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Factors differentiating risk of sexual abuse victimization by adults and peers among adolescents

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ABSTRACT

Background: Research suggests that around half of all cases of sexual abuse among children and adolescents are perpetrated by peers. Yet, there is limited understanding of the distinct risk factors associated with adult versus peer offenders.

Objective: To identify factors that increase the risk of sexual abuse victimization and explores variations in these factors depending on whether the perpetrator was an adult or a peer.

Participants and setting: 9240 secondary school students aged between 12 and 16 years ($M = 14$, $SD = 0.88$) in Norway participated.

Methods: An electronic questionnaire was administered in schools to investigate experiences of sexual abuse and potential risk factors. The data were analyzed using multiple logistic regression analyses.

Results: Two factors were related to a greater risk of being a victim of sexual abuse committed by an adult than a peer: background from a non-European country ($OR = 1.93$, $p = 0.038$) and other experiences of violence ($OR = 1.63$ – 2.91 , $p < 0.005$). The use of alcohol was found to be related to a greater risk of victimization by peers than by adults ($OR = 0.53$, $p = 0.031$).

Conclusions: Adolescents vulnerable to sexual abuse exhibit common traits, regardless of whether the perpetrator is an adult or peer. Yet, specific factors heighten the risk with peers over adults, and vice versa. Recognizing distinct risk factors for abuse by adults and peers enables decision-makers and community workers to create targeted prevention strategies for children and adolescents.

1. Introduction

Child sexual abuse (CSA) is a serious issue that affects many children and adolescents around the world (Mossige & Stefansen, 2016; Myhre et al., 2015; Stoltenborgh et al., 2015), and international meta-analyses estimate that 18 % of women and 7.6 % of men have been victims of sexual abuse during childhood (Stoltenborgh et al., 2015). There is consistent evidence that instances of sexual abuse during childhood and adolescence can lead to severe short- and long-term effects on the physical and mental well-being of affected individuals (Hailes et al., 2019; Hillberg et al., 2011; Maniglio, 2009; Scoglio et al., 2021). Although there has been a longstanding focus on studying sexual violence against minors perpetrated by adults, the study of sexual abuse among peers has only recently gained

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attention in the scientific literature. Research conducted over the past 10 years has shown that around half of all abuse cases with child and adolescent victims have been perpetrated by someone below the age of 18 who is often the victim's peer. To develop accurately targeted prevention measures, decision makers, community workers working with children and adolescents must have knowledge of the factors that contribute to an increased risk of being a victim of sexual abuse. It is therefore imperative to gain more knowledge about what characterizes the groups that may be more at risk of child sexual abuse and to understand the unique dynamics of being sexually abused by adults or someone one's own age. To date, few studies have investigated whether there are different risk factors associated with being subject to abuse by adults or peers.

Historically, the focus of research has been on CSA perpetrated by an adult; as such, there is a large body of research explicating the risk factors for being abused by an adult. A meta-analysis conducted by Assink et al. (2019) summarized the research on the risk factors for a child to experience sexual abuse by an adult perpetrator, identifying several factors related to conditions of high stress in the family environment, such as family dysfunction, low socioeconomic status, and parental divorce. This corresponds well with other research demonstrating a link between low socioeconomic status and a heightened risk of sexual abuse (Assink et al., 2019; Kaltiala-Heino et al., 2016). Parents grappling with financial difficulties may find themselves having fewer means to adequately care for their children in their day-to-day lives. Low socioeconomic status has also been associated with poorer parental mental health (Pettersson & Albers, 2001), low parental skills, and less involvement in the lives of children (Letourneau et al., 2013). Thus, the impact of a challenging upbringing on the likelihood of experiencing sexual abuse is a significant concern, emphasizing the need for research to concentrate on their circumstances and explore strategies for prevention and intervention. It is important to note that prior studies have also identified protective factors; for instance, adolescents with parents born outside the Nordic region face a lower risk of experiencing sexual abuse compared to their counterparts of Nordic descent (Mossige & Stefansen, 2016). Several mechanisms could explain this finding. Families from different cultural backgrounds may have distinct norms, values, and attitudes regarding sexuality and interpersonal boundaries. These cultural differences could influence how parents and adolescents perceive and respond to situations involving potential sexual abuse. Also, immigrant families may have stronger social networks and support systems within their communities, which could provide additional protection and support for adolescents, making them less vulnerable to sexual abuse.

The presence of certain conditions that hinder the ability of parents to provide care, including a history of sexual abuse, substance abuse, and low levels of education, has also been found to increase the likelihood of sexual abuse (Assink et al., 2019). In addition, risk factors associated with the child, such as a previous history of sexual abuse, chronic illness or disability, substance abuse, and excessive internet use, were also identified. These results lend support to the theoretical notion that risk factors operate at various systemic levels and can interact with each other (Assink et al., 2019; Belsky, 1980; Finkelhor & Asdigian, 1996).

Another well-established finding is that girls experience sexual abuse more often than boys (Barth et al., 2013; Mossige & Stefansen, 2016, p. 77; Stoltenborgh et al., 2011), and also at an earlier age and for a longer period than boys (Putnam, 2003). Related to this, it has been suggested that increased physical maturity during this stage of development is one of several factors that increases the risk of sexual abuse during adolescence (Kloppen et al., 2016), contributing to this association. Findings from developmental science indicate that the onset of puberty at an early age in girls is linked to an increased likelihood of engaging in risk-taking behaviors, early sexual activity, and a higher tobacco and alcohol consumption, compared to those who experience puberty on time or later (see Mendele et al. (2007) for a review), supporting the *early timing hypothesis* (Caspi & Moffitt, 1991). Additionally, early maturing girls may be seen as more sexually accessible than their peers and may engage in situations that could lead to sexual activity without fully understanding the consequences, which may explain this association.

Finally, as noted in Assink et al.' (2019) meta-analysis, excessive internet use increased the risk of becoming a victim of sexual abuse. Prevalence studies suggest that there has been an increase in cyber-related abuse and that, in recent years, there has been a clear increase in such cases in Norwegian and international courts (Aanerød & Mossige, 2018, p. 12). The internet is largely an arena without parental monitoring, and thus adolescents are less protected from encountering potential perpetrators of abuse in this arena.

The examination of sexual abuse among peers has gained increased attention in recent years, despite the longstanding tradition of researching sexual violence against minors perpetrated by adults. Moreover, much of the research on peer sexual abuse has focused on prevalence rates, and not so much on risk factors. Tener and Katz (2021) highlighted a gap in our knowledge about the personal experiences and characteristics of individuals affected by peer sexual abuse before adolescence. However, the risk of experiencing sexual abuse increases in adolescence and peaks around the age of 14–17 for both girls and boys, (Gewirtz-Meydan & Finkelhor, 2020), and thus it is imperative to know more about this developmental period. During the teenage years, friends become increasingly important as they contribute to shaping one's worldview. This period also marks a shift toward more independent activities outside parental influence, creating new opportunities for young people to explore and engage in activities on their own (Foulkes & Blakemore, 2016). Risk factors that have been identified for sexual abuse committed by adults have also been found to apply to sexual offenses perpetrated by peers, including low socioeconomic status and divorced parents (Kaltiala-Heino et al., 2016). Other important risk factors identified are early-onset sexual development and risky sexual behavior (Kaltiala-Heino et al., 2018). Studies have also shown that girls are more frequently subjected to sexual offenses by peers during adolescence than boys (Kaltiala-Heino et al., 2016; Turner et al., 2011).

Taken together, the available research literature does not provide a clear understanding of how risk factors differ depending on whether the perpetrator of the abuse is an adult or a peer. In this study, based on a representative sample of children and adolescents, we investigate the characteristics of adolescents who have been subject to abuse by an adult or by a peer to develop our understanding of the point for prevention.

One of the challenges in comparing risk factors depending on the perpetrator's age is that the term "sexual abuse" has been used inconsistently throughout the literature. In the research literature on adult perpetrators, the term primarily refers to sexually abusive acts of a serious nature (Mathews & Collin-Vézina, 2019), whereas in the literature on peers, a broader definition of the term is often

employed, encompassing both severe and less severe forms of abuse (Kaltiala-Heino et al., 2018; Turner et al., 2011). Thus, it has been difficult to compare differences in risk, not knowing whether the same phenomenon is measured. In this study, to be able to compare the groups directly, the term “sexual abuse” will be employed to denote sexually abusive acts (exhibitionism, touching, and sexual intercourse) committed by adults or peers against the will or ability to consent to children and adolescents. That is, the same definition of sexual abuse will be used, regardless of whether the abuse is conducted by an adult or someone roughly the same age as the victim.

2. Methods

2.1. Sample

Data were extracted from a national youth survey on the experience of violence and abuse during childhood (Norwegian acronym: UEVO study) (Hafstad et al., 2020). A representative sample of schools was selected by Statistics Norway (SSB), and all pupils in the selected schools were invited to participate. The final sample consisted of 9240 secondary school students aged between 12 and 16 years ($M = 14$, $SD = 0.88$) in Norway, of whom 4594 (49.7 %) were girls, 4542 (49.2 %) were boys, and 60 (0.6 %) had a non-binary gender identity. The vast majority of the sample were born in Norway (89.6 %), with 16.8 % representing an ethnic minority. The sample constituted 72 % of the gross sample and 86.7 % of eligible students in participating schools. The participants were recruited primarily from public schools but a few private schools were also included.

2.2. Procedure

The schools administered the digital questionnaire on a tablet or PC in classrooms during school hours. The questionnaire took an average of 30 min to complete. Prior to completing the questionnaire, the participants were shown a brief animated film that explained the purpose of the study and the rights of the participants. The project had a comprehensive post-survey follow-up, ensuring that participants who were upset or needed support were taken care of.

2.3. Measures

2.3.1. Experience of sexual abuse

The assessment of sexual abuse encompassed five questions related to incidents (during lifetime) involving adults and an additional five questions pertaining to instances involving peers. These items addressed actions such as: 1) exposing their private body parts, 2) requesting the participant to reveal their private body parts (penis, buttocks, breasts), 3) prompting the participant to touch the offender's private body parts, 4) touching the participant's private body parts, or 5) engaging in sexual intercourse with the participant.”

The questions were developed on the basis of previous studies on the prevalence of child abuse in Nordic countries (Jernbro & Janson, 2016; Mossige & Stefansen, 2016). In line with the legal definition of CSA, all sexual experiences with an adult were categorized as abuse in this study, regardless of whether these experiences were consensual or not. When questioned about the abuse inflicted by a peer, participants were asked the same set of items, but were specifically asked about non-consensual sexual experiences. This was done to prevent inadvertently including instances of consensual sexual activity among peers. Response options ranged from 0 (“never”) to 3 (“many times”). Participants who endorsed at least one experience of sexual abuse by an adult, a peer, or both were categorized as having been exposed to sexual abuse.

2.3.2. Sociodemographic background

We assessed gender by three categories—boy, girl, and non-binary—and all three categories were used throughout the analyses. The non-binary category ($n = 60$, 0.6 % of the total sample) was too small to be included in the interaction analyses. To investigate the interaction effects of gender, a dummy variable called “girl or boy” was generated in which the non-binary gender category was left out.

Country background was measured using two questions about the mother's and father's country of origin. The response options were coded into a categorical variable with three groups, in which “Nordic region” refers to participants whose parents were born in the Nordic countries, “Europe” refers to participants who have at least one parent who was born outside the Nordic region but not outside Europe, and “Outside Europe” refers to participants who have at least one parent who was born outside Europe.

Family affluence was measured using two questions: whether the participant feels that the family can afford to buy what they need and whether the participant has had to drop an activity because the parents could not afford it. The response options were coded into a dummy variable, where “high family affluence” refers to participants who feel that the family can afford what they need and who have not had to drop an activity, and “low family affluence” refers to participants who feel that the family cannot afford what they need and have had to drop an activity.

2.3.3. Risk factors

We assessed *physical disabilities* using three questions about whether the participants had impairment of sight, hearing, or movement. The response options were coded into a dummy variable, where “no disability” refers to participants without a disability, and “disability” refers to participants who have at least one impairment.

Family relations were measured using one question about the adults with whom the participants lived. The response options were coded into a dummy variable, where “non-broken family relations” refers to participants who live with both parents and parents who

live together, and “broken family relations” refers to participants whose parents do not live together or participants who live with other relatives, foster parents, or institutions/youth homes.

Family risk was measured using three questions about whether the participants had ever lived with adults who had an alcohol problem, were mentally ill, or had been in prison. The questions were answered using a three-point scale in which the participants could answer no, yes, or uncertain. The response options were coded into a categorical variable, where “low family risk” refers to participants who answered no, “high family risk” refers to participants who answered yes, and “uncertain” refers to participants who responded that they were unsure whether they had lived with any adults with challenges in relation to alcohol, mental illness, or crime.

Experience of *violence* was measured using six questions about physical violence, eight questions about psychological violence, six questions about having witnessed violence against the mother, six questions about having witnessed violence against the father, and six questions about child neglect. The questions about physical violence, psychological violence, witnessing violence against the mother, and witnessing violence against the father were answered using a four-point scale, where 0 is “never” and 3 is “often.”. The questions about neglect were answered using a five-point scale, where 0 is “never” and 4 is “very often/always.” The inclusion criteria for each type of violence were at least one experience, with the exception of psychological violence, for which the inclusion criterion was at least two experiences on at least two occasions. The questions about the different types of violence were coded into a categorical variable, where 0 = no violence, 1 = one type of violence, 2 = two types of violence, 3 = three types of violence, 4 = four types of violence, and 5 = five types of violence.

Physical maturity was measured using one question about whether the participants perceived themselves as less, more, or as physically mature as others their own age. The question was coded into a dummy variable, where “less or equally mature” refers to participants who do not perceive themselves as more physically mature than others their own age, and “more mature” refers to participants who perceive themselves as more physically mature than others their age.

Alcohol consumption was measured using two questions: whether the participant had ever tried to drink alcohol, and whether the participant had ever consumed so much alcohol that he or she became inebriated. The response options were collapsed and coded into a dummy variable, hereafter denoted as “inebriated by alcohol,” in which (0) refers to participants who have not tried alcohol, have not been inebriated or have been inebriated only once (never or once), and (1) refers to participants who have been inebriated two or more times. The operationalization of the variable does not take into account variations in the age of the participants.

Internet use was measured using one question about the approximate number of hours per day the participant spent on the internet on weekdays. The response options were coded into a dummy variable, where “normal internet use” refers to participants for whom internet use is <1 standard deviation (SD) above the sample average, and “high internet use” refers to participants for whom internet use is 1 SD or higher than the average ($M = 4.5$, $SD = 1.5$). A question was also asked about the approximate number of hours per day the participant spent on the internet during weekends. A Pearson correlation analysis showed a significant strong correlation ($r = 0.76$, $p < 0.000$) between the number of hours spent online on weekdays and the number of hours spent online on weekends. The question about the number of hours spent online on weekdays is therefore assumed to reflect the participant’s internet use in general.

2.4. Statistical analyses

Descriptive analyses of the sample are provided as the number of participants (n) and percentages (%). To examine which risk factors were related to the increased odds of being a victim of sexual abuse, three separate multiple logistic regression analyses were run, one for each dependent victimization variable (victimized by peers, victimized by adults, and victimized by both peers and adults). The reference group for the dependent variables was all adolescents who had not been victimized by peers, adults, or both peers and adults. All risk variables were entered together as independent variables and adjusted for each other to determine the individual contribution of each risk factor to the dependent variables.

As girls are more frequently exposed to sexual abuse compared to boys, we investigated whether the risk factors varied by gender by running moderation analyses between gender and all the risk factors. The interaction effects were run for each dependent variable. Boys made up the reference group.

To examine whether there were differences in the risk factors associated with sexual abuse committed by adults and peers, a multiple logistic analysis was conducted with a dependent variable differentiating between having been victimized by adults or peers. The dependent variable was dichotomous, in which victimized by adults was the exposed group and victimized by peers was the reference group. All risk factors were entered together as independent variables and adjusted for each other to examine the individual contribution of each risk factor to the dependent variable. All adolescents who had experienced sexual abuse by both peers and adults, as well as all adolescents who had not previously experienced sexual abuse, were excluded from the analyses. Consequently, the analysis included a smaller sample size compared to the entire participant pool.

Alpha level for statistical significance was set at $\alpha \leq 0.05$. All statistical analyses were performed using IBM SPSS, version 27.0.

2.5. Ethics

The UEVO study was approved by the Regional Committee for Medical and Health Research Ethics (REC) for the East Region (Case no. 2018/522). This was the first large-scale study in which adolescents aged 12 and above could participate in a research project without parental consent (Hafstad et al., 2020), in accordance with regulations in the Norwegian health research act (Helseforskningsloven, 2017). The questions in the study were designed in close collaboration with a youth expert panel to provide age-appropriate information regarding the purpose of the study, confidentiality, and participant rights. Arrangements were made so that participants who needed follow-up during or after the study were offered help through the local support system, the school health

service, or key adults at school.

3. Results

3.1. Description of the sample

Descriptive statistics are summarized in Table 1. The majority of the adolescents in the study had parents from Nordic countries, while a smaller fraction of the sample had parents from non-Nordic countries. Additionally, most of the adolescents came from families with healthy financial backgrounds. Among the adolescents who reported sexual abuse experiences, the majority had been victimized by their peers, whereas a smaller group reported abuse by an adult. A relatively small but potentially vulnerable subset of adolescents experienced sexual abuse by both a peer and an adult.

3.2. Risk factors related to sexual abuse

The multiple logistic regression analysis showed that being a girl, having a physical disability, a history of violence exposure, having been inebriated by alcohol, or high family risk were factors associated with a higher odds of being subjected to sexual abuse, irrespective of the age of the perpetrator (see Table 2). This was also true for adolescents who perceived themselves as more physically mature than others their age.

On the contrary, having at least one parent born outside Europe seemed to have a buffering effect overall, with a reduced odds of becoming a victim of sexual abuse irrespective of the age of the perpetrator compared to having parents born in the Nordic region. This buffering effect was also evident for adolescents with parents from outside the Nordic region but still within Europe, albeit only for peer abuse.

High internet usage and weak family finances were only related to an increased odds of having been sexually abused by a peer, while having a non-binary gender identity was related to an increased odds of being victimized by adults and by both adults and peers. Having divorced parents was not related to sexual abuse exposure.

Given the consistent findings of this study and several others that highlight the higher prevalence of sexual abuse among girls compared to boys (Stoltenborgh et al., 2011), we explored whether gender moderates the relationship between other risk factors and sexual abuse. We did not observe any significant interaction effects. We subsequently investigated whether there were significant differences in the risk factors associated with having been sexually abused by an adult ($n = 193$) and by a peer ($n = 1642$). As previously described, a non-European country background was associated overall with a lower odds of having experienced sexual abuse. However, for those within this group who did report sexual abuse, the odds of being abused by an adult was significantly higher than for being abused by a peer ($OR = 1.93$, 95 % CI [1.08, 3.59], $p = 0.038$). This also applied to adolescents who had two ($OR = 1.63$, 95 % CI [1.01, 2.64], $p = 0.046$), three ($OR = 2.45$, 95 % CI [1.39, 4.32], $p = 0.002$) or four ($OR = 2.91$, 95 % CI [1.22, 6.92], $p = 0.016$) experiences of violence—in other words, having multiple experiences of violence was related to a higher odds of being sexually abused by an adult than by a peer. On the other hand, having been inebriated by alcohol two times or more was related to a higher odds of being sexually abused by a peer than by an adult ($OR = 0.53$, 95 % CI [0.29, 0.94], $p = 0.031$). Apart from these risk factors, we did not find that any of the other tested risk factors had a differentiated risk related to the offender's age.

4. Discussion

Our findings show that there are both common and unique characteristics of adolescents who experience sexual abuse committed by adults and peers, and they therefore bring light to an important dynamic in the association between perpetrators' age and adolescent victims of sexual abuse. In general, girls, adolescents with physical disabilities, a history of violence exposure, having been inebriated by alcohol, and a number of family risk factors were at a heightened risk of sexual abuse committed by either adults or someone of their own age. This was also true for adolescents who perceived themselves as more physically mature than their peers. All

Table 1
Descriptive statistics for the sample.

Variables	<i>n</i>	%
Sexual abuse		
No experience with sexual abuse	6352	68.0
Victimized by adults	543	6.0
Victimized by peers	2003	22.3
Victimized by adults and peers	342	3.7
Country background		
Nordic region	6705	74.1
Europe	802	8.9
Outside Europe	1535	17.0
Family finances		
Good	8779	96.2
Weak	348	3.8

Comment: "Missing values" varied from 44 (0.5 %) to 198 (2.1 %); n = number of participants.

Table 2

Multiple logistic regression for adjusted associations between risk factors and having been a victim of sexual abuse by adults, peers, and both adults and peers.

Risk factors	Victimized by an adult		Victimized by a peer		Victimized by adult and peer	
	OR	CI 95 %	OR	CI 95 %	OR	CI 95 %
Gender						
Girl	2.04***	1.64, 2.52	2.22***	1.97, 2.50	2.81***	2.11, 3.73
Non-binary	3.28**	1.42, 7.58	1.36	0.65, 2.81	3.91**	1.45, 10.6
Boy ^a						
Country background						
Europe	0.95	0.64, 1.42	0.54***	0.41, 0.70	0.81	0.51, 1.31
Outside Europe	0.70*	0.64, 1.00	0.47***	0.37, 0.59	0.50**	0.32, 0.78
Nordic region ^a						
Family finances						
Weak	1.06	0.72, 1.58	1.34*	1.01, 1.78	0.89	0.55, 1.45
Good ^a						
Disability						
Disability	1.35**	1.08, 1.67	1.24**	1.09, 1.42	1.39*	1.06, 1.81
No disability ^a						
Family relations						
Broken	1.22	0.98, 1.52	1.10	0.97, 1.25	1.17	0.90, 1.54
Not broken ^a						
Family risk						
High	1.70**	1.18, 2.46	1.52**	1.19, 1.93	1.48	0.94, 2.33
Uncertain	1.47*	1.07, 2.02	1.48***	1.22, 1.81	1.68**	1.16, 2.44
Low ^a						
Experience of violence						
1 occurrence	2.36***	1.81, 3.06	2.06***	1.79, 2.37	2.59***	1.86, 3.62
2	3.84***	2.86, 5.17	2.83***	2.36, 3.41	3.91***	2.69, 5.68
3	6.75***	4.80, 9.49	3.75***	2.90, 4.83	6.81***	4.48, 10.4
4	9.83***	5.73, 16.9	5.23***	3.19, 8.58	9.38***	4.93, 17.8
5	29.2***	10.8, 79.3	8.44***	2.82, 25.2	43.6***	15.2, 125
0 ^f						
Physical maturity						
More mature	1.54***	1.24, 1.91	1.58***	1.39, 1.79	1.66***	1.27, 2.16
Less mature ^a						
Inebriated by alcohol						
Never or once	2.23***	1.68, 2.97	3.51***	2.86, 4.30	3.04***	2.20, 4.19
Two times or more ^a						
Internet use						
High	1.24	0.97, 1.58	1.18*	1.01, 1.37	1.31	0.97, 1.77
Normal ^a						

Comment: “Missing variables” varied from 1313 (14.2 %) to 1417 (15.3 %); OR = odds ratio; CI = confidence interval; functional impairment = disability; No disab = no disability.

^a Reference groups.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

of these were in accordance with previous findings (Assink et al., 2019; Kaltiala-Heino et al., 2016; Noll et al., 2017; Stoltenborgh et al., 2015), highlighting the importance of being aware of the greater vulnerability of adolescents in these groups. In contrast, having been exposed to several types of violence (often referred to as polyvictimization) and having parents who originated outside of Europe increased the likelihood of abuse by adults, while alcohol use (twice or more) increased the likelihood of abuse by someone their own age.

Our research corroborates prior studies indicating that adolescents with parents born outside of the Nordic region face a lower risk of experiencing sexual abuse compared to their counterparts of Nordic descent, as highlighted by Mossige and Stefansen (2016). However, we found that when adolescents originating from outside Europe fall victim to sexual abuse, the perpetrator is more frequently an adult than a peer. This heightened risk can be attributed to the influence of collectivist norms prevalent in many non-European cultures, where parents exert greater control over the social lives of adolescents, in contrast to Western cultural norms (Shiraev & Levy, 2013, p. 193). The protective factor against sexual abuse by peers lies in the potential limitations imposed by collectivist cultures on adolescents' interactions with other children and young people during leisure time. By restricting contact with peers, these cultures may offer a shield against sexual abuse from within the same age group. However, it is important to note that this protective measure does not necessarily extend to limiting adolescents' interactions with adults. Unlike peer interactions, parental restrictions on adult interactions are less likely, rendering adolescents more susceptible to potential abuse by adults encountered in contexts such as school, organized activities, family gatherings, and other social circles involving adults. This again may place adolescents at an increased vulnerability to sexual abuse by adults within their extended social networks.

Another important finding was that adolescents who had experienced multiple forms of violence were at a significantly higher risk of being sexually abused, and the likelihood of victimization increased with the number of types of violence experienced. This finding supports well-established research showing that exposure to several types of violence often overlap, and that several previous instances of physical or psychological abuse are key risk factors for sexual abuse (Assink et al., 2019; Finkelhor et al., 2007). Assink et al. (2019) previously discussed how violence and abuse can have cascading effects on different levels of the system, leaving children and adolescents more susceptible to future victimization. When children and adolescents are subjected to sexual abuse, they may already be experiencing other forms of violence and neglect within their families. This can lead them to seek out destructive environments outside the family, which can further exacerbate their difficulties and increase the burden on their parents (Assink et al., 2019). If they are exposed to more harmful environments and lack protection from caregivers, they may become even more vulnerable to sexual abuse. Our finding that adolescents exposed to multiple types of violence are more at risk of sexual abuse by adults adds to the rich literature on the relationship between sexual abuse and polyvictimization. It is possible that adolescents who have experienced more violence are at a higher risk of being victimized by adults than peers due to their history of early sexual abuse.

Finally, one factor increased the risk of being sexually abused by someone their own age more than by an adult. Adolescents who reported having been inebriated by alcohol several times were more than twice as likely to become victims of sexual abuse and were more commonly victimized by peers than by adults. The correlation between alcohol inebriation and sexual abuse can be explained by several factors. The adolescents in the current sample were relatively young (i.e., 12 to 16 years old). Even though Scandinavian youth start drinking earlier than youth in many other countries, frequent drinking at this age is still uncommon (Bakken, 2022). It is possible that drinking at an early age may, at the group level, be associated with other vulnerabilities, such as mental health issues, academic difficulties, previous experiences of violence, or coming from disadvantaged households, all of these increasing the vulnerability of being subjected to sexual abuse (Assink et al., 2019; Carr et al., 2020). Also, when inebriated, adolescents may be more susceptible to situations in which sexual abuse may occur, as alcohol can impair their judgment and hinder their ability to perceive and respond to potentially risky or hazardous situations (Baltariu et al., 2023; Karlsson et al., 2022; Lees et al., 2020). Another key factor is the prevalence of alcohol consumption within peer groups, as adolescents tend to engage in drinking more frequently in the company of their peers than with adults. This increased association with peers during alcohol consumption creates an environment in which the risk of encountering situations that lead to sexual abuse is more pronounced. Moreover, the dynamics of peer relationships during adolescence often involve a mix of social pressures, a lack of experience, and a desire for acceptance (Tomova et al., 2021). In these situations, individuals may be more susceptible to coercive behavior from their peers, potentially leading to instances of sexual abuse. Furthermore, adolescents may be less likely to recognize or report instances of sexual abuse within peer settings due to concerns about social repercussions, fear of judgment, or a lack of understanding about healthy boundaries (Øverlien et al., 2020). This silence can perpetuate the cycle of abuse within peer relationships. In summary, the interplay of factors such as peer dynamics and the reluctance to report abuse may contribute to the higher likelihood of sexual abuse among adolescents who consume alcohol when in the company of their peers as opposed to adults.

4.1. Strengths and limitations

This study stands out as one of few to directly compare the risk factors linked to being sexually abused by an adult versus someone their own age. A unique aspect of this study is that the experience of sexual abuse was measured using the same questions about sexual abuse for those who were victimized by adults and those who were victimized by peers; this was done in the same sample. This made it possible to compare the risk factors in these groups. The size of the sample also made it possible to investigate possible moderating factors in the relationship between risk factors and vulnerability, which has provided important insights.

However, some limitations should be considered in the interpretation of the results. The analyses were cross-sectional, and no conclusions could be drawn about the causality of the associations between specific risk factors and having been a victim of sexual abuse. It is for example plausible to consider scenarios where, having experienced sexual abuse might contribute to increased alcohol use. Similarly, prolonged online engagement could potentially be a manifestation of the social isolation that arises as a consequence of experiencing abuse. Although the study had a large sample, some of the subgroups analyzed were rather small (e.g., the group with a combination of a non-binary gender identity and several violence exposures). Analyses of small groups can entail statistical uncertainty, and the odds ratio for these groups should therefore be interpreted with caution. Another limitation is that sexual abuse is operationalized as a categorical variable where the questions are weighted equally in the analyses, so that experiences with both smaller and more serious forms of sexual abuse qualify as having been a victim. This means that we cannot say anything about the significance of the severity of the abuse for the risk factors. As with several others of the variables in this study, using dichotomous and categorical operationalization imply a loss of granularity and nuance. Also, in this study we have not analyzed how differences in risk may be differentiated by more specific age groups within the 12–16 years range. This oversight may have neglected significant age-related differences.

Finally, the lack of significant interaction effects between risk factors and gender may be related to the fact that we chose a conservative strategy in the interaction analyses for which all risk variables were adjusted. The purpose of this was to adjust for confounding noise. However, adjusting for an excessive number of variables may have contributed to bias in the power estimates and the camouflaging of a real interaction effect.

4.2. Implications of the findings

This study has identified three distinctive risk factors that hold significance in the context of preventing child sexual abuse. First,

adolescents who also had other violence or abuse experiences had an increased risk of being subjected to adult-perpetrated sexual abuse. This can be useful information for community workers such as health care professionals, teachers, social workers and others working to support parents and families, indicating that possible sexual abuse should be investigated when children are reporting neglect or physical or verbal abuse. When children report instances of neglect, physical abuse, or verbal abuse, it is crucial to consider the possibility of concurrent adult-perpetrated sexual abuse. Furthermore, our findings revealed an association between having a parent born in a non-European country and an increased risk of adult-perpetrated sexual abuse. This information is particularly relevant for community workers working with minority groups. It underscores the importance of recognizing that, within the social circles of children and adolescents in these groups, the risk of sexual abuse is likelier to be linked to adults rather than peers. Consequently, community workers should be attuned to this specific risk factor when conducting assessments and interventions within minority communities, contributing to a more targeted and effective approach to safeguarding the well-being of vulnerable youth.

A final notable finding was that adolescents who reported that they had been drunk several times were at an elevated risk of experiencing sexual abuse within their peer group. This discovery underscores the importance of integrating preventive measures into school sexual education programs that specifically address the heightened risk of sexual transgressions during states of inebriation. In light of these findings, school-based sexual education programs can be tailored to include targeted information and interventions aimed at raising awareness among adolescents regarding their increased vulnerability to sexual abuse while under the influence of alcohol. By addressing this specific risk factor, educators and prevention programs can empower adolescents with the knowledge and skills needed to make informed decisions about alcohol consumption, thus reducing their susceptibility to sexual abuse in peer settings. This nuanced approach aligns with the broader goal of developing comprehensive strategies to safeguard the well-being of adolescents and contribute to a safer and healthier environment.

In essence, the outcomes of this study underscore a notable similarity in the risk factors associated with experiencing sexual abuse perpetrated by both adults and peers. This similarity implies that interventions tailored to children and adolescents within specific risk categories have the potential to mitigate the risk of abuse from both adult and peer perpetrators. Nevertheless, the existing literature emphasizes that the highest risk of children falling victim to sexual abuse does not solely stem from individual factors but rather from a culmination of various risk elements (Assink et al., 2019).

Therefore, the critical focus on preventive measures should center on identifying and supporting children and adolescents who are characterized by the presence of multiple risk factors. Targeting individuals who exhibit a convergence of these risk elements is pivotal in preventive strategies. By addressing multiple risk factors, interventions can more effectively shield vulnerable youth from the potential threats posed by both adult and peer perpetrators of sexual abuse. This nuanced approach aligns with the understanding that a comprehensive mitigation strategy requires a holistic consideration of the multiple factors contributing to the vulnerability of children and adolescents to sexual abuse.

Furthermore, our focus on adolescents aged 12–16 years, while providing valuable insights, may unintentionally overlook potential variations in risk factors associated with different age groups within this range. To address this limitation, we recommend that future studies consider age differentials more comprehensively. Exploring potential differences related to the ages of adolescents can unveil nuanced insights into the dynamics of sexual abuse risks and contribute to the development of tailored intervention strategies. By adopting a more refined approach that takes into account both the severity of assault and age-specific variations, future research can significantly enhance our understanding of the complex factors influencing sexual abuse among adolescents. Finally, as we transition into an increasingly digitized society, the landscapes in which sexual abuse occurs change. Emerging research indicates that peer abuse is potentially more widespread in online environments compared to offline ones (Manrai et al., 2021). Consequently, by excluding online abuse from our current study, we may have overlooked a crucial aspect of peer abuse. Subsequent research endeavors should prioritize exploring the online sphere and identifying risk factors associated with online sexual abuse.

5. Conclusions

According to this study, two adolescent groups displayed a higher risk of being sexually abused by adults compared to peers: adolescents with at least one parent born outside Europe and adolescents with multiple experiences of violence. On the other hand, adolescents having been inebriated by alcohol several times were more susceptible to being sexually abused by their peers than by adults. These findings can inform the development of preventive and treatment measures for children and adolescents who have experienced sexual abuse.

CRedit authorship contribution statement

Iris Linnea Schaathun: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Ian Revhaug Nenseth:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Kamilla Rognmo:** Writing – review & editing, Methodology, Formal analysis, Data curation. **Gertrud Sofie Hafstad:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Conceptualization.

Data availability

made available pending permission from the Regional ethics committee

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