desire						
Never	80 (2.8)	0 (0.0)	1 (0.3)	3 (2.5)	0 (0.0)	<0.001
Sometimes	1,571 (55.3)	21 (35.0)	113 (36.5)	40 (32.8)	9 (36.0)	
Often	1,192 (41.9)	39 (65.0)	196 (63.2)	79 (64.8)	16 (64.0)	Reference level 0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***, 0/ <i>d</i> *
High consumer pornography						
No	2,175 (78.7)	34 (59.6)	191 (61.8)	74 (62.7)	15 (68.2)	Reference level
Yes	587 (21.3)	23 (40.4)	118 (48.2)	44 (37.3)	7 (31.8)	0/ <i>a</i> ***, 0/ <i>b</i> ***, 0/ <i>c</i> ***

Table 4 continued

	0 = No sexual online behaviour n (%)	a = Met online, sex online n (%)	b = Met online, sex offline n (%)	c = Posted sexual pictures n (%)	d = Sold sex online n (%)	Pairwise comparisons from logistic regression
IRMA 80p						
0	2,284 (83.0)	32 (56.1)	229 (76.8)	88 (71.5)	13 (54.2)	Reference level
1	469 (17.0)	25 (43.9)	69 (23.2)	35 (28.5)	11 (45.8)	0/a***, 0/b***, 0/c***, 0/d***, a/b**, a/c**, b/d*
Sexual abuse						
No	2,434 (93.7)	43 (87.8)	244 (85.0)	80 (73.4)	9 (37.5)	Reference level
Yes	164 (6.3)	6 (12.2)	43 (15.0)	29 (26.6)	15 (62.5)	0/b***, 0/c***, 0/d***, a/d***, b/c**, b/d***, c/d***
Physical abuse, ever						
No	1,979 (70.3)	31 (53.4)	203 (65.5)	61 (50.0)	6 (24.0)	Reference level
Yes	837 (29.7)	27 (46.6)	107 (34.5)	61 (50.0)	19 (76.0)	0/a**, 0/c***, 0/d***, a/d*, b/c**, b/d***, c/d*

Chi square test, * < 0.05, ** < 0.01, *** < 0.001

sexual content, which will attract high attention [23, 49], and due to the easy access, accessibility, anonymity on the Internet [7] and broad networking possibilities online. Parallels might also be drawn to studies showing that youth with poorer psychological health, e.g. those selling sex online or engaging in self-harming behaviours, use the Internet in a more risky way, including visiting more sexual sites online [23, 36, 50].

In the area of Internet use, the participants with a history of online sexual behaviour reported more risky online behaviour. This result is in line with previous studies on youth and online sexual behaviour [11]. Some of the assessed online sexual behaviours entail sexual risk taking online or are closely related to each other. For example, a young person meeting a person online for sex offline might at some point (but not always) reveal their name, telephone number, etc. to be able to meet someone offline. The line between what is a positive networking behaviour and what is risky behaviour is not always clear, but the risks seem to be small according to most studies [10, 27, 31]. The study by Wolak et al. [10] showed that for most youths the risk of being victimized online was small, but the youths most at risk were those with depression, social problems and those who broke rules. The results in the current study pointed in the same direction.

Most prominent were the associations between a sexual life online and a more sexual life in general. Youth in our study who had engaged in online sexual behaviour had more experiences with different types of sex (oral-, vaginal- and anal sex). In the bivariate analyses, early sexual debut and more partners were significantly more common among these individuals compared to other youth. Studies about sexting behaviours (sending and receiving sexual pictures and texts) have been shown to be associated with a more sexualized life, including more sexual risk taking [12, 13, 22]. Also, high consumption of pornography was associated with online sexual behaviours, indicating that high consumers of pornography, to some extent, might be inspired by the material they see. Previous research suggests that consumption of pornography is associated with a range of sexual outcomes and behaviours [51–53]. However, Hald et al. [54] found that consumption of sexually explicit material was only one among many factors that influenced online sexual behaviour.

Third, the young persons in our study who engaged in online sexual behaviour were more often victims of maltreatment in the form of physical or sexual abuse. Earlier studies point in the same direction when it comes to young persons selling sex [55]. Children who are victims of abuse have been shown to be both more sexually active and more prone to risk taking in general [56–58].

Fourth, in the bivariate analysis the youth who had sold sex online stood out compared to the other groups with

Table 5 Multiple logistic regression analyses in six different models

Study program [§]	No sexual online behaviour/met online, sex online 0/a		No sexual online behaviour/met online, sex offline 0/b		No sexual online behaviour/posted sexual pictures 0/c		Met online, sex online/met online, sex offline a/b		Met online, sex online/posted sexual pictures a/c		Met online, sex offline/posted sexual pictures b/c	
	OR (95 %CI)	p value	OR (95 %CI)	p value	OR (95 %CI)	p value	OR (95 %CI)	p value	OR (95 %CI)	p value	OR (95 %CI)	p value
Vocational study program								0.38 (0.16–0.89)				0.026
Unemployed mother			1.64 (1.10–2.45)	0.016								
PBI mother					1.78 (1.06–3.00)	0.029						
SOC cut-off 25					2.15 (1.34–3.46)	0.002						1.80 (1.08–2.99)
Tried heroin, cocaine, ecstasy, amphetamine					3.82 (1.95–7.48)	<0.001						0.023
Antisocial behaviour			1.97 (1.41–2.74)	<0.001								
Internet risk	7.96 (2.79–22.69)	<0.001	4.74 (3.33–6.74)	<0.001	6.82 (3.55–13.07)	<0.001						
High consumer Internet	2.18 (1.12–4.24)	0.022										
Oral sex			2.83 (1.52–5.25)	0.001								
Anal sex	3.45 (1.81–6.60)	<0.001	1.40 (1.04–1.89)	0.026	2.15 (1.34–3.46)	0.001						
Vaginal sex			11.22 (3.81–33.04)	<0.001	3.55 (1.56–8.09)	0.003		17.79 (4.08–77.61)				0.18 (0.05–0.65)
High consumer pornography			2.02 (1.49–2.74)	<0.001	2.57 (1.60–4.14)	<0.001						0.009
IRMA, 80p	3.07 (1.60–5.89)	0.001						0.47 (0.22–0.98)				0.043
Sexual abuse			1.59 (1.05–2.41)	0.028	2.71 (1.53–4.80)	0.001				4.54 (1.28–16.07)		0.019
Physical abuse	2.43 (1.28–4.61)	0.007						0.46 (0.22–0.96)				0.038

Group d sold sex online excluded due to too few observations in the model, [§] for reference level see Tables 2, 3 and 4

different online sexual behaviours. This group reported a more problematic background, poorer health and more risk-taking behaviours including sexual experiences compared to the other groups. Many previous studies describe youth selling sex as a vulnerable group with problematic relationships to their parents [55, 59–61], more experience of both physical and sexual abuse as well as alcohol and drug abuse [62, 63], anti-social behaviours [64] and self-harming behaviours [55]. The other assessed online sexual behaviours in this study have not been shown to be associated with the same range of problems [65–67].

Among the other online sexual behaviours (except for selling sex) the differences were not as clear and at times difficult to interpret. Youth who had had sex online or offline with a person met online had a less disadvantaged background with less risk-taking behaviours than the youth who had posted sexual pictures online and sold sex online. However, the greatest differences in sexual experiences were shown between the youth who had met a person online for sex online and those who had met online for sex offline. The latter group had significantly more sexual experiences, including more sexual partners, than the former group.

Although differences were found between the groups, a clear pattern failed to emerge to confirm the suggested hierarchy. The studied behaviours seem to be performed by a group of youth with similar backgrounds with regard to health, risk taking and sexual behaviour, but which differed from youth who had not performed sex online. Parallels might be drawn to the results of a study by Ybarra et al. [20] showing that not one specific online behaviour is more associated with online personal victimization (such as unwanted sexual solicitation or harassment) than others. They found that engaging in a pattern of different kinds of online risk behaviours was more risky than engaging in one specific type of behaviour alone. In our study, 23 %, or 119 out of the 521 participants with a history of online sexual behaviour, had performed more than one of the assessed behaviours. This poly-active group needs to be studied further in the future.

Strengths and limitations

The current study is one of few that comprehensively studied different online sexual behaviours in a representative sample. The results in the study should, however, be read in the light of the following limitations.

The dropout rate was high, 39.5 % and part of this can be explained by the fact that on a typical day 10 % of youths are absent from school. One assumption is that the absent group probably could have accentuated the results since people dropping out from research more often come from problematic families and are burdened with more psychosocial health issues and lower motivation to participate

both in school and in surveys [68]. On the other hand, there are studies that have found little evidence for substantial bias as a result of nonparticipation [69].

Three out of the four questions focused on online sexual behaviour that occurred during the last 12 months which was different from the question of selling sex online that represented lifetime experience. The rationale for this was partly to capture the experiences of older adolescents who are relatively more experienced online users than their younger counterparts [1]. The relatively uncommon experience of selling sex needed a longer time period to reach a reasonable power for the analyses. Even so, the power was not sufficient to enter the question of selling sex into the final multinomial logistic regression analysis. Second, the study did not investigate the ages of the persons the participants had sex with online or offline. It is unknown whether they were the same age or much older. This information could help to clarify whether these behaviours were more of a dating experience or a grooming situation [23, 26]. Neither did the questions cover whether the participants' experiences were positive or negative nor if any of the online contacts led to an abusive situation. The question about posting sexual pictures online can be limiting in one way, since the answers did not differentiate whether they were sent to a friend, a stranger or if the pictures were posted on sites without knowing who would watch them. However, we preferred to keep the question broad since the sender never knows how the picture will be used in the future. Finally, the group that did not feel that the customary gender division into male and female fitted them was excluded since the group was small and the answer per se difficult to analyse. From an earlier descriptive report [70], we found that this group had more problems in most areas compared to the participants who identified themselves as male or female. Including this group in the analyses would probably marginally strengthen the results with a little bit higher endorsement of sexual behaviours online.

Conclusions

Our study suggested that most Swedish youth do not engage in online sexual behaviour including having sex with online contacts, posting sexual pictures online or selling sex online. Online sexual behaviours may be normative, positive and fun, but one has to keep in mind that there is a thin line between this and a more problematic behaviour shown in this study, especially selling sex online. Professionals working with young people need to offer support to help young people better assess the risks of sexual online behaviours. This type of support would be especially important for youth selling sex online who also might be in need of protection and therapeutic support.

Acknowledgments The authors wish to acknowledge the Swedish Agency for Youth and Civil Society for making this study possible.

Conflict of interest The authors declared no potential conflicts of interests with the respect to the research, authorship, and/or publication of this article.

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