



# Sexual harassment and emotional and behavioural symptoms in adolescence: stronger associations among boys than girls

Riittakerttu Kaltiala-Heino<sup>1,2,3</sup> · Sari Fröjd<sup>4</sup> · Mauri Marttunen<sup>5,6,7</sup>

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## Abstract

**Purpose** To study the associations between subjection to sexual harassment and emotional (depression) and behavioural (delinquency) symptoms among 14-to-18-year-old adolescents, and gender differences within these associations. **Methods** 90,953 boys and 91,746 girls aged 14–18 participated in the School Health Promotion Study (SHPS), a school-based survey designed to examine the health, health behaviours, and school experiences of teenagers. Experiences of sexual harassment were elicited with five questions addressing five separate forms of harassment. Depression was measured by the 13-item Beck Depression Inventory and delinquency with a modified version of the International Self-Report Delinquency Study (ISRD) instrument. Data were analysed using cross-tabulations with Chi-square statistics and logistic regression.

**Results** All sexual harassment experiences studied were associated with both depression (adjusted odds ratios varied from 2.2 to 2.7 in girls and from 2.0 to 5.1 in boys) and delinquency (adjusted odds ratios 3.1–5.0 in girls and 1.7–6.9 in boys). Sexual name-calling had a stronger association with depression and with delinquency in girls (adjusted odds ratios, respectively, 2.4 and 4.2), than in boys (adjusted odds ratios, respectively, 2.0 and 1.7), but otherwise stronger associations with emotional and behavioural symptoms were seen in boys.

**Conclusions** Subjection to sexual harassment is associated with both emotional and behavioural symptoms in both girls and boys. The associations are mostly stronger for boys. Boys subjected to sexual harassment may feel particularly threatened regarding their masculinity, and there may be less support available for boys traumatised due to sexual harassment.

**Keywords** Sexual harassment · Adolescence · Mental health · Delinquency · Depression

✉ Riittakerttu Kaltiala-Heino  
merihe@uta.fi

<sup>1</sup> Department of Adolescent Psychiatry, Tampere University Hospital, Box 2000, 33521 Tampere, Finland

<sup>2</sup> Vanha Vaasa Hospital, Vierinkiventie 1, 65380 Vaasa, Finland

<sup>3</sup> School of Medicine, University of Tampere, 30014 Tampere, Finland

<sup>4</sup> School of Health Sciences, University of Tampere, 30014 Tampere, Finland

<sup>5</sup> Faculty of Medicine, University of Helsinki, 00014 Helsinki, Finland

<sup>6</sup> Department of Adolescent Psychiatry, Helsinki University Hospital, Box 590, 00029 Helsinki, Finland

<sup>7</sup> Mental Health Unit, National Institute for Health and Welfare, Box 30, 00271 Helsinki, Finland

## Introduction

Sexual harassment is defined legally as gender-based discrimination which in workplaces or schools may seriously impair the victim's performance at work or ability to participate in and benefit from education, and creates a hostile work/school environment [1, 2]. In public health research, sexual harassment may be studied as a form of sexually aggressive behaviour and a traumatising experience for those who are victimised. Sexual harassment can be divided into gender harassment, unwelcome sexual attention, and sexual coercion [3]. Gender harassment comprises verbal and non-verbal gender-based hostile/derogatory communication or gender related name-calling. Unwelcome sexual attention

includes any sexual behaviour, propositions, invitations, and so on, which are distasteful and unwelcome to the target and perceived as offensive. Sexual coercion includes actual sexual assault but also any behaviours where sexual co-operation is extorted via promises/benefits or threats.

A pioneering study by the American Association of University Women [4] reported that 81 % of adolescents in the 8th to 11th grades of public schools in the USA had experienced sexual harassment, 27 % of them often. Later studies, limiting the time frame to 3–12 months, have reported prevalences ranging between 35 and 65 % [2, 5–7] with reported experiences increasing in prevalence with increasing age, and with mixed results as to whether the experiences are more common among girls or boys. We have previously reported that among 14–18 year old Finnish adolescents, 55 % of the girls and 40 % of the boys had been subjected to any of five elicited forms of sexual harassment, and that the various forms of sexual harassment are reported by girls 1.2–6.3 times more commonly than by boys (manuscript under review).

Subjection to sexual harassment among adolescents has in population (school based) studies been associated with distress and avoidant behaviours at school, impaired self-esteem, body satisfaction and life satisfaction, behavioural problems, such as delinquent behaviours and substance use, and mental health problems, such as trauma symptoms, depression, self-harm, and eating pathology [2–4, 8, 9]. While concurrent emotional and behavioural problems may be both predisposing factors for and also consequences of sexual harassment, sexual harassment experiences have also been shown to be associated with subsequent emotional and behavioural disorders, eating pathology and self-harm [5, 9–11], although self-harm was actually a stronger predictor of subsequent sexual harassment than vice versa [11].

Sexual harassment was originally studied primarily as discrimination and aggression against women, and conceptualised as a mechanism for reproducing beliefs and attitudes that devalue women because of their sex and maintain rigid gender roles reproducing inequality, even when targeting men [12]. Reinforcing rigid, stereotypic gender roles could be harmful to both females and males [12]. Among adolescents, sexual harassment has been studied as gender-based discrimination [4, 13, 14] but also as a transitional developmental phenomenon, an extension of aggressive behaviours influenced and modified by the emerging sexual desires and increased socialising in mixed gender peer groups in early adolescence when social skills and behavioural control are still under construction [7, 15]. As a phenomenon essentially intertwined with emerging sexuality in early adolescence, sexual harassment could be expected to be stressful and harmful for both girls and boys.

Bucchianeri et al. [8] suggested that sexual harassment was probably more harmful to adolescents than other types of

harassment, and that sexual harassment was similarly associated with substance use behaviours, self-harm, lowered self-esteem, and depression in both sexes. Other studies among adolescents in schools have reported stronger associations between subjection to sexual harassment and psychosocial distress, emotional, and behavioural symptoms among girls than among boys, or similar associations among both sexes. [4, 10, 5, 11, 16]. Among adults, however, in a study focusing specifically on testing the impact of gender on the associations between sexual harassment and negative mental health outcomes, it was found that sexual harassment was a stronger predictor of depression, PTSD symptoms, and generally poorer mental health in men than in women when levels of harassment experiences were high [12]. It is important to notice, though, that sexual harassment studies among adolescents have not focused specifically on detailed exploration of gender differences in mental health correlates/consequences of sexual harassment, and have not necessarily statistically tested the effect of gender on these associations. Emotional and behavioural symptoms often overlap in adolescents [17]. Behavioural symptoms should be controlled for when studying associations between sexual harassment and emotional symptoms, and vice versa. The type of harassment may also play a role. Boys have reported more sexual name-calling and being shown sexual pictures and messages, whereas girls have reported more subjection to sexual comments, more spreading of sexual rumours about them, and more physical forms of harassment [4, 5]. More severe and more personal forms of harassment can be expected to be the most stressful.

The aim of this study was to explore the associations between subjection to sexual harassment and emotional and behavioural symptoms, and gender differences within these associations. More specifically, we pose the following questions:

- (1) Are experiences of sexual harassment associated with emotional (depression) and behavioural (delinquency) symptoms among 14-to-18-year-old boys and girls?
- (2) Are different forms of sexual harassment associated differently with emotional and behavioural symptoms?
- (3) Are the associations similar among girls and boys?

## Materials and methods

The School Health Promotion Study (SHPS) of the National Institute for Health and Welfare is a school-based survey designed to examine the health, health behaviours, and school experiences of teenagers in Finland. The survey is sent to every municipality, and each municipality decides if the schools in their area will participate in the survey. The survey is conducted among 8th and 9th graders (aged

14–16) attending comprehensive school and 2nd year students of secondary education (junior high school and vocational school, mainly aged 16–18) biennially in the same regions in Finland, so that the pooled 2-year data (here 2010–2011) cover the whole country.

Participants completed the questionnaire anonymously during a school lesson under the supervision of a teacher, who did not interfere with the responses. Participants were informed about the nature of the study as well as the voluntary nature of participation in both oral and written form, and returning the survey was considered to be consent to participate. The questionnaire took 30 to 45 min to complete and was then placed in an envelope, sealed, and returned directly to the research centre. The study was duly approved by the ethics committee of Pirkanmaa Hospital District.

In 2010–2011, 90,953 boys and 91,746 girls aged 14–18 participated. The mean (SD) age of both the boys, and the girls was 16.3 (1.2) years.

## Measures

### Sexual harassment

The adolescents were asked if they had ever experienced any of the following: (1) disturbing sexual propositions or harassment via telephone or the Internet; (2) sexually insulting name-calling such as “poof” or “whore” (3) being touched in intimate body parts against one’s will; (4) being pressured or coerced into sex; (5) being offered money, goods or drugs/alcohol in payment for sex. All five forms of harassment had response alternatives yes/no. Of the adolescents, 47.7 % reported subjection to at least one form of sexual harassment, 40.1 % of the boys, and 55.1 % of the girls ( $p < 0.001$ ). Sexual harassment experiences have been presented in detail elsewhere (work under review).

### Depression

R-BDI, a Finnish modification of the 13-item Beck Depression Inventory [18, 19] was used to assess depression. The Beck Depression Inventory is a widely used scale with established validity and reliability in both adult and adolescent samples [20–22]. The Finnish modification of the 13-item BDI showed good psychometric properties in the School Health Promotion Survey [19]. The 13 items eliciting different feelings, cognitions, and physical symptoms related to depression were scored 0–3 (3 indicating the greatest severity), and the scores were summarised (theoretical range 0–39). A cut-off point of eight indicates moderate to severe depression [18, 19], and this

was used to define caseness in this study. In the SHPS, time frame for assessing depression is defined as “how you feel today”. Of the adolescents, 12.2 % displayed moderate to severe depression (7.6 % of boys and 16.8 % of girls,  $p < 0.001$ ).

### Delinquency

Delinquent behaviours were elicited with six questions: During the past 12 months, have you (1) drawn tags or graffiti on walls or elsewhere?, (2) deliberately damaged or destroyed school property or the school building, (3) deliberately damaged or destroyed other property, (4) stolen from a shop or a stall, (5) been involved in a fight, (6) beaten someone up? All these had response alternatives no (=0)/once (=1)/2–4 times (=2)/more than 4 times (=3) a sum score was formed of the delinquent behaviours, theoretically ranging from 0 to 24. In the present data, the sum score of delinquent behaviours ranged 0–18, with a score of 4 or more indicating the 90th percentile that was used to indicate delinquency. The self-report questions on delinquent behaviour were adopted from the Finnish Self-Report Delinquency Study questionnaire, which in turn is a modified version of the International Self-Report Delinquency Study (ISRSD) instrument [23]. The ISRSD instrument has been shown to possess adequate reliability in test–retest studies [24]. As delinquency was defined as scoring above the 90th percentile of the sum score of delinquent behaviours, the prevalence in all the population was 10 %. Of the boys, 12.2 %, and of the girls, 6.3 % scored to above the 90th percentile ( $p < 0.001$ ).

### Sociodemographic background variables

Age was calculated from dates of birth and that of responding the survey, and it was used as continuous variable in the analyses.

The adolescents were asked if their family included mother and father/mother and stepfather/father and stepmother/mother alone/father alone/some other guardian/a spouse. In the analyses, family structure was dichotomized to mother and father/any other family constellation. Of the adolescents, 77.7 % were living with both their parents.

Parental education was elicited separately for the father and the mother: “What is the highest education your father/mother has completed?” The response alternatives were comprehensive school only/junior high school or vocational school/junior high school or vocational school and further vocational studies/university or polytechnic. For the analyses, parental educational level was coded low if neither parent had completed more than comprehensive school. Low parental education was reported by 6.2 % of the respondents.

Parental unemployment was elicited “During the past year, have your parents been unemployed or laid off work?” The response alternatives were no/one parent/both parents. Of the respondents, 69.2 % reported no parental unemployment during the past year, 27.2 % reported that one parent had been unemployed or laid off, and 3.6 % reported that both parents had been unemployed or laid off during the past year.

### Statistical analyses

Bivariate associations between sexual harassment variables and depression/delinquency were studied using cross-tabulations with Chi-square statistics. Multivariate associations were studied using logistic regression. Depression/delinquency was in turn entered as the dependent variable. Independent variables were first entered all the sexual harassment variables simultaneously, controlling for age and the other mental health dimension (delinquency, when depression was the dependent variable, and vice versa). For a more detailed analysis, each sexual harassment variable was entered alone as the independent variable, controlling for age and the other mental health dimension (delinquency, when depression was the dependent variable, and vice versa), and finally sociodemographic variables (family structure, mother’s and father’s education, and unemployment of parents) were added. The analyses were carried out separately for boys and girls. Interaction analyses were carried out to study whether the associations between the sexual harassment variables and emotional/behavioural symptom dimension differed by sex, by entering into the models again as dependent variables in turn depression/delinquency, and as independent variables each sexual harassment variable in turn and sex, age, and interaction term sexual harassment variable  $\times$  sex. Odds ratios with 95 % confidence intervals are given. In the interaction analyses, the reference categories were set, so that girls were compared with boys, and interaction term odds ratios above 1 indicate that the association between the sexual harassment variable, and the dependent variable is stronger in girls, and interaction term odds ratios  $<1$  indicate that the association is stronger in boys.

### Attrition

About 10–15 % of pupils are absent from school any given day. No information is available of them. Among those who were present and returned a filled questionnaire, 1.7 % had skipped sexual harassment questions, 0.8 % had skipped delinquency questions, and only 29 persons depression items. Attrition due to skipping central items is considered negligible,

## Results

In the bivariate analyses, both depression and delinquency were statistically significantly ( $p < 0.001$ ) associated with all forms of sexual harassment elicited among both girls and boys (Table 1). Among the girls who had experienced the different forms of sexual harassment, the proportion of those with depression varied from 25.5 % (name-calling) to 37.2 % (offered payment for sex), and the proportion of those displaying delinquency varied from 11.8 % (name-calling) to 24.8 % (offered payment for sex). Among the boys who had experienced the different forms of sexual harassment, the proportion of those with depression varied from 11.3 % (name-calling) to 40.0 % (pressured/coerced to sex), and the proportion of those displaying delinquency varied from 17.1 (name-calling) to 55.5 % (offered payment for sex). The associations presented in Table 1 all persisted statistically significantly at a level of  $p < 0.001$  when analyses were carried out stratified for age (14, 15, 16, 17, and 18 year olds separately) (data not shown).

When entered into the multivariate models simultaneously, controlling for age and the other symptom dimension, all the sexual harassment variables were independently associated with depression and delinquency among both girls and boys. Among girls, odds ratios for depression varied from 1.4 (unwanted sexual touching and offered payment for sex) to 1.9 (sexual name-calling), and odds ratios for delinquency varied from 1.4 (offered payment for sex) to 2.9 (sexual name-calling). Among boys, odds ratios for depression varied from 1.5 (unwanted sexual touching) to 2.1 (offered payment for sex, and odds ratios for delinquency from 1.4 (sexual name-calling) to 3.1 (offered payment for sex). Depression and delinquency were statistically significantly associated with each other (Table 2). When entered simultaneously, the sexual harassment variables displayed lower odds ratios for depression and delinquency than when entered one by one (Tables 3, 4). This reveals that they are inter-correlated, even if all are still independently associated with the disorders studied.

When each sexual harassment variable was entered separately as independent variable, controlling for age and delinquency, each one was statistically significantly associated with depression. The associations all persisted when family background was further controlled for (Table 3). In girls, adjusted odds ratios for depression varied from 2.2 (disturbing sexual propositions and unwanted sexual touching) to 2.7 (pressured/coerced to sex) and in boys from 2.0 (name-calling) to 5.1 (pressured/coerced to sex).

As the differences between odds ratios and their confidence intervals suggested different risks for depression according to sexual harassment experiences among girls

**Table 1** Depression and delinquency according to experiences of sexual harassment among 14-to-18-year-old Finnish girls and boys (% , n/N)

	Has received disturbing sexual propositions		Has experienced sexual names-calling		Has experienced unwanted sexual touching		Has been pressured/coerced to sex		Has been offered payment for sex	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
<b>Girls</b>										
Depression	26.4	12.4	25.5	10.8	29.9	14.1	36.7	15.1	37.2	15.5
	7563/	7714/	9554/	5722/	4724/	10,536/	2646/	12,600/	2019/	13,225/
	29,639	62,047	37,510	53,144	15,813	74,777	7201	83,330	5423	85,101
Delinquency	12.1	3.6	11.8	2.4	14.9	4.4	18.7	5.3	24.8	5.1
	3437/	2232/	4393/	1278/	2347/	3308/	1341/	4310/	1339/	4308/
	28,494	61,716	37,306	52,872	15,711	74,404	7158	82,903	5391	84,661
<b>Boys</b>										
Depression	22.8	6.4	11.3	5.3	24.4	6.5	40.0	6.8	39.8	6.7
	1378/	5302/	3708/	2970/	1190/	5476/	801/	5857/	874/	5769/
	6034	82,581	32,851	55,770	4868	83,616	2005	86,426	2196	86,124
Delinquency	32.3	10.7	17.1	9.3	35.5	10.8	51.0	11.3	55.5	11.1
	1918/	8789/	5564/	5134/	1701/	8978/	1000/	9666/	1191/	9457/
	5942	81,773	32,510	55,206	4788	82,793	1960	85,569	2145	85,278
<b>All</b>										
Depression	25.8	9.0	18.8	8.0	28.6	10.1	37.4	10.9	38.0	11.1
	8941/	13,016/	13,262/	8692/	5914/	16,012/	3447/	18,457/	2893/	18,994/
	34,673	144,628	70,361	108,914	20,681	158,393	9206	169,756	7619	171,225
Delinquency	15.6	7.7	14.3	5.9	19.7	7.8	25.7	8.3	33.6	8.1
	5355/	11,021/	9957/	6412/	4048/	12,286/	2341/	13,976/	2530/	13,765/
	34,437	143,489	69,816	108,078	20,499	157,197	9118	168,472	7536	169,939

All the differences between those who report and those who do not report the elicited form of sexual harassment are statistically significant at level  $p < 0.001$

**Table 2** Odds ratios (95 % confidence intervals) for depression and delinquency according to five forms of sexual harassment in 14-to-18-year-old girls and boys, when all the sexual harassment variables are entered in the model simultaneously controlling for age and delinquency/depression as appropriate

	Girls	Boys
<b>Depression</b>		
Age (continuous)	0.9 (0.9–0.9)	1.1 (1.1–1.1)
Disturbing sexual propositions	1.5 (1.4–1.6)	1.6 (1.4–1.7)
Sexual name-calling	1.9 (1.8–2.0)	1.7 (1.6–1.8)
Unwanted sexual touching	1.4 (1.3–1.4)	1.5 (1.3–1.6)
Pressured/coerced to sex	1.6 (1.5–1.7)	1.9 (1.7–2.2)
Offered payment for sex	1.4 (1.3–1.5)	2.1 (1.8–2.4)
Delinquency	2.4 (2.2–2.5)	2.9 (2.7–3.1)
<b>Delinquency</b>		
Age (continuous)	0.6 (0.6–0.6)	0.8 (0.8–0.8)
Disturbing sexual propositions	1.6 (1.5–1.7)	1.7 (1.5–1.8)
Sexual name-calling	2.9 (2.7–3.1)	1.4 (1.4–1.5)
Unwanted sexual touching	1.6 (1.5–1.8)	1.8 (1.7–2.0)
Pressured/coerced to sex	1.6 (1.4–1.7)	1.5 (1.3–1.7)
Offered payment for sex	1.4 (1.3–1.5)	3.1 (2.8–2.5)
Depression	2.4 (2.2–2.5)	2.9 (2.7–3.1)

and boys, interaction analyses were carried out entering each sexual harassment variable in turn as independent variable together with age, sex, and the interaction term  $\text{sex} \times \text{sexual harassment variable}$  in question, and depression as dependent variable. Regarding the different forms of sexual harassment, the interaction terms displayed the following odds ratios (95 % confidence intervals): disturbing sexual propositions 0.69 (0.64–0.75), sexual name-calling 1.2 (1.2–1.3), unwanted sexual touching 0.68 (0.62–0.73), pressured/coerced to sex 0.48 (0.43–0.54), and offered payment for sex 0.46 (0.41–0.51) (in all,  $p < 0.001$ ). This confirms that the association between sexual name-calling and depression was stronger among girls, but the associations between depression and disturbing sexual propositions, unwanted sexual touching, being pressured/coerced into sex and being offered payment for sex were stronger among boys.

Similarly, odds ratios for delinquency were increased according to all the sexual harassment variables when they were entered in the models alone, controlling for age and depression. All the associations persisted when family background was further controlled for (Table 4). In girls, adjusted odds ratios for delinquency varied from 3.1

**Table 3** Odds ratios (95 % confidence intervals) for depression according to five forms of sexual harassment in 14-to-18-year-old girls and boys, when the sexual harassment variables are entered in

the model separately controlling (1) for age and delinquency, (2) age, delinquency, and family background

	Model 1. Sexual harassment variables entered each in turn, controlling for age and delinquency		Model 2. Sexual harassment variables entered each in turn, controlling for age, delinquency, family structure, parental education and parental unemployment	
	Girls	Boys	Girls	Boys
Disturbing sexual propositions	2.3 (2.2–2.4)	<b>3.2 (3.0–3.5)</b>	2.2 (2.1–2.3)	3.0 (2.8–3.2)
Sexual name-calling	<b>2.5 (2.4–2.6)</b>	2.0 (1.9–2.2)	<b>2.4 (2.3–2.5)</b>	2.0 (1.9–2.1)
Unwanted sexual touching	2.3 (2.2–2.4)	<b>3.3 (3.1–3.6)</b>	2.2 (2.1–2.3)	<b>3.1 (2.8–3.3)</b>
Pressured/coerced to sex	2.9 (2.7–3.0)	<b>5.8 (5.3–6.4)</b>	2.7 (2.6–2.9)	<b>5.1 (4.6–5.7)</b>
Offered payment for sex	2.5 (2.4–2.7)	<b>5.6 (5.0–6.1)</b>	2.4 (2.3–2.6)	<b>4.9 (4.4–5.4)</b>

Bolded figures indicate that the difference between girls and boys in odds ratios is statistically significant at level  $p < 0.001$

**Table 4** Odds ratios (95 % confidence intervals) for delinquency according to five forms of sexual harassment in 14-to-18-year-old girls and boys, when the sexual harassment variables are entered in

the model separately controlling (1) for age and depression, (2) age, depression, and family background

Delinquency	Model 1. Sexual harassment variables entered each in turn, controlling for age and depression		Model 2. Sexual harassment variables entered each in turn, controlling for age, depression, family structure, parental education and parental unemployment	
	Girls	Boys	Girls	Boys
Disturbing sexual propositions	3.3 (3.1–3.5)	3.3 (3.2–3.6)	3.1 (2.9–3.3)	3.2 (3.0–3.4)
Sexual name-calling	<b>4.4 (4.2–4.7)</b>	1.8 (1.7–1.8)	<b>4.2 (3.9–4.5)</b>	1.7 (1.6–1.8)
Unwanted sexual touching	3.5 (3.3–3.7)	<b>3.8 (3.5–4.0)</b>	3.3 (3.1–3.5)	<b>3.5 (3.3–3.7)</b>
Pressured/coerced to sex	4.0 (3.6–4.3)	<b>6.0 (5.5–6.6)</b>	3.7 (3.5–4.0)	<b>5.3 (4.8–5.9)</b>
Offered payment for sex	5.3 (5.0–5.6)	<b>7.5 (6.9–8.3)</b>	5.0 (4.6–5.4)	<b>6.9 (6.3–7.6)</b>

Bolded figures indicate that the difference between girls and boys in odds ratios is statistically significant at level  $p < 0.001$

(disturbing sexual propositions) to 5.0 (offered payment for sex) and in boys, from 1.7 (name-calling) to 6.9 (offered payment for sex).

There was no statistically significant interaction between sex and disturbing sexual propositions when predicting delinquency. This indicates that the associations between disturbing sexual propositions and delinquency were similar among boys and girls. Regarding the other forms of sexual harassment, the interaction terms displayed the following odds ratios (95 % confidence intervals): sexual name-calling 2.48 (2.30–2.68), unwanted sexual touching 0.86 (0.79–0.94), pressured/coerced to sex (0.53–0.67), and offered payment for sex 0.67 (0.59–0.75) (in all,  $p < 0.001$ ). This confirms that sexual name-calling was more strongly associated with delinquency among girls than boys, but unwanted sexual touching, being pressured/coerced into sex and being offered payment for sex all, was confirmed to be statistically significantly more strongly associated with delinquency among boys.

## Discussion

All the five types of experiences of sexual harassment studied were independently associated with both depression and delinquency among both girls and boys, and across the adolescent years. Earlier research, likewise conducted in school-based samples, has suggested an association between sexual harassment and emotional and behavioural symptoms [2, 5, 8, 10, 11]. Our research adds to the existing literature, because we studied emotional (depression) and behavioural (delinquency) dimensions in the same study. We were able to control for the behavioural dimension when studying associations with emotional symptoms and vice versa. This is important, because emotional and behavioural symptoms commonly overlap and an association between a risk factor and the symptom dimension could actually be mediated by the other symptom dimension. Yet, this is not the case. Subjection to sexual harassment was independently associated with both

emotional and behavioural symptoms. Furthermore, we demonstrated that even if the five different forms of sexual harassment studied are inter-correlated, they are nevertheless all independently associated with emotional and behavioural symptoms.

Of course, our study being cross-sectional, we cannot claim causal relationships. Delinquent behaviour in adolescence usually occurs in groups, and associating with delinquent peers is in itself a risk factor for experiencing negative interactions, such as peer aggression and sexual harassment [10, 13]. On the other hand, delinquency may occur as a reaction to traumatic events and circumstances [25], and sexual harassment may be traumatizing enough to provoke acting out symptoms. Similarly, depression may be a reaction to traumatizing experiences, such as sexual harassment, but it could also be that depressed adolescents perceive more harassment in interactions not intended as such, or report more experiences that are forgotten or ignored by peers with better emotional resources and ability to cope, or even appear vulnerable and, therefore, become selected as targets of harassment, as has earlier been discussed regarding the associations between depression and subjection to bullying at school [26]. Thus, the reasons why behavioural and emotional symptoms, fairly different from each other, have comparable associations with sexual harassment may be similar in part, but also to a certain extent different.

The odds ratios for depression and delinquency in the present analyses were higher for boys for all other forms of sexual harassment except sexual name-calling. The gender differences were confirmed in our interaction analyses. As sexual harassment was initially conceptualized as oppression of women by men, it was assumed that it is also only harmful for females [12]. However, it is nowadays well known that males experience sexual harassment. Sexual harassment has been seen a mechanism for perpetuating rigid gender roles, and this may be distressing to males as well as females. Street and coworkers set out to focus particularly on sex differences in the associations between sexual harassment and negative mental health features, and demonstrated that more severe experiences of harassment were more strongly associated with depression and poor mental health in general in men than in women [12]. Our present findings concur with those of street and coworkers. Boys subjected to sexual harassment may be less able to gain support from their environment if sexual harassment is nevertheless primarily expected to concern girls, and readiness to support those victimized is built on this erroneous assumption. Boys may also perceive sexual harassment as particularly threatening to their masculine identity, and, therefore, be less inclined than girls to seek help due to sexual harassment, and consequently, be unable to cope effectively. It is possible that adolescent health and social

services and health education pay less attention to the possibility that boys may be subjected to sexual trauma, and consequently offer them less opportunity to acquire skills to avoid sexually traumatizing interactions, to withdraw, and to seek help to cope if subjected to harassment.

Sexual name-calling among boys was less strongly associated with depression and delinquency than among girls. It may be that casual use of sex-related pejorative expressions is so common among boys that they do not always perceive them as negative or harassing, even if they report having heard such language when directly asked. We did not use the term sexual harassment in eliciting the experiences of the young people. Casual use of sex-related expressions, even between friends and in contexts positive to those involved, may nevertheless have a negative impact on others who are more vulnerable or not included in a positive way. The strong association between sexual name-calling and delinquency among girls perhaps reflects conversational style in the subcultures of delinquent girls.

A strength of this study is a uniquely large population-based sample that covers five age cohorts of early and middle adolescents. As a classroom survey, the SHPS reaches the vast majority of adolescents in the age groups studied. The coverage of comprehensive schools is about 99 % in Finland, and the coverage of secondary education is about 90 % (<https://tietoanuorista.fi/hyvinvointi-indikaattorit/koulutus>). Of the pupils, 10–15 % are invariably absent on any given day. It is possible that these adolescents have more experiences of sexual harassment than those present, as unwillingness to attend school is one of the negative consequences of sexual harassment [4]. Those not attending may also suffer more commonly from psychosocial problems, including depression and delinquency, than those present. Therefore, the present rates of sexual harassment, depression, and delinquency may be slightly underestimated. However, even high levels of non-response may not necessarily have an effect on the associations studied [27]. It is also possible that some of the pupils returned empty forms, but unfortunately, we could not obtain information on this form of attrition.

Experiences of sexual harassment were elicited by asking whether the respondent had ever experienced certain behaviours. The term “sexual harassment” was not mentioned. The questions were a part of a large survey where the questions on sexual harassment were placed in a section entitled Sexual Health. It has been shown that the context in which experiences of sexual harassment are elicited influences the ways in which it is reported. The “framing”—the name of the survey, the contents of the rest of the survey and the associations created by knowing who are responsible for the survey may all affect how respondents understand given questions and how they respond [28]. In the present data, we believe that the questions on

sexual harassment were posed as neutrally as possible. Thus, overreporting or underreporting due to contextual influences seems unlikely.

This study has the limitations in reliability and accuracy that are inherent in self-reported data on depression. The 13 item BDI measures the respondent's own perception of his or her depressive symptoms "today", but does not yield diagnostic data on depressive disorders. Severe depressive symptoms in adolescents are, however, likely to be persistent [29], and most of the morbidity associated with depression comes from the large numbers of people with depressive symptoms rather than from the small number of cases with depressive disorders [30]. Furthermore, symptoms of depression are usually better predictors of a clinically diagnosable depressive disorder than are other risk factors [31]. The self-report questions on delinquency were based on internationally known and reliable self-report instruments [23, 24], and they have been previously used in Finnish adolescent public health and mental health research [32, 33]. Self-report of delinquency reveals more incidents than ever end up in official crime statistics, and anonymity of answering was likely to reduce the biasing effect of social desirability.

Thus, sexual harassment experiences were elicited as ever occurred, and emotional and behavioural symptoms for shorter time periods. Particularly for depression, the symptoms of which were elicited for "how you feel today" this may suggest that sexual harassment experiences preceded the symptoms. However, as explained above, we are cautious for assuming causality, as the data is cross-sectional.

Using only the adolescents themselves may be seen another limitation of this study. More accurate information on the adolescents' emotional and behavioural symptoms could have been gained using multiple informants, such as parents and teachers in addition to the young people themselves. Parents and teachers might, however, not know about sexual harassment experiences of the young people if these occur during unstructured leisure time.

A further limitation of the present study is that sexual orientation of the respondents was not elicited. Experiences of sexual harassment have been found more common among non-heterosexual adolescents [16]. Future studies need to take this into account.

## Conclusion

Subjection to sexual harassment across the adolescent years is associated with both emotional (depression) and behavioural (delinquency) symptoms in both sexes. Our study cannot draw conclusions on causal relationships, but the findings underline the necessity of eliciting sexual harassment experiences among adolescents with emotional

or behavioural problems. The associations of sexual harassment with emotional and behavioural symptoms are stronger for boys, and particularly strong in the case of sexual coercion. Health education and adolescent health and social services need to pay more attention to the sexual traumatization of boys to help them develop skills to avoid harassment, and to cope with the experiences that nevertheless occur, in addition to which it is most important work to reduce sexual harassment.

## Compliance with ethical standards

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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