

# Normative and negative sexual experiences of transgender identifying adolescents in the community

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## Abstract

**Background:** Sexuality is a major facet of development during adolescence. Apace with normal sexual development, sexual experiences become more common and intimate. Recent research reports mixed results as to whether this is the case among transgender identifying adolescents. Recent research also suggests that trans youth experience negative sexual experiences (such as dating violence and sexual harassment) more often than their cisgender identifying peers. However, most studies have had clinical or selected samples.

**Objective:** The aim of this study is to compare the normative as well as negative sexual experiences of trans youth with their cisgender peers in the general population.

**Method:** Our study included 1386 pupils of the ninth year of comprehensive school in Finland, mean age (SD) 15.59 (0.41) years. We compared sexual experiences, sexual harassment and dating violence among trans youth and their cisgender identifying peers. Distributions of the outcome variables were calculated among the whole sample and by sex. Next, multivariate associations were studied using logistic regression adjusting for age, sex, honesty of responding and depression. Odds Ratios (OR) with 95% confidence intervals (CI) are given.

**Results:** After adjusting for age, sex, honesty of responding and ultimately for depression, normative sexual experiences of trans youth did not differ systematically from those of the mainstream, cisgender identifying youth. After adjusting for sex, age and honesty, transgender youth had increased Odds Ratios for experiences of sexual coercion and dating violence perpetration. In the final models however, no statistically significant differences were detected in the negative sexual experiences between transgender and cisgender youth.

**Conclusion:** Transgender identifying adolescents presented neither with delayed nor with excessively advanced sexual experiences. However, transgender youth seem to be more susceptible to subjection to sexual coercion and, unexpectedly, dating violence perpetration than their cisgender peers. However, these associations may in fact relate more closely to depression, a prevalent phenomenon among trans youth, than transgender identity itself.

**Keywords:** Transgender; adolescent; sexual experiences; sexual harassment; dating violence

## Introduction

Sexuality is an important area of development in youth. As a part of normal sexual development sexual experiences become more common and intimate (1) as dating progresses from contacts with a romantic flavour in mixed gender group socializing to mutually satisfactory dyadic romantic relationships (2). This accumulation of sexual experiences is considered a part of the formation of sexual identity. Among the vast majority of youth sexual encounters happen

within romantic relationships, while casual sexual contacts outside of a steady relationship are not common (3).

*Sexual orientation* indicates the gender of one's erotic interest. The term *sexual minority* refers to individuals who are sexually interested in their own or in the opposite and their own gender, individuals whose partners are the same or the same and opposite gender or individuals who identify as lesbian, gay or bisexual (LGB) (4).

*Gender identity* refers to how individuals experience their gender (5). It describes who and what individuals feel they are. In the vast majority of people sex chromosomes, primary and secondary gender characteristics and gender identity are uniform (*cisgender identity*). However, the perceived gender may differ from the biological sex. The term *transgender* is used as an umbrella term, subsuming a myriad of gender identities differing in one form or other from biological sex (5). *Gender dysphoria* is a state in which a person feels constantly and strongly that they are of other than their biological sex, their biological sex gives them a persistent feeling of malaise and they want to rid themselves of primary and secondary gender characteristics (6). Identifying as something other than one's biological sex does not automatically cause gender dysphoria.

Sexual experiences, sexual maturation, sexual orientation and gender identity are dimensions of their own, but they relate to each other in many ways.

Many different psychological and social factors can be presumed to slow the sexual development of trans youth (transgender identifying adolescents).

During puberty, increased hormone secretion triggers a series of physical changes, especially in the primary and secondary sex characteristics. Among trans youth and those who suffer from gender dysphoria these changes can lead to mental discomfort and concern over body image (7, 8), such as aversion towards genitals (9), and this may delay their willingness to engage in romantic and erotic encounters. On the other hand, sexual orientation and gender identity minorities may have fewer chances to find suitable partners than their heterosexual and cisgender peers simply due to the nature of belonging to a minority (10). These factors may be detrimental to sexual self-confidence and could inhibit the accumulation of romantic and erotic experiences. Additionally, gender dysphoric and transgender identifying adolescents often have concurrent mental disorders (11-13). Mental disorders in turn may result in lowered self-esteem and social isolation, that may further delay romantic and erotic experiences. On the other hand, mental disorders during adolescence are also related to early and risk-taking sexual behaviour (14-16). This may arise from inability to protect oneself, or from seeking comfort from sexually intimate encounters. Therefore, transgender identifying adolescents could, due to excessive mental disorders and developmental challenges, be especially prone to earlier and riskier sexual behaviour than is appropriate for the developmental phase.

Research on the sexuality of trans youth is scarce and the results are mixed as studies have found trans youth have similar, less or more sexual experiences than their cisgender peers. For example, a United

States study on unselected population found that LGBTQ youth (lesbian, gay, bisexual, transgender, queer or questioning) had more experiences of dating and romantic relationships than their mainstream peers (10). However, this study focused on LGBTQ adolescents rather than specifically on transgender adolescents. Contrary to this, studies in the Netherlands and in Finland found that adolescents referred to evaluation due to gender dysphoric characteristics had fewer sexual experiences than their peers in the general population (17, 18) whereas a Canadian study based on activist material found no difference in the numbers of sexual experiences (19).

Not only the number but also the nature of sexual experiences of trans youth may differ from that in the general population. For example, a study found that 50% of the trans youth in their sample engaged in sex with a partner without involving their own genitals (20). This could indicate that trans youth may feel discomfort related to their genitals. On the other hand, the trans youth still engaged in sex with a partner, even if genitals were not involved, indicating sexual activity is not totally ceased even if one might struggle with questions related to transgender identity and one's body. This could indicate that transgender identity need not disturb reaching adolescent developmental milestones.

Trans youth appear to have more negative sexual experiences such as sexual harassment and dating violence than their mainstream peers (21-23). This has been explained by heterosexism, a cultural tendency to display aggression towards gender and sexual minorities, which serves to maintain traditional male and female roles and the superiority of heterosexuality over other sexualities (24-26). On the other hand, sexual and gender minority youth may also perpetrate sexual harassment more often than their peers in the general population (21). The research so far has not focused on the perpetration of sexual harassment specifically among transgender youth and has proposed no explanation for this phenomenon.

Young transgender identifying individuals, especially late adolescent/young adult trans women (male-to-female) engage in sex work in disproportionately large numbers (27, 28). The research suggests this is related to multiple factors, such as drug use and lack of perceived social support (29) which, in turn, are related to the marginalization and rejection often experienced by transgender identifying individuals (30). This may suggest that transgender youth are particularly vulnerable to subjection to interactions resulting in sexual risk taking such as commercialized sex, and at increased risk for negative sexual experiences such as sexual coercion and violence related to sexual encounters.

To summarize, the empirical research on transgender identity and sexual development in adolescence is scarce. Currently available research on the topic may further fail to distinguish between the sexual development of gender and sexual minority youth, may be based on selected samples, or focus solely on clinically referred subjects. Research has suggested a proneness to both delayed and early advancing and risk-taking sexual behaviours among trans youth. Thus, in light of the currently available research it is hard to understand the sexuality of trans youth in the community, and how this compares to that of same aged general population. As gender identity and sexual development are closely related and also major aspects of adolescent development, we feel further studies on the subject are warranted. The aim of this study is to explore the sexual experiences of trans identifying youth regardless of their sexual orientation. In more detail we ask

- 1) *Do normative sexual experiences differ between transgender and cisgender youth?*
- 2) *Do transgender and cisgender youth differ regarding negative sexual experiences (dating violence and sexual harassment)?*

Sexual development is an important and normative part of adolescence. By researching the sexual experiences of trans identifying adolescents in the population and comparing these to their cisgender peers, we can shed light on the connection between trans identification and sexual development in adolescence. Possible differences in negative sexual experiences between transgender and cisgender youth may have implications for understanding identity development in adolescence but may also reveal discriminating cultural phenomena that warrant attention.

## Materials and methods

### *Population*

The Adolescent Mental Health Cohort and Replication (AMHCR) study is a mental health survey among pupils in their ninth year of comprehensive school. The person-identifiable survey was conducted in the academic years 2002-03, 2012-13 and 2018-19 in the city of Tampere, Finland. The present study is based on the cross-sectional survey of 2018-19. Of the secondary schools (grades 7-9) run by the city of Tampere, 17 agreed to participate, while two schools could not participate due to logistic reasons. The target group of the AMHCR were the 9<sup>th</sup> graders in the participating schools. Parents were informed in advance about the forthcoming study by a message distributed through the digital application used in Finnish schools for communication between school and family. The adolescents responded to the online survey after being informed in writing and orally about the nature

of the study and voluntariness of participation. They logged in to the survey using personal codes during a school lesson supervised by a teacher, who provided information on the study but did not interfere with responding. After reading the written information the adolescents were asked to indicate their consent online. The study was duly approved by the ethics committee of Tampere University Hospital and given appropriate administrative permission by the appropriate authorities of the City of Tampere. In total 1,425 adolescents logged in to the survey. Of these, 39 (2.7%) declined to respond, leaving 1,386 participants, of whom 676 (47.4%) reported that their sex (as indicated in identity documents) was female and 710 (49.8%) male. The mean (SD) age of the participants was 15.59 (0.41) years, of whom 82.4% were living with both parents. Of these 5.5% reported that their father and 4.4% that their mother had only basic education, while 24.3% reported that at least one of their parents had been unemployed or laid off during the past 12 months.

### *Sex and gender identity*

At the beginning of the survey, the respondents reported their sex as indicated in their identity documents, with response alternatives “boy” and “girl”. It was explicitly mentioned that this question referred to sex as indicated in official identity documents. According to reported sex, the respondents are referred to here as boys and girls, or males and females.

Later, in the section of the survey addressing health, respondents were asked about their perceived gender as follows: “Do you perceive yourself to be...”, with response options “a boy/a girl/both/none/my perception varies” (31). According to sex and perceived gender, the respondents were categorized to one of three gender identities: cisgender identity (indicated male sex and perceives himself as a boy, or female sex and perceives herself as a girl), opposite sex identification (male sex, perceived to be a girl; or female sex, perceived to be a boy), and other/non-binary gender identity (independent of sex: perceived to be both a boy and a girl, perceived to be neither a boy nor a girl, variable). Of the respondents, 96.9% (n = 1,329) reported cisgender identity, 0.2% (n = 3) opposite sex identification, and 2.9% (n = 40) other/non-binary gender identity. In the analyses, cisgender and transgender (= opposite sex identification or other/non-binary gender identity, n = 43) were compared.

### *Normative sexual experiences*

Experiences of steady relationships were in this study elicited by asking “Are you in a steady relationship?” Response alternatives were “yes/not now but I have

been earlier/I have not been in a steady relationship". In the analyses, going steady was dichotomized to ever vs. never. The progression of consensual sexual experiences from lighter (e.g. holding hands) to more intimate was measured by asking if the respondent had experienced (1) kissing on the mouth (yes/no), (2) light petting (fondling on top of clothes, yes/no), (3) heavy petting (fondling under clothes or naked, yes/no) and (4) sexual intercourse (yes/no) (32). All these experiences are normative, i.e. most of the adolescents gain these experiences and they are largely considered a part of ordinary development (2).

#### *Sexual harassment*

Experiences of sexual harassment were studied here as dependent variables. The adolescents were asked if they had ever experienced any of the following: (1) Disturbing sexual propositions or harassment by telephone or through 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. The response alternatives to all five questions were yes/no. For the purposes of the present study, we classified the items according to Fitzgerald et al. (33) as gender harassment (sexual name-calling), unwelcome sexual attention (disturbing propositions and/or harassment or unwelcome touching) and sexual coercion (pressured/coerced into sex and/or being offered money for sex).

#### *Dating violence*

Both subjection to and perpetration of dating violence were elicited. The respondents were asked "Have you ever been subjected to violent behaviour (such as hitting, punching, hair-pulling or similar) by a date or steady partner?" and "Have you ever acted violently (for example by hitting, punching, hair-pulling or similar) towards a date or a steady partner?", both with response alternatives "yes" and "no".

#### *Confounding*

Confounding factors controlled for were age, sex, honesty of responding and depression.

#### *Age and sex*

Age was calculated from date of responding and date of birth and was used as a continuous variable in the analyses. Confounding by age needs to be controlled for because during adolescence, even small age differences may have an impact on all aspects of development (34, 35). Similarly, confounding by sex is important because boys and girls develop at

different rates during adolescence (36) and because subjection to sexual harassment and aggressive behaviours are unevenly distributed across sex (37, 38).

#### *Honesty of responding*

It has been demonstrated that some adolescents deliberately misrepresent themselves in survey studies, exaggerating their belonging to minorities as well as their problem behaviours, symptoms and psychosocial problems (39-41). Consequently, the proportion of those belonging to minorities (such as disabled adolescents, immigrants, sexual minorities) appears implausibly high and associations between minority status and psychosocial problems are overestimated. In relation to gender identity, such overestimation may risk a perception in society that gender variant youth are victims rather than active subjects participating in building the contemporary adolescent community. A sincerity screening question (such as: "Have you responded honestly in this survey?") has been suggested as an appropriate method for controlling for such bias (40, 41). Gender identity is currently extensively portrayed in the media (42) and is thus likely to be a topic which tempts adolescents to give facetious responses. In the present study, a sincerity screening question was presented at the end of the survey as follows: "Have you responded in this survey as honestly as possible?" with response alternatives "yes" and "no". In the analyses, the sincerity question was used to categorize study participants into those who answered yes (87.7%), those who answered no (2.8%) and those who skipped the sincerity question (9.5%).

#### *Depression*

A Finnish modification of the short form of the Beck Depression Inventory (R-BDI) (43) was used to measure depression. R-BDI is a Finnish modification of the 13-item Beck Depression Inventory (44), in which options indicating positive mood have been added to each item. The questionnaire has been shown to possess good reliability in measuring depression in adolescent populations (45). All items are coded 0-3, thus the sum score of the scale ranges from 0 to 39. Depression was used as a continuous measure.

#### *Statistical analyses*

Distributions of the outcome variables were calculated among the whole sample and by sex. Sexual experiences, experiences of subjection to sexual harassment and experiences of dating violence as a victim or a perpetrator were first compared between cisgender and transgender adolescents using cross-tabulations with chi-square statistics/Fisher's

exact test where appropriate. Next, multivariate associations were studied using logistic regression. The sexual experiences, sexual harassment and dating violence variables were entered each in turn as the dependent variable. Gender identity was entered as the independent variable, age (continuous) and sex were controlled for. Next, the sincerity screening variable was added into the analyses, and finally depression (continuous). Odds Ratios (OR) with 95% confidence intervals (CI) are given. To avoid bias due to multiple testing, the cut-point for statistical significance was set at  $p < 0.01$ .

## Results

### *Normative sexual experiences*

Of all the participants, 80.3% reported having had a crush or been in love and 49.8% reported having been in a steady relationship. Types of sexual experiences grew scarcer according to increasing intimacy, with 51.7% reporting experiences of kissing, 37.7% reporting light petting, 27.0% reporting heavy petting and 18.6% reporting intercourse. Experience of either heavy petting or intercourse was reported by 28.5%.

Boys reported more commonly than girls all the normative sexual experiences elicited except having had a crush on or having been in love with somebody (Table 1).

**TABLE 1.** Sexual experiences, subjection to sexual harassment and dating violence experiences (% (n/N)) among Finnish pupils in their ninth year at school and comparison between girls and boys

	Girls	Boys	<i>p</i> girls vs. boys
Has had a crush or been in love	79.9 (518/648)	80.6 (541/671)	0.75
Ever in a steady relationship	42.0 (272/648)	57.5 (383/666)	< 0.001
Kissing	48.0 (307/639)	55.2 (365/661)	0.006
Light petting	33.5 (211/629)	41.7 (272/652)	0.002
Heavy petting	24.2 (152/627)	29.6 (190/641)	0.02
Intercourse	15.7 (100/637)	21.5 (140/651)	0.005
Heavy petting or intercourse	25.4 (158/621)	31.5 (199/632)	0.01
Gender harassment	25.5 (164/644)	21.1 (140/663)	0.04
Unwelcome attention	25.0 (160/641)	6.5 (43/664)	< 0.001
Sexual coercion	8.0 (51/637)	2.6 (17/657)	< 0.001
Subjection to dating violence	2.9 (18/618)	4.8 (30/628)	0.06
Perpetration of dating violence	1.8 (11/ 614)	3.8 (24/624)	0.02

**TABLE 2.** Odds Ratios (95% confidence intervals) for dating and sexual experiences, sexual harassment and dating violence among transgender identifying 15-year-old adolescents as compared to their cisgender peers in Finland

	Model 1. Controlled for sex and age			Model 2. Controlled for sex, age and reported honesty of responding			Model 3. Controlled for sex, age, honesty and depressive symptoms		
	cisgender	transgender	<i>p</i>	cisgender	transgender	<i>p</i>	cisgender	transgender	<i>p</i>
<i>Love and romance</i>									
Has had a crush or been in love	ref	0.5 (0.3-1.0)	0.04	ref	0.5 (0.3-1.0)	0.05	ref	0.5 (0.2-0.9)	0.03
Ever in a steady relationship	ref	2.3 (1.1-4.6)	0.02	ref	2.2 (1.1-4.6)	0.03	ref	1.6 (0.8-3.4)	0.20
<i>Sexual experiences</i>									
Kissing	ref	1.4 (0.7-2.7)	0.31	ref	1.3 (0.7-2.5)	0.41	ref	1.0 (0.5-2.0)	0.93
Light petting	ref	1.1 (0.6-2.1)	0.85	ref	1.1 (0.5-2.0)	0.88	ref	0.8 (0.4-1.6)	0.54
Heavy petting	ref	1.3 (0.7-2.7)	0.43	ref	1.3 (0.7-2.7)	0.43	ref	1.0 (0.5-2.19)	0.98
Intercourse	ref	1.2 (0.6-2.8)	0.59	ref	1.3 (0.6-2.8)	0.57	ref	0.9 (0.4-2.1)	0.83
Heavy petting or intercourse	ref	1.5 (0.7-2.9)	0.29	ref	1.4 (0.7-2.9)	0.31	ref	1.1(0.6-2.3)	0.73
<i>Subjection to sexual harassment</i>									
Gender harassment	ref	1.1 (0.5-2.3)	0.79	ref	1.0 (0.5-2.2)	0.94	ref	0.7 (0.3-1.5)	0.32
Unwelcome sexual attention	ref	1.3 (0.6-2.9)	0.56	ref	1.3 (0.6-3.1)	0.48	ref	0.9 (0.4-2.2)	0.87
Sexual coercion	ref	3.2 (1.3-8.1)	0.01	ref	3.2 (1.3-8.1)	0.01	ref	2.3 (0.9-6.0)	0.09
<i>Dating violence</i>									
Subjection to dating violence	ref	3.1 (1.0-9.0)	0.04	ref	2.6 (0.9-8.0)	0.09	ref	1.4 (0.4-4.7)	0.56
Perpetration of dating violence	ref	4.4 (1.5-13.3)	0.008	ref	4.3 (1.4-13.6)	0.01	ref	2.2 (0.6-7.6)	0.21

Experience of having a crush/being in love was borderline less common among transgender than cisgender adolescents (67.5% vs. 80.9%,  $p = 0.03$ ), and experiences of steady relationships borderline more common among transgender identifying youth (66.7% vs. 49.5%,  $p = 0.03$ ), but otherwise the proportions of none of the normative sexual experiences differed between cisgender and transgender adolescents. We found no discernible difference in reported normative sexual experiences in multivariate comparisons between cisgender and transgender adolescents after controlling for age and sex and further for honesty of responding and depression (Table 2).

#### *Subjection to sexual harassment and experiences of dating violence*

Of all participants, experiences of gender harassment were reported by 23.3%, unwelcome sexual attention by 15.6% and sexual coercion by 5.3%. Girls reported more experiences of subjection to unwelcome attention and sexual coercion than boys (Table 1). Transgender identifying adolescents reported more commonly subjection to sexual coercion than cisgender youth (15.4% vs. 5.0%,  $p = 0.01$ ).

Experiences of sexual coercion persisted as associated with transgender identity after controlling for age, sex and reported honesty of responding, but adding depression levelled out differences between transgender and cisgender identifying youth (Table 2).

Of all the respondents, 3.9% reported experiences of subjection to dating violence and 2.8% reported perpetration of dating violence, with no statistical difference between sexes (Table 1). Before controlling for confounding factors, perpetration of dating violence was borderline more common among transgender adolescents. After controlling for age, sex and reported honesty of responding, we found that transgender identity was associated with increased Odds Ratios for reporting perpetration of dating violence (Table 2). Finally, when depression was entered into the model the difference between gender identities in dating violence perpetration was levelled out.

#### **Discussion**

In our non-selected population, normative sexual experiences of transgender identifying youth did not systematically differ from those of mainstream, cisgender identifying youth. Transgender identifying adolescents presented with neither delayed nor with excessively advanced sexual experiences. This is in line with the findings of Veale et al. (19) but differed from those of Bungener et al. (18) and Kaltiala-Heino et al. (17), who found that transgender identifying

adolescents had fewer sexual experiences, and of Korchmaros et al. (10), who reported that transgender adolescents had more sexual experiences than their cisgender counterparts. However, earlier research has focused on adolescents referred to mental health services due to symptoms of gender dysphoria (17, 18), activist cohorts (19) or they have not focused specifically on transgender identifying youth but rather on LGBTQ youth as whole (10), for example. Our novel contribution is that we compared sexual development between transgender and cisgender youth in a general population sample. Clinically referred adolescents with gender dysphoria often have concurrent mental health disorders (11-13), which could inhibit or intensify the accumulation of sexual experiences, for example due to sexual risk taking or insecurities related to gender dysphoria while transgender identifying individuals recruited through LGBTQ networks do not represent the general population. Our results indicate that in terms of sexual development transgender identifying youth are equally well functioning and equally developing individuals as their cisgender peers in the general population.

Several studies have suggested that transgender adolescents are excessively subjected to sexual harassment, more than both cisgender males and females of any sexual orientation (22, 46-48). However, these studies were not based on non-selected population samples, and they did not distinguish between different types of sexual harassment. In our data, transgender reported subjection to gender harassment and unwelcome sexual attention did not differ according to gender identity. This does not appear to fully support the assumption of sexually harassing interactions serving as a mechanism for maintaining heteronormativity in everyday communication.

When sex, age and honesty of responding were controlled for, gender minority youth nevertheless reported increased experiences of the most severe form of sexual harassment, namely sexual coercion. However, when depression was controlled for, transgender adolescents were not statistically significantly more likely to report experiences of sexual coercion. This warrants further study. Depression may originate from special challenges faced by gender minority youth but could also predispose to identity struggles (49). Gender minority youth could be more vulnerable to sexual coercion due to aggression originating from prejudice, but on the other hand, trauma such as sexual coercion could lead to depression. Additionally, depression could predispose to hostile attribution bias and increased reporting of traumatic experiences. In order to assess causal relationships, longitudinal studies are warranted.

Subjection to dating violence was equally common among transgender and cisgender youth. Instead, trans youth differed from their cisgender peers in reporting more commonly perpetration of dating violence, a finding that persisted when age, sex and honesty of reporting were controlled for. Dank et al. (21) reported similar findings with regard to perpetration of dating violence, but different from our results, found that transgender youth were also more frequently subjected to dating violence. The study by Dank et al. (21), however, was limited by a very small sample of transgender adolescents. Some studies have similarly observed that sexual minority youth engage in peer aggression perpetration more than mainstream youth (50, 51). This has been attributed to elevated peer victimization (50), when aggressive behaviour would be a coping mechanism, or self-protective behaviour hiding the perpetrator's own vulnerability (52). However, these explanations do not appear feasible in our data, as gender minority youth did not systematically report increased subjection to peer aggression in the field of dating and sexuality. Finally, the association between transgender identity and dating violence perpetration levelled out when depression was added into the model. This suggests that it may rather be depression, common among gender minority youth (11-13), than transgender identity that is *per se* associated with dating violence perpetration.

A novel approach in the present study was to control for reliability of responding when comparing gender minority and mainstream youth. As previously discussed, some adolescents deliberately misrepresent themselves in survey studies, exaggerating their belonging to minorities as well as their problem behaviours, symptoms and psychosocial problems. Such dishonesty in responding could skew the results, especially in studies where the proportion of gender minorities within the study sample is small. Our logistic regression models indicated that controlling for honesty decreased Odds Ratios across the board. However, none of the statistically significant findings in the bivariate associations exceeded the cut-point of  $p < 0.01$  after controlling for honesty, which adds credibility to our findings.

### Strengths and limitations of this study

Instead of a clinical or an activist sample, we used an unselected sample of adolescents representative of Finnish youth in the general population. In Finland, nine years attendance at comprehensive school is mandatory from the age of seven until sixteen, and over 99% of children of compulsory school age are enrolled in a publicly run comprehensive school. A large portion of earlier research focusing on the area of trans youth sexuality has used selected samples.

Our sample was socio-demographically representative of the 9<sup>th</sup> graders of comprehensive school in the whole country (53). We focused specifically on gender identity and compared transgender and cisgender adolescents. Many earlier studies have drawn conclusions about trans youth development based on findings concerning LGBTQ youth as whole. Thus, our study adds specifically to the knowledge of gender minority youth.

Even though our sample was not small, the small number of transgender adolescents ( $n = 43$ ) limited us to analysing only transgender youth as a whole rather than separating non-binary and opposite sex identification in our study, which we concede to be a weakness.

We identified trans youth with two separate questions. Such a two-step method to identify gender identity has been recommended by Eisenberg et al. (54) and Reisner et al. (55). The first question ("What is your sex?"), which also opened the survey, focused explicitly on the responder's sex as indicated in official documents, such as birth certificate or ID card. Gender identity was then later assessed with a separate question ("Do you perceive yourself to be...") in a section assessing health, after questions about perceived health, height and weight. Same method has been previously used with Finnish adolescent population samples (31).

It has previously been shown that the presentation of a survey item may affect or influence respondents' answers. For example, eliciting "sexual harassment" may affect respondents' ability to recall events related to the subject of the question (56). In order to avoid bias, the term "sexual harassment" was omitted from the survey and experiences of sexual harassment were instead measured by asking if respondents' had experienced certain behaviours. However, in contrast to dating violence, the survey unfortunately did not include questions about perpetration of sexual harassment, so we were unable to examine potential differences or similarities between trans and cis youth in this respect.

Controlling for honesty of responding is a strength of the present study. Adolescents deliberately misrepresent themselves in survey studies, exaggerating their belonging to minorities as well as their problem behaviours, symptoms and psychosocial problems (39-41), and this distorts our understanding of minorities. Honesty screening question, like in the present study, has been shown a valid method for controlling such bias (40, 41). Gender identity has been shown to be a topic vulnerable to facetious responding (31).

Controlling for age is important, because during adolescence even small differences in age may have a large impact on all aspects of development, especially on sexuality (35, 57).

In studying associations between transgender identity and sexuality related issues among adolescents, sex needs to be controlled for as sex differences have been reported in both aspects of normative sexual development (15) and traumatic sexual experiences (58), as well as in reporting transgender identity (31) and gender dysphoria (12) in adolescence.

We consider controlling for depression a strength of the present study as transgender identity is associated with depression (59) and depression is related to sexual behaviour (15) as well as to traumatic sexual experiences such as sexual harassment (58). Previous studies on the subject of gender minority youth and sexuality have not taken depression into consideration. In our data, approximately 16% of the pupils reported depression that could be classified as intermediate or severe depression. This is a typical finding in a Finnish population-based adolescent sample (60) and adds to the generalizability of our results.

## Conclusion

Transgender identifying adolescents in the general population are developing similarly to their cisgender identifying peers in the accumulation and nature of normative sexual experiences. Transgender identity need not entail problems in sexual development and, on the other hand, problems or delays in emotional and physical sexual closeness are not a result of transgender identity but regardless of gender identity may indicate a need for counselling. This is important for professionals working with adolescents, for example in schools and in health care. Transgender youth seem to be more susceptible to subjection to sexual harassment and dating violence perpetration than their cisgender peers. However, this association could in fact relate more closely to depression, a prevalent phenomenon among trans youth, than transgender identity itself. Additional studies, especially longitudinal ones, are warranted in order to better understand the interplay between gender identity, sexuality related violence, and depression among adolescents.

## Author disclosure statement

The authors have no conflicts of interest.

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