

The prevalence of child sexual abuse among Slovak late adolescents

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Abstract

The present study aimed to assess the prevalence and characteristics of child sexual abuse (CSA) in a nationally-representative sample of Slovak late adolescents. Randomized cluster sampling plan was used to sample 2186 secondary school students in their final school year with mean age of 18.6 years ($SD = 0.7$ years). The study employed the Child Sexual Abuse Questionnaire (Mohler-Kuo et al., 2014) consisting of multiple behavior-specific questions. The prevalence of CSA was analyzed separately for three clusters of CSA and gender. The self-reported lifetime prevalence of at least one form of CSA was 47.3% among girls and 22.0% among boys. The prevalence of noncontact forms of CSA was 40.6% among girls and 17.7% among boys. CSA with physical contact without penetration was reported by 30.2% girls and 11.6% boys. The prevalence of CSA with penetration was 5.6% among girls and 1.3% among boys. More than half of CSA occurred between 16-18 year of age in all three CSA cluster types. The severity of abuse was positively associated with the acquaintance with the perpetrator. Roughly 43-56% disclosed the abuse to another person. The majority of disclosed CSA was revealed to peers and partners. Negligible proportion of CSA instances were reported to the police. The results show that CSA is a widespread and considerably covert phenomenon within the population of Slovak late adolescents. Prevention activities should consider broad spectrum of CSA forms in order to counteract tendencies to associate CSA only with unwanted sexual intercourse.

Keywords: child sexual abuse, prevalence, late adolescence, disclosure.

The prevalence of child sexual abuse among Slovak late adolescents

Child sexual abuse (CSA) is one of the most serious socio-pathological phenomena due to its widespread international prevalence (Barth et al., 2013; Finkelhor, 1994; Pereda et al., 2009; Sapp & Vandeven, 2005; Stoltenborgh et al., 2011) as well as because it is related to significantly higher risk of both short term and long-term negative consequences (Cutajar et al., 2010; Fergusson et al., 2008; Paolucci et al., 2001).

Society shall take all appropriate measures to protect children from all forms of violence and abuse, including sexual abuse (United Nations, 1989; 2011). The level of awareness regarding the prevalence of CSA in any particular country can influence the character and intensity of protective measures. In this regard, lack of research on the prevalence of violence against children is a crucial problem (Slovak national strategy, 2013) as it can lead to underestimation of the problem by relying solely on statistical data on cases reported to authorities.

Establishing accurate estimates of the occurrence of CSA is complicated. Extremely discrepant rates of CSA are reported in a number of empirical studies conducted in this field in different countries and populations over the past decades (de Tychey et al., 2015). In Finkelhor's (1994) study, prevalence rates from 21 countries ranged from 7 to 36 % among females and a 3 to 29 % among males. More recent meta-analysis indicated prevalence rates ranging from 8 to 31 % among females and from 3 to 17 % among males (Barth et al., 2013).

It is well established that methodological differences (especially different definitions of CSA, measurement issues, sample characteristics, or design of the survey) account for variance in rates of CSA across studies. Researchers identified several aspects in which definitions of CSA vary: cut-off age for childhood (varying from 15 to 17 years); whether or not a minimum age difference between victim and perpetrator is set (ranging from no restriction, to offenders aged at least 3–5 years older, to adults only), and the level of contact qualifying an incident as

CSA (ranging from penetrative acts only, through a broad spectrum of contact and noncontact forms of abuse) (Bolen & Scannapieco, 1999; Goldman & Padayachi, 2000; Stoltenborgh et al., 2011). Related to this issue, the number and specificity of questions asked in order to assess CSA may affect the outcomes; more questions might also cover more aspects of CSA, and thus lead to higher prevalence rates (Bolen & Scannapieco, 1999; Finkelhor, 1994; Goldman & Padayachi, 2000; Mathews & Collin-Vézina, 2017; Stoltenborgh et al., 2011). What is defined as abuse may differ from one person to another unless it is clarified. Thus, using behaviorally specific rather than general “label” questions can minimize the rate of false-negative and false-positive results from respondents’ subjective perception or interpretation (Cranera et al., 2015; Fricker et al., 2003; Mohler-Kuo et al., 2014). Lifetime CSA prevalence may vary considerably depending on the sampling techniques (random samples, convenience samples, clinic populations) as well as on the actual age of the respondents in a sample (Finkelhor, 1994; Goldman & Padayachi, 2000). While some surveys are made on young teens, because of high continuing victimization during the late teen years, assessments are most complete when conducted among the oldest youth (Finkelhor et al., 2014). Variations in rates can also be partly linked to the design of the survey (e.g. confidentiality guarantee as perceived by the respondents).

To date, there has been just a few studies in Slovakia which provide partial data on CSA prevalence (Fedor et al., 2011; Fico, 2013; Máthé, 2006; Slonad, 1999 In: Slovak national strategy for the protection of children against violence, 2013). None of them focused solely on CSA. Questions regarding CSA were just a small subgroup of questions (5-7) among many others enquiring about respondents’ experiences with various forms of violence during childhood (Fedor et al., 2011; Fico, 2013; Slonad, 1999 In: Slovak national strategy, 2013) or about sexual behavior of Slovak citizens (Máthé, 2006). Respondents of those surveys were children aged 14-16 years (Fico, 2013; Slonad, 1999 In: Slovak national strategy, 2013) or

children and adults aged 15–28 years (Fedor, et al. 2011) and 15–69 years (Máthé, 2006). Questions used in those surveys did not cover noncontact forms of CSA and mostly defined childhood only up to 15 years of age and perpetrator as an adult.

Considering that (1) within the Convention on the Rights of the Child (United Nations, 1989), the fundamental document for all policy documents related to the protection of children's rights, child is defined as every human being below the age of eighteen years; (2) substantial proportion of CSA victims do not reveal the abuse to anyone during childhood and among children who do disclose during childhood, delay of disclosure is common (London et al., 2007; McElvaney, 2015; Olafson & Lederman, 2006); (3) even the so-called 'less severe' non-contact types of CSA may have detrimental effects (Landolt et al., 2016; Paolucci et al., 2001), and (4) a significant percentage of CSA may be committed by individuals under the age of 18 (Ryan et al., 2012), our study purposed to cover several gaps which characterized previous surveys on CSA prevalence among Slovak population.

The present study aimed to assess the prevalence of, and characteristics and circumstances associated with, CSA in a nationally representative sample of late adolescents in Slovakia using the Child Sexual Abuse Questionnaire (CSAQ) (Mohler-Kuo et al., 2014) consisting of multiple behavior-specific questions which cover also noncontact forms of CSA. We consider late adolescence to be an appropriate time for undergoing survey focusing on CSA experiences. It is more probable that late adolescents (rather than young adolescents) understand survey questions properly and answer them responsibly. Also their memory retrieval can be most reliable at the given age given the fact that, although CSA can be well retained in memory, it may be vulnerable to 'normal' memory processes such as forgetting in later age (Goodman-Delahunty et al., 2017). As no representative study concerning CSA prevalence among Slovak population has been published in English language yet, our findings

will provide the most contemporary prevalence estimates useful for any prevalence meta-analyses.

Method

Participants

The present study was carried out between November 2nd, 2015 and January 27th, 2016 on a population of Slovak secondary school students in their final year (usually the 4th grade) with target modal age of 18 to 19 years. A randomized cluster sampling plan was employed. First, based on an index of all (public and private) secondary schools in Eastern part of Slovakia (195 schools, 474 final year classes, 11454 students), 120 classes (in 100 schools) were selected by random number generation. Having no legal obligation, 27 schools chose not to participate for various reasons.

Overall, 14 questionnaires were either lost due to technical problems or were deemed invalid and 5 students chose to withdraw from the study, resulting in a final sample size of $n = 2186$, representing 19.1% of the defined population. The sample comprised 874 (40%) boys and 1312 (60%) girls, having the mean age of 18.58 years ($SD = .72$). Since past nation-wide survey (Fico, 2013) has shown that Eastern and Western part of Slovakia are equivalent with respect to the prevalence of CSA, the current sample can be regarded representative of Slovak population. The sociodemographic characteristics of the sample can be seen in Table 1.

Table 1
Characteristics of participants

	<i>n</i>	% (95% <i>CI</i>)
Gender		
Male	874	40.0 (37.9, 42.1)
Female	1312	60.0 (57.9, 62.0)
Age		
17	17	0.8 (0.5, 1.2)
18	1122	51.4 (49.3, 53.4)
19	834	38.2 (36.2, 40.3)
20	191	8.8 (7.6, 10.0)
21+	18	0.8 (0.5, 1.3)
Residence		
Urban	1048	47.9 (45.8, 50.1)
Rural	1138	52.1 (49.9, 54.2)
School type		
High school (Gymnasium)	529	24.2 (22.4, 26.1)
Vocational	1656	75.8 (73.9, 77.5)
Mother's education		
Elementary school	87	4.0 (3.2, 5.0)
Secondary school	1678	77.8 (76.0, 79.5)
University	392	18.2 (16.6, 19.9)
Father's education		
Elementary school	48	2.2 (1.7, 3.0)
Secondary school	1777	83.5 (81.9, 85.1)
University	302	14.2 (12.7, 15.8)
Family structure		
Both biological parents	1896	86.7 (85.2, 88.1)
Other	289	13.2 (11.8, 14.7)
Number of siblings		
0	174	8.0 (6.9, 9.2)
1	942	43.1 (41.0, 45.2)
2+	1070	48.9 (46.8, 51.1)

Procedure

The study was approved by the Department of Education of the concerned Self-governing Region Authorities. The school managements were assured that the data collection procedure precludes the possibility to identify any individuals and their school affiliation. The questionnaires were administrated by trained research assistants who also got acquainted with

privacy and data protection issues. Within the informed consent, all the participants were briefed on the purpose of the study and confidentiality and were further informed about their right to withdraw from the study at any time without stating a reason. Moreover, it was emphasized that, by design, the time needed to finish the questionnaire is the same regardless whether the participant identifies herself as a victim of CSA or not. Participants who did not identify themselves as the victims of CSA were automatically given a questionnaire on CSA-related urban myths and deeply rooted beliefs (these data are not a part of the present study). Regarding the sitting arrangement of participants, each of them was having a free chair on both sides, which prevented the participants from seeing the content at each other's monitors. The computer-assisted administration of the questionnaire took place in a dedicated computer room of the given school, supervised by a research assistant and a teacher. Most participants finished the questionnaire within 40 minutes and at the end, they were provided contact information for organizations offering specialist support, counselling and further information about CSA-related issues.

Measures

The present study employed the Child Sexual Abuse Questionnaire (CSAQ) (Mohler-Kuo et al., 2014). CSAQ measures the prevalence of CSA in a comprehensive manner, covering 15 forms of child sexual abuse within three overarching clusters. (1) *CSA without physical contact* involved 8 yes/no items. For contact forms of abuse, there were 7 items with three response options, namely "No", "Yes, someone tried but did not succeed", and "Yes, someone tried and succeeded in doing so". These seven items (3 main items with any of the "Yes" responses, 4 shared items with "Yes, someone tried but did not succeed" responses) indicated the cluster (2) *CSA with physical contact without penetration*. (3) *CSA with physical contact with penetration* involved the above mentioned 4 shared items with "Yes, someone tried and succeeded in doing so" response. In case the participant endorsed any of the items, a question

targeting the frequency of the abuse immediately followed. After completing the CSAQ, the participant who identified herself as a victim of CSA (responding “Yes” to any of the items) was presented a follow-up set of items targeting various aspects of the abuse. If more than one form of abuse was reported, the participant was asked to focus on the one that she subjectively considers as the most severe.

Analysis

The prevalence of CSA was analyzed separately for the three given clusters of CSA and gender. As usual in prevalence studies, a rather large number of associations between the CSA rates and various sociodemographic characteristics can be tested. However, that leads to experiment-wise inflation of the *Type I* error and the α level needs to be adjusted for the number of hypothesis tests, considerably attenuating the statistical power especially when the hypothesis tests are being carried out on a smaller subset of the sample. Apart from that, classical frequentist approach of null hypothesis significance testing employing χ^2 tests or likelihood ratio tests cannot (without additional procedures like equivalence testing) provide formal support for the null hypothesis, posing, e.g., no difference in prevalence rates for different levels of a demographic variable. Last but not least, the associated *p*-values, when seen as evidence, tend to overestimate the evidence against the null hypothesis (Wagenmakers, 2007). As usual in high-powered studies, practically negligible effects may get statistically significant (due to very small standard errors), even though they are in fact more consistent with the null hypothesis.

Due to these reasons, prevalence studies frequently provide rather uninformative measures of evidence, e.g., $p < .001$ (sometimes given tiny effects), or non-significance – the failure to reject H_0 . Whether this failure is due to underpowered testing of real effect or genuine absence of a noteworthy effect remains usually unknown. These shortcomings can be tackled by using Bayesian methods. To assess the independence of the observed categorical variables,

the current study employed the Gunel-Dickey default Bayes factors for contingency tables with Poisson sampling plan – assuming all cell counts to be random and a uniform prior distribution according to which all possible values are equally probable (Gunel & Dickey, 1974; Jamil et al., 2016). Bayes factor (BF) is a continuous measure of evidence, defined as the ratio of two conditional probabilities tied to alternative (H_A) and null hypothesis (H_0), given the observed data. It represents the degree to which the data should shift our beliefs about the relative odds for these two competing hypotheses (Jeffreys, 1961). BF thus reflects the relative plausibility of a theory postulating the existence of an effect to the theory of null effect in terms of their predictive accuracy. The magnitude of these effect sizes was assessed by relative risk (risk ratio) calculated by unconditional maximum likelihood estimation (Wald) with the associated bootstrap confidence intervals (based on $1e6$ bootstrap replicates).

Prior to analyses, the data were screened for improbable values. No data transformations or imputation techniques were employed. All the following analyses were performed in *R* (version 3.2.3) The following *R* packages were employed: *epitools* (Aragón, 2012), *BayesFactor* (Morey & Rouder, 2015), *dplyr* (Wickham & Francois, 2016), *car* (Fox & Weisberg, 2011), and *stringr* (Wickham, 2015). All the analyses reported in this paper are meant to be fully reproducible. As a supplementary material, data can be found in an online repository here: <https://goo.gl/zbKAeu>. The complete *R* code documenting the entire analytic workflow is available here: <https://goo.gl/jQjY6c> (both links temporarily anonymized for the purposes of peer review).

Results

Prevalence of CSA

The self-reported lifetime prevalence of at least one form of child sexual abuse was 47.3% among girls and 22.0% among boys, with a corresponding relative risk of 2.2, i.e. compared to boys, girls are more than two times more likely to experience CSA. Almost

identical risk ratios were observed for the two non-penetrative clusters, with the following prevalence proportions: 40.6% among girls and 17.7% among boys for CSA without contact, and 30.2% among girls and 11.6% among boys for CSA with physical contact without penetration. The prevalence of CSA with penetration was 5.6% among girls and 1.3% among boys, with girls' risk to be sexually abused being 4.4 times the risk for boys. Overall, the data on the CSA prevalence as categorized within the three clusters provide overwhelming evidence for the strong association of CSA prevalence and gender. Here, the Bayes factors vastly exceeded the suggested (Jeffreys, 1961) level for claiming extreme evidence ($BF > 100$) by several orders of magnitude. However, when broken down by the specific forms of CSA, the following could be concluded:

(1) With regard to CSA without physical contact, the evidence for higher overall population difference in favor of girls were driven exclusively by two relatively most frequent abuse forms, i.e., “molested by someone verbally or by e-mail/message” and “sexual harassment via Internet” (with huge BF s of $2.2e34$ and $2.6e21$, respectively). Although the abuse forms “forced to show naked body” and “given intimate pictures against will” would have been statistically significant if tested for gender effect within the frequentist approach, the data were in fact insensitive (BF_{10} within the $1/3 - 3$ range). Regarding the other 4 non-contact abuse forms, the data provide rather strong evidence (BF_{01} ranging from 10.1 to 24.6, i.e., data under H_0 being 10-25 times more likely than under H_A) for the independence of their prevalence and gender.

(2) As for the CSA with physical contact without penetration, the most frequent sexual abuse form was “kissed or touched against will” ($> 3-4$ times more likely than any other non-penetrative contact CSA form). Given the associated BF s, there was good evidence for female being at greater risk of CSA in all of the respective forms.

(3) Concerning the CSA with penetration, there was compelling evidence for significantly higher prevalence in girls only for “forced oral intercourse”. With other CSA penetrative forms, despite slightly higher relative risks, the data did not allow for a robust formal inference, as is the case with any other prediction of low base-rate events. For CSA prevalence rates, relative risks, and Bayes factors, see Table 2.

Seventy-four percent of participants reporting CSA without contact were revictimized, with 36.0% being revictimized more than 5 times. For CSA with contact without penetration, 48.5% experienced the abuse more than once and 16.9% more than 5 times. Relatively high number of revictimization (54.8%) was found among participants reporting any penetrative form of CSA, 26.2% reported experiencing more than 5 instances of penetrative sexual abuse.

Table 2

Prevalence of CSA by gender and type of abuse

	Girls (n = 1312)		Boys (n = 874)		Relative risk ^a (95% CI)	Bayes Factor ^b
	n	% (95% CI)	n	% (95% CI)		
Any type of child sexual abuse	621	47.3 (44.6, 50.1)	192	22.0 (19.3, 24.9)	2.2 (1.9, 2.5)	BF10 = 3.3e31
Sexual abuse without physical contact	533	40.6 (38.0, 43.3)	155	17.7 (15.3, 20.4)	2.3 (2.0, 2.7)	BF10 = 9.1e27
Forced to witness sexual exposure	39	3.0 (2.1, 4.0)	17	1.9 (1.1, 3.1)	1.5 (0.9, 2.9)	BF01 = 10.1
Forced to show naked body	53	4.0 (3.0, 5.3)	17	1.9 (1.1, 3.1)	2.1 (1.3, 3.9)	BF10 = 1.7
Forced to watch people having sex	26	2.0 (1.3, 2.9)	10	1.1 (0.5, 2.1)	1.7 (0.9, 4.3)	BF01 = 12.4
Forced to watch pornographic material	49	3.7 (2.8, 4.9)	36	4.1 (2.9, 5.7)	0.9 (0.6, 1.4)	BF01 = 20.0
Pictures taken of nude body against will	36	2.7 (1.9, 3.8)	20	2.3 (1.4, 3.5)	1.2 (0.7, 2.2)	BF01 = 24.6
Given intimate pictures against will	46	3.5 (2.6, 4.6)	16	1.8 (1.0, 3.0)	1.9 (1.1, 3.7)	BF01 = 1.9
Molested by someone verbally or by e-mail/message	398	30.3 (27.9, 32.9)	74	8.5 (6.7, 10.5)	3.6 (2.9, 4.6)	BF10 = 2.2e34
Sexual harassment via Internet	359	27.4 (25.0, 29.9)	88	10.1 (8.2, 12.3)	2.7 (2.2, 3.4)	BF10 = 2.6e21
Sexual abuse with physical contact without penetration	396	30.2 (27.7, 32.7)	101	11.6 (9.5, 13.9)	2.6 (2.2, 3.2)	BF10 = 9.1e22
Kissed or touched against will	319	24.3 (22.0, 26.7)	81	9.3 (7.4, 11.4)	2.6 (2.1, 3.6)	BF10 = 2.5e17
Forced to kiss someone	87	6.6 (5.3, 8.1)	24	2.7 (1.8, 4.1)	2.4 (1.6, 4.0)	BF10 = 280
Forced penetration with finger or object; tried but not succeeded	77	5.9 (4.7, 7.3)	12	1.4 (0.7, 2.4)	4.3 (2.5, 9.1)	BF10 = 185783
Forced vaginal intercourse (girls only); tried but not succeeded	109	8.3 (6.9, 9.9)	0	0 (0, 0.4)	NA	NA
Forced anal intercourse; tried but not succeeded	64	4.9 (3.8, 6.2)	8	0.9 (0.4, 1.8)	5.3 (2.9, 14.7)	BF10 = 109202
Forced oral intercourse; tried but not succeeded	62	4.7 (3.6, 6.0)	10	1.1 (0.5, 2.1)	4.1 (2.3, 9.8)	BF10 = 5080
Forced into prostitution	54	4.1 (3.1, 5.3)	13	1.5 (0.8, 2.5)	2.8 (1.6, 5.8)	BF10 = 24.1
Sexual abuse with penetration	73	5.6 (4.4, 6.9)	11	1.3 (0.6, 2.2)	4.4 (2.6, 9.9)	BF10 = 117661
Forced penetration with finger or object	35	2.7 (1.9, 3.7)	9	1.0 (0.5, 1.9)	2.6 (1.3, 6.7)	BF10 = 1.2
Forced vaginal intercourse (girls only)	32	2.4 (1.7, 3.4)	0	0 (0, 0.4)	NA	NA
Forced anal intercourse	11	0.8 (0.4, 1.5)	0	0 (0, 0.4)	NA	BF10 = 1.0
Forced oral intercourse	34	2.6 (1.8, 3.6)	6	0.7 (0.3, 1.5)	3.8 (1.8, 13.0)	BF10 = 8.8

Note. ^a Boys as the reference group. ^bBF10 = Bayes factor in favor of the alternative hypothesis, H_a/H_0 . BF01 = Bayes factor in favor of the null hypothesis, H_0/H_a . NA = not applicable.

Characteristics of reported CSA

As can be seen in Table 3, more than half of the reported CSA occurred between 16-18 year of age in all three CSA cluster types. For CSA without physical contact and CSA with physical contact without penetration, most girls reported that the perpetrator was older than 18 years. For most of the CSA cluster types, relatively high number (18-37%) of participants

reported not knowing the age of the perpetrator. However, for penetrative CSA, the proportion of “don’t know” response by girls was 70% (only 15% of these perpetrators were strangers). The girls were abused almost exclusively by males. In boys, females accounted for 62% to 78% of CSA without contact and CSA with contact without penetration, respectively. With regard to the relationship with perpetrator, the severity of abuse was inversely related to the proportion of reporting stranger as the perpetrator and positively associated with roughly rising reported proportion of partner and acquaintance as perpetrators. A family member engaging into sexual abuse was uniformly reported by approximately 5-7% of abused participants (overall, the frequencies related to boys reporting penetrative CSA cannot be considered stable due to small *n*). Most of the CSA instances happened at home, at another house, and at public place, across all the CSA cluster types. Internet accounted for approximately 23-29% of non-contact CSA. Roughly 43-56% disclosed the abuse to another person. The relatively highest proportion of disclosure was among girls that experienced penetrative CSA. The majority of disclosed CSA was revealed to peers and partners. Only 7-18% of CSA was disclosed to parents. Negligible proportion of CSA instances were reported to the police.

Table 3

Characteristics of the reported CSA

	CSA without physical contact		CSA with physical contact without penetration		CSA with physical contact with penetration	
	Girls (n = 533)	Boys (n = 155)	Girls (n = 396)	Boys (n = 101)	Girls (n = 73)	Boys (n = 11)
Age of first CSA occurrence						
< 6	3.9 (2.5, 6.0)	11.0 (6.5, 17.0)	4.0 (2.3, 6.5)	11.9 (6.3, 19.8)	2.7 (0.3, 9.5)	9.1 (0.2, 41.2)
6 - 11	5.6 (3.8, 7.9)	3.2 (1.1, 7.4)	5.1 (3.1, 7.7)	5.0 (1.6, 11.2)	2.7 (0.3, 9.5)	9.1 (0.2, 41.2)
12 - 15	35.1 (31.0, 39.3)	31.6 (24.3, 39.6)	30.3 (25.8, 35.1)	21.8 (14.2, 31.1)	37.0 (26.0, 49.1)	9.1 (0.2, 41.2)
16 - 18	55.3 (51.0, 59.6)	54.2 (46.0, 62.2)	60.6 (55.6, 65.4)	61.4 (51.2, 70.9)	57.5 (45.4, 69.0)	72.7 (39.0, 94.0)
Age of perpetrator						
< 15	2.8 (1.6, 4.6)	3.2 (1.1, 7.4)	3.5 (2.0, 5.9)	3.0 (0.6, 8.4)	4.1 (0.9, 11.5)	0
15 - 18	14.4 (11.6, 17.7)	27.1 (20.3, 34.8)	21.0 (17.1, 25.3)	42.6 (32.8, 52.8)	2.7 (0.3, 9.5)	54.5 (23.4, 83.2)
> 18	58.7 (54.4, 62.9)	32.3 (25.0, 40.2)	57.3 (52.3, 62.3)	29.7 (21.0, 39.6)	23.3 (14.2, 34.6)	18.2 (22.8, 51.8)
Don't know	24.0 (20.4, 27.9)	37.4 (29.8, 45.5)	18.2 (14.5, 22.3)	24.8 (16.7, 34.3)	70.0 (58.0, 80.1)	27.2 (0.6, 61.0)
Sex of perpetrator						
Male	99.2 (98.1, 99.8)	38.1 (30.4, 46.2)	100 (99.1, 100)	21.8 (14.2, 31.1)	100 (95, 100)	0
Female	0.8 (0.2, 2.0)	61.9 (53.8, 69.6)	0	78.2 (68.9, 85.8)	0	100 (71.5, 100)
Relationship with perpetrator						
Family member	5.1 (3.4, 7.3)	7.1 (3.6, 12.3)	7.3 (5.0, 10.3)	6.9 (2.8, 13.8)	6.8 (2.3, 15.3)	18.2 (2.3, 51.8)
Partner	18.8 (15.5, 22.3)	20.0 (14.0, 27.1)	23.0 (18.9, 27.4)	30.7 (21.9, 40.7)	35.6 (24.7, 47.7)	54.5 (23.4, 83.2)
Acquaintance	26.6 (22.9, 30.6)	27.1 (20.3, 34.8)	39.1 (34.3, 44.1)	37.6 (28.2, 47.8)	42.5 (31.0, 54.6)	18.2 (2.3, 51.8)
Stranger	49.2 (44.8, 53.5)	45.8 (37.8, 54.0)	30.3 (25.8, 35.1)	24.8 (16.7, 34.3)	15.1 (7.8, 25.4)	9.1 (0.2, 41.2)
Place of CSA^a						
At home	20.6 (17.3, 24.3)	25.8 (19.1, 33.4)	26.8 (22.5, 31.4)	23.8 (15.9, 33.3)	34.2 (23.5, 46.3)	36.4 (10.9, 69.2)
At another house	21.6 (18.2, 25.3)	16.8 (11.3, 23.6)	27.2 (22.9, 31.9)	30.7 (21.9, 40.7)	42.5 (31.0, 54.6)	36.4 (10.9, 69.2)
Public place	29.1 (25.3, 33.1)	30.3 (23.2, 38.2)	36.4 (31.6, 41.3)	44.6 (34.7, 54.8)	31.5 (21.1, 43.4)	45.5 (16.7, 76.6)
School/on way to school	3.4 (2.0, 5.3)	11.0 (6.5, 17.0)	4.0 (2.3, 6.5)	9.9 (4.9, 17.5)	6.8 (2.3, 15.3)	36.4 (10.9, 69.2)
Internet	28.9 (25.1, 32.9)	22.6 (16.3, 30.0)	9.6 (6.9, 12.9)	2.0 (0.2, 7.0)	0	0
Other	7.5 (5.4, 10.1)	6.5 (3.1, 11.5)	10.4 (7.5, 13.8)	4.0 (1.1, 9.8)	9.6 (3.9, 18.8)	0
Disclosure						
Yes	43.0 (38.7, 47.3)	42.6 (34.7, 50.8)	47.5 (42.5, 52.5)	50.5 (40.4, 60.6)	56.2 (44.1, 67.8)	45.5 (16.7, 76.6)
To whom was CSA disclosed^a						
Parent	13.7 (10.9, 16.9)	5.8 (2.7, 10.7)	16.9 (13.3, 21.0)	6.9 (2.8, 13.8)	16.4 (8.8, 27.0)	18.2 (2.3, 51.8)
Other family member	7.9 (5.7, 10.5)	9.0 (5.0, 14.7)	9.1 (6.4, 12.4)	10.9 (5.6, 18.7)	6.8 (2.3, 15.3)	18.2 (2.3, 51.8)
Peer, partner	38.9 (34.7, 43.1)	34.2 (26.8, 42.2)	43.2 (38.2, 4.8)	40.6 (30.9, 50.8)	53.4 (41.4, 65.2)	36.4 (10.9, 69.2)
Other(s)	5.3 (3.5, 7.5)	6.5 (3.1, 11.5)	7.6 (5.2, 10.6)	7.9 (3.5, 15.0)	23.3 (14.2, 34.6)	9.1 (0.2, 41.2)
Police						
Yes	2.1 (1.0, 3.7)	2.5 (0.1, 6.5)	2.5 (1.2, 4.6)	0.1 (0.0, 5.4)	5.5 (1.5, 13.4)	9.1 (0.2, 41.2)

Note. ^a multiple responses allowed. In case of revictimization, participants were asked to provide characteristics of the subjectively most severe abuse.

Characteristics associated with CSA

The only characteristic that is uniformly strongly associated with the prevalence of CSA across all three cluster types of CSA was gender, as discussed above (see Table 4). With respect to residence, the data provide moderate-to-strong evidence for the hypothesis of no effect in all

cluster types. The *BFs* also generally strongly support the null effects of parent's education and number of siblings. Here, relatively high risk ratios for underrepresented population of parents with only elementary education were largely outweighed by overall moderate risk for participants having parents with secondary school (vocational or high school). Further on, there is highly convincing evidence for the association of school type and prevalence of non-contact CSA and contact CSA without penetration, with participants attending vocational schools being at greater risk. For penetrative CSA, the data support the null hypothesis with regard to the effect of school type. With regard to family structure, there was a convincing pattern with increased risk for other family structure compared to a family with two biological parents (*BFs* equal to 46 and 556 for non-contact and contact CSA without penetration, respectively). For penetrative CSA, given the low natural frequencies and a relative risk of 2.2, the probability of the data assuming the existence of an effect was 2.8 times higher than the probability of data given no effect of family structure on the prevalence of penetrative CSA.

Table 4

Characteristics of participants

	CSA without physical contact		CSA with physical contact without penetration		CSA with physical contact with penetration	
	Relative risk (95% CI)	Bayes ^a factor	Relative risk (95% CI)	Bayes ^a factor	Relative risk (95% CI)	Bayes ^a factor
Gender						
Male	1	BF10 =	1	BF10 =	1	BF10 =
Female	2.3 (1.9, 2.7)	9.1e27	2.6 (2.2, 3.2)	9.1e22	4.4 (2.6, 10.0)	117661
Residence						
Urban	1	BF01 =	1	BF01 =	1	BF01 =
Rural	1.0 (0.9, 1.2)	9.4	0.9 (0.8, 1.1)	4.8	0.9 (0.6, 1.3)	20.2
School type						
High school	1	BF10 =	1	BF10 =	1	BF01 =
Vocational	1.5 (1.2, 1.7)	4216.8	1.4 (1.2, 1.7)	27.3	1.6 (1.0, 3.2)	7.4
Mother's education						
University	1	BF01 =	1	BF01 =	1	BF01 =
Secondary school	1.1 (1.0, 1.4)	24.9	1.3 (1.0, 1.6)	2.7	1.2 (0.7, 2.4)	323.1
Elementary school	1.4 (1.0, 1.8)		1.8 (1.2, 2.5)		2.1 (0.6, 5.2)	
Father's education						
University	1	BF01 =	1	BF01 =	1	BF01 =
Secondary school	0.9 (0.8, 1.1)	33.6	0.9 (0.8, 1.2)	15.0	1.8 (1.0, 5.6)	510.9
Elementary school	1.2 (0.8, 1.7)		1.6 (1.0, 2.4)		0.9 (0.0, 4.2)	
Family structure						
Both biological parents	1	BF10 =	1	BF10 =	1	BF10 =
Other	1.4 (1.2, 1.6)	46.34	1.6 (1.3, 1.9)	556.3	2.2 (1.3, 3.4)	2.8
Siblings						
0	1	BF01 =	1	BF01 =	1	BF01 =
1	1.0 (0.9, 1.1)	115.3	1.0 (0.8, 1.4)	125.9	1.8 (0.8, 8.5)	23.7
2+	1.0 (0.8, 1.3)		1.0 (0.8, 1.4)		1.0 (0.5, 4.9)	

Note. ^aBF10 = Bayes factor in favor of the alternative hypothesis, *Ha/H0*. BF01 = Bayes factor in favor of the null hypothesis, *H0/Ha*.

Discussion

In the given sample of late adolescents, we found CSA to be relatively prevalent. Till reaching 18 years of age, 47.3% of girls and 22.0% of boys experienced at least one form of CSA. This high prevalence of CSA should be interpreted within the context of our wide definition of CSA, including a spectrum of CSA forms reflected in behaviorally specific questions (Cranera et al., 2015; Fricker et al., 2003), full period of childhood (Finkelhor et al., 2014) and no age limitations regarding perpetrators.

The most commonly reported form was CSA without physical contact (40.6% among

girls and 17.7% among boys). As internet accounted for approximately 23-29% of non-contact CSA, preventive programs should involve recommendations on online behavior. 30.2% of girls and 11.6% of boys reported CSA with physical contact without penetration and 5.6% of girls and 1.3% of boys admitted CSA with penetration. The high prevalence of seemingly less severe forms of CSA should not be trivialized. Even non-contact types of CSA may have negative consequences on victim's health and wellbeing (Landolt et al., 2016; Paolucci et al., 2001). Pérez-Fuentes et al. (2013) pointed out that the experience of abuse may be more important for the victim than the specific type of abuse, leading different types of abuse to generate similar stress; moreover, forms of abuse that may appear less severe can have serious consequences on adult mental health if they occur repeatedly. In this connection it is worth noting that the level of revictimization in our sample was highest in the non-contact cluster of CSA.

In line with past research (e.g. Fico, 2013; Mohler-Kuo et al., 2014; Pereda et al., 2009; Stoltenborgh et al., 2011) being female was a significant predictor of CSA. Another risk factor was not living with both biological parents (Berliner, 2011; Laaksonen et al., 2011). The fact that in our sample, participants attending vocational schools had a greater risk of experiencing non-contact CSA and contact CSA without penetration, calls for intensifying of CSA preventive activities within this type of schools.

Rising invasiveness of CSA is generally positively associated with the proportion of perpetrators being known to the victim. It is well known that widespread stereotypes about a dangerous stranger grossly relativize the risk of attack and harm caused by someone familiar. In fact, the sexual assault from a known person is not only more frequent but potentially more pervasive than attack committed by stranger because it involves element of betrayal, increases the likelihood of delayed detection and well as likelihood of unsupportive social reactions towards the victim (Freyd & Birrell, 2013).

The important finding coming from our research is that more than half of CSA occurred between 16-18 year of age in all three CSA cluster types. As also shown by previous research (Finkelhor et al., 2014), late adolescence represents a life-time with a significantly increased risk of sexual victimization. The impact of CSA is then amplified by the fact that with rising age, victims are at greater risk of facing victim-blaming attitudes (Back & Lips, 1998; Bottoms & Goodman, 1994; Davies & Rogers, 2009; Klettke & Mellor, 2017; Maynard & Wiederman, 1997; Rogers et al., 2007).

Our study also revealed that in approximately one third of all CSA cases, the perpetrator was the partner. Dating violence is a widespread phenomenon (Vagi et al., 2015; Wincentak et al., 2017) and this topic should be a part of sexual violence preventive programs focused on the population of adolescents (Lundgren & Amin, 2015).

In our study, on average, less than half of respondents victimized during childhood disclosed abuse to another person. Our findings are in line with previous research literature uncovering a high rate of nondisclosure (Finkelhor, 1994; London et al., 2007; McElvaney, 2015; Mohler-Kuo et al., 2014; Olafson & Lederman, 2006). Multiple reasons described in research literature (e.g. Collin-Vézina et al., 2015; Crisma et al., 2004; Wager, 2015), including self-blame, shame, lack of awareness of being abused, or fear of negative social reactions to disclosure, can play a role in the reluctance to disclose.

Consistent with previous studies (Fico, 2013; Mohler-Kuo et al., 2014; Priebe & Svedin, 2008) our findings also reveal that peers or partners are the most frequent recipients of victims' disclosure. This fact has important implications for preventive measures, as it emphasizes the importance of bystander-oriented prevention models applied mostly on high school and college-age population (Cook-Craig et al., 2014; Katz & Moore, 2013). Bystanders (as the carriers of community norms related to sexual violence) play a role not only in primary and secondary prevention, but they are also a crucial part of tertiary prevention as their quality of reaction to

victims' disclosure can either help or hinder the victims' recovery process (Banyard, 2015). Bystanders "can offer support and referral to resources or provide negative responses that silence victims and compound their distress" (Banyard, 2015). While a number of promising prevention programs that train bystanders exist abroad (Katz & Moore, 2013), implementation of such programs is still a challenge for Slovakia. The urgency of this challenge is even stronger in the light of previous Slovak study which found that friends are not only the most frequent recipients of victims' disclosure but at the same time they are those who most often doubt/question the victims (Fico, 2013).

The results also provide support for the widely held assumption and previous research findings (e.g. Mills et al., 2016; Mohler-Kuo et al., 2014; Priebe & Svedin, 2008; Stoltenborgh et al., 2011) that the vast majority of CSA cases go unreported to the authorities. Abusive dynamic, evidential difficulties, the risk of secondary victimization and other reasons can prevent majority of CSA victims from reporting to police. The fact that criminal justice system is largely limited in its response to sexual offences (McAlinden, 2007) raises questions whether efforts should be invested into reduction of its limitations or rather into promotion of restorative justice approach to these type of offenses (Marsh & Wager, 2015; Yantzi, 1998).

The present study adopted the Mohler-Kuo et al.'s (2014) behavior-specific items questionnaire, which covers a wide range of possible CSA types. Noncontact forms of CSA were largely ignored and contact and penetrative forms of CSA were inquired in a more superficial way in previous Slovak screening studies providing data on CSA prevalence. Because the adopted measure covered many types of behavior-specific manifestations of CSA, the data can be conveniently meta-analyzed because it is fully comparable with any other studies irrespective of how narrow or broad a definition those studies used, facilitating the cumulative character of the knowledge in the field.

Since the questionnaire was administered to respondents on the verge of adulthood, the

data can thus reflect the whole time-span of childhood until late adolescence. At the same time, the age of our respondents makes it reasonable to assume, that most of them are mature enough to be aware of the severity of the phenomenon surveyed and thus answered the survey in a more responsible manner.

Moreover, we have made every effort to eliminate the risk of social stigmatization of those who identified themselves as CSA victims in our survey. Considering that many victims would not wish to uncover their CSA related experiences to other schoolmates, we designed the questionnaire to be filled in by respondents online, offering them a different set of questions depending on whether they did or did not identify themselves as victims. The length of time needed to finish the questionnaire was designed to be invariant regardless whether the participant identified self as a CSA victim or not. We believe that higher level of privacy we provided to our respondents made them responding to the questionnaire more sincerely.

The current study also had certain limitations. While only 5 students chose to withdraw from the study, 27 schools chose not to participate for various reasons. We cannot rule out the possibility that CSA prevalence among students attending those schools is higher, as avoidance of this sensitive topic can contribute to an environment in which CSA thrives. Another limitation is that our sample did not involve students from special schools who are more vulnerable to sexual victimization than intact population (Berliner, 2011). Furthermore, as common with any victimological surveys based on self-reported retrospective recollection, there will always be some uncertainty about whether the reported experiences actually took place (Goldman & Padayachi, 2000), although it is widely accepted that denial of real CSA is a greater threat to validity than fabrication (Fergusson et al., 2000; Hardt & Rutter, 2004; Lyon, 2007). Mills et al. (2016) in their population-based birth cohort study found that a substantial proportion (nearly 40%) of victims whose exposure to CSA was officially reported and substantiated, failed to recall any CSA when asked in early adulthood (age 21). It is virtually

certain that some offenses will not be recalled e.g. because they could have occurred in early childhood before child's ability to encode memories developed, were not understood as abusive (Goodman-Delahunty et al., 2017), or will be consciously not disclosed because of discomfort or shame.

The present study showed that CSA is a relatively widespread and considerably covert phenomenon in the population of Slovak late adolescents. Prevention activities should consider broad spectrum of CSA forms in order to counteract tendencies to associate CSA solely with unwanted sexual intercourse. It is clear that vulnerability to sexual victimization continues to be present even in late adolescence. In this regard, the rights described in United Nations Convention on the Rights of the Child (United Nations, 1989) are in no way less relevant for adolescents than they are for younger children (Ruck et al., 2016). Negligible proportion of CSA instances reported to the police also emphasizes the importance of respecting *presumption of victim status* – principle according to which unless proven otherwise “a person should be considered to be a victim regardless of whether an offender is identified, apprehended, prosecuted or convicted” (Directive 2012/29/EU). This principle should be also stressed in prevention activities focusing on wide public as well as in educational activities intended for professional. Implementation of bystander-oriented prevention models could equip adolescents as well as adults to be more safe and active recipients of victims' disclosure.

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