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Sexual abuse and associations with psychosocial aspects of health.

A population based study with Swedish adolescents

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Abstract

Background: Few population-based Nordic studies with adolescents investigate the associations between sexual abuse (SA) and psychosocial health.

Aim: Associations between adolescents' self-reported experiences SA of different severity and aspects of psychosocial health such as emotional and behavioral problems, sense of coherence and self-esteem were investigated.

Methods: A school based study with 1,107 Swedish high school seniors was conducted. The students completed The Strengths and Difficulties Questionnaire (SDQ), The Sense of Coherence Scale (SOC) and I think I am and a self-report survey that included questions about SA, sociodemographic variables and family variables.

Results: SA was related to more emotional and behavioral problems, weaker sense of coherence and lower self-esteem when compared to non-abuse. There was also a dose response effect in so far as more severe abuse was related to poorer psychosocial health. When adjusted for sociodemographic and family-related variables, the associations between penetrating SA and most of the health variables weakened or disappeared. Sense of coherence was associated with penetrating SA even after adjustment.

Conclusions: This population-based study suggests that SA should not be regarded as an isolated factor in relation to psychosocial health as the associations at a group level may be smaller than expected. Among a number of covariates, family variables such as parental bonding showed to be especially important. Sense of coherence may be of special interest in further research and clinical treatment.

Key words: Adolescents, Psychosocial health, Self-report, Sense of coherence, Sexual abuse

Background

Relatively few population-based Nordic studies with adolescents deal with the associations between sexual abuse (SA) and psychosocial health (1 - 4). Previous Nordic studies have shown that adolescents exposed to sexual abuse generally report poorer psychosocial or mental health compared to non-abused young persons, for example higher frequency of suicide attempts or other acts of self-harm, sleep- and eating disorders, use of alcohol at an early age, use of illicit drugs, consensual coitarche before age 15 (1), or more anxiety and depression (2, 3). There is also evidence that more severe SA is associated with more psychosocial health problems compared to less severe SA (2, 3). It has been discussed if SA has a unique effect on adjustment or if sociodemographic and family factors explain more adjustment variance than SA (5 – 8). In a Danish study (2) the associations between SA and anxiety/depression remained significant when adjusted variables concerning individual characteristics, family, school and stressful life events. Also in a study from New Zealand were all associations between SA (included intercourse) and major depression, anxiety disorder, conduct disorder, alcohol abuse/dependence, other substance abuse/dependence and suicide attempt statistically significant even after adjusting for sociodemographic and family factors (9). SA has been shown to be stronger associated with increased risks of mental health problems than physical abuse (10).

Few Nordic studies deal with young persons' experience of SA in relation to other aspects of psychosocial health such as self-esteem and sense of coherence. Mossige and Stefansen (3) found that low self-esteem was related to severe SA, but not to less severe SA. To our knowledge, there are no previous studies with adolescents that deal with sense of coherence (SOC) (11) and SA. A strong SOC is expected to be related to successful coping with stressful situations. SOC has been shown to be strongly related to perceived health, especially mental health (12, 13). Research with adults showed that negative life events decreased the level of

SOC and that physical, psychological or sexual violence affected *SOC* the most (14). Women with a history of childhood sexual abuse had a weak *SOC* (15). Traumatic events experienced in childhood predicted *SOC* more strongly than if experienced in adulthood (16).

Aim

The aim of this study was to investigate associations between adolescents' self-reported experiences of sexual abuse of varying severity and aspects of psychosocial health such as emotional and behavioral problems, sense of coherence and self-esteem. The hypothesis was that the more severe the sexual abuse, the more psychosocial problems and the lower sense of coherence and self-esteem that the adolescents would report. It was also expected that these associations would remain even when adjusted for sociodemographic and family variables for both girls and boys.

Method

Participants

The study was based on Swedish data from the Baltic Sea Regional Study on Adolescent Sexuality. All high school seniors in the city of Malmö were included in the initial group. According to official statistics, 88% of 18 year olds resident in Malmö were enrolled in high school, 1% were studying in other education alternatives such as university and 11% were not studying (17). A total of 2,639 high school seniors were registered in 17 different national educational programs in Malmö. Only whole classes were selected, representing 50% of all students at each of the national educational programs. This resulted in a selection of 1,404 students (53% of the enrolled students), and 1,118 of them chose to participate in the study. Eleven questionnaires were excluded as being incompletely filled-in. The final number of

participants was 1,107 ($n = 575$ girls and $n = 532$ boys), resulting in a response rate of 78.9%. The mean age of the participants was 18.4 years ($SD = 0.8$).

Procedure

After permission was given by the director of education and the principal of each school, all students in the selected classes were asked for and gave consent to participate based on oral and written information. In order to ensure that the students could not influence each other, they completed the questionnaires at the same time in the classroom. The anonymous questionnaires were distributed in unmarked envelopes, sealed by the students, and collected by a research assistant. The students received oral and written information about where to get counselling if participation had caused feelings of distress.

Measures

A survey based on a Norwegian questionnaire (18) was used. Several questions came originally from other scales such as the Parental Bonding Instrument (19, 20) or other Nordic surveys (21 - 24). The survey included questions about background variables, sexual experience, sexual abuse experiences, own sexual abusive behavior, sexual attitudes, experiences of pornography and experiences of sexual exploitation (to sell sex for compensation). In the analyses for this paper, variables about background and sexual abuse experiences were used. Three additional questionnaires were used: The *Strengths and Difficulties Questionnaire*, The *Sense of Coherence Scale* and *I think I am*.

The assessment of sexual abuse

A wide definition of sexual abuse including lifetime prevalence by both adult and peer offenders was used. Three mutually exclusive categories based on the most severe abuse reported by the participant were used (25, 26). The participants were asked if they had been exposed to any of the following *against their will*: 1) non-contact abuse “somebody exposed him/herself indecently towards you,” 2) contact abuse “somebody has pawed you or touched

you body in an indecent way,” “you masturbated somebody else,” 3) penetrative abuse “you have had sexual intercourse”, “you have had oral sex,” “you have had anal sex.”

Measures of psychosocial health

The Strengths and Difficulties Questionnaire (SDQ). The *SDQ* is a brief behavioural screening questionnaire that is widely used both as a clinical instrument and in epidemiological research. See (27) for a more detailed description of the instrument. In this study, the total difficulties score and the four sub-scales that generate the total score were used. Higher values indicate more problems. Following the literature (28, 29), the cut-off for clinical range was set at the 90th percentile of each score. In this sample, Cronbach’s alpha was .74 for the total difficulties score and ranged between .51 and .70 for the sub-scales.

The Sense of Coherence Scale (SOC) was developed by Antonovsky (11) and has been used in a number of previous studies (30). The version used in this study consists of 29 items and each of them can be rated on a 7-graded scale. A total score based on all items is calculated and ranges between 29 and 203. High values indicate a strong *SOC*. Antonovsky suggested that scores can be collapsed into quintiles or tertiles (31). In this study, weak *SOC* was defined as values in the lowest tertile. Cronbach’s alpha was .85.

I think I am is a widely used self report questionnaire designed to investigate young persons’ self-esteem (32). The adolescent version consists of 72 items. Five sub-scales (Physical Characteristics, Skills and Talents, Psychological Well-being, Relations to the Family, Relations to Others) were used as well as a Global score of self-esteem. Higher scores indicate better perceived self-esteem. The values in each scale were dichotomized and values ≤ 1 SD below the mean were defined as corresponding to low self-esteem. Cronbach’s alpha for the Global score was .92 and between .70 and .89 for the sub-scales.

Confounding factors

To assess the extent to which associations between sexual abuse and psychosocial health could be explained by the effects of confounders, covariate variables measuring socio-demographic factors, family structure and parental bonding were chosen. The measures were selected on the basis of having been found to be related with sexual abuse or psychosocial health factors in the present study or in our previous studies (27, 33). The variables were:

Educational program was categorized as either academic or vocational.

Immigrant background. Participants who had immigrated to Sweden from another country or who had one or both parents who had immigrated were categorized as having immigrant background.

Parents' employment status was categorized as either "both parents employed" or "at least one parent not employed" at the time for data collection.

Family structure was categorized as either living together with both parents or not.

The Parental Bonding Instrument (19, 20) measures two fundamental parenting dimensions, care and overprotection, as perceived by the respondent when growing up. Nine out of 25 items were included in this study. See (27) for a more detailed description. High values indicate high care and high overprotection, respectively. Cronbach's alpha was .71 for the care dimension and .74 for the overprotection dimension. Cut off values were ≤ 20 for the care score (at the 25th percentile) and ≥ 16 for the overprotection score (at the 80th percentile).

Ethical considerations

The study was approved by the Regional Ethics Review Board in Lund, Sweden, Diary number LU 938-02.

Statistics

The statistical program SPSS (Statistical Package for the Social Sciences, version 15.0) was used in the calculations. The results are presented in terms of means, standard deviations (SD), and percent. Differences in means were analysed using the independent-samples t-test.

The magnitude of differences in means was estimated by calculating effect size. Correlations between variables were analysed using Pearson product-moment correlations. Analysis of internal consistency was obtained with Cronbach's alpha. Associations between variables were also presented as Odds Ratios (*OR*) with 95% confidence intervals (*CI*). Logistic regression was carried out and in order to dichotomize the dependant variables, cut off scores were used.

Results

Sexual abuse rates and abuse characteristics

Of the total sample (575 girls and 532 boys), 67% of the girls ($n = 383$) and 27% of the boys ($n = 145$) reported some form of sexual abuse experience. Based on the most severe kind of SA reported, non-contact abuse was reported by 10% ($n = 58$) of the girls and 5% ($n = 26$) of the boys, contact abuse by 43% ($n = 247$) of the girls and 14% ($n = 76$) of the boys and penetrating abuse by 14% ($n = 78$) of the girls and 8% ($n = 43$) of the boys.

The mean age at the time of the first abuse occasion was 14.0 ($SD = 3.1$) for girls and 14.7 ($SD = 3.2$) for boys. The perpetrator on the first abuse occasion was a member of the family or a relative for 5% of the girls and 2.1% of the boys, a friend or acquaintance for 35.6% of the girls and 41.2% of the boys and a stranger for 59.4% of the girls and 56.7% of the boys. The perpetrator on the first abuse occasion was at least five years older for 50% of the girls and 38% of the boys while the age difference was less than five years for 50% of the girls and 62% of the boys. Relatively many of those who had reported experiences of sexual abuse did not answer the follow-up questions about age at the time of the first abuse occasion, relation to the perpetrator or age difference victim-perpetrator (missing ranged between 11% and 26% for girls and between 33% and 37% for boys). Because of that, the results concerning abuse

characteristics have to be regarded with caution and were not included in the following analyses.

Univariate analyses

The *SDQ total score* was negatively correlated with *SOC* (girls: $r = -.62, p \leq .01$; boys: $r = -.65, p \leq .01$) and *I think I am Global score* (girls: $r = -.663, p \leq .01$; boys: $r = -.668, p \leq .01$).

The correlations for *SOC* and *I think I am Global score* was $r = .74 (p \leq .01)$ for girls and $r = .74 (p \leq .01)$ for boys.

Insert table 1a about here

Non-contact abuse was not associated with poorer psychosocial health when compared to non-abuse with the exception of *SDQ* subscale Peer problems for girls, Table 1 a,b. More severe sexual abuse experiences were related to more emotional and behavioral problems, a weaker sense of coherence and lower self-esteem when compared to non-abuse, Table 1 a, b. When contact abuse was compared with non-abuse, differences in means were significant in two out of three total scales and three out of nine subscales for girls and all total scales and six subscales for boys. Effect sizes were weak for girls (range 0.20 – 0.29) and weak to moderate for boys (range 0.31 to 0.47). When penetrating abuse was compared to non-abuse, differences in means were significant in all total scales and six subscales for girls and two total scales and five subscales for boys. Effect sizes were moderate for girls and moderate to high for boys.

Insert table 1b about here

Multivariate analyses

In order to assess the potential impact of confounding factors, logistic regression analyses were carried out that adjusted the associations between experience of sexual abuse and psychosocial health factors. As the unadjusted associations were most evident for non-abused adolescents compared to those who reported experiences of penetrating abuse, only these two groups were included in the multivariate analyses.

Insert table 2 about here

Girls and boys who reported penetrating abuse had significantly more often clinical values in the *SDQ* total score all *SDQ* sub-scales (with the exception of peer problems for girls) compared to non-abused girls and boys when the scores were unadjusted for covariates, Table 2.

After adjustment for socio-demographic and family factors, girls reporting penetrating abuse were not more likely to receive clinical values than were non-abused girls in all *SDQ*-scales with the exception of Hyperactivity. After adjustment boys reporting penetrating sexual abuse were more likely than non-abused boys to get clinical values in the *SDQ* total score and in two out of four subscores: emotional symptoms and conduct problems. The odds that boys who reported penetrating abuse received clinical values in the *SDQ* score more often than non-abused boys decreased from more than seven without adjustment to almost five after adjustment. The most important covariate seemed to be parental bonding. For example, girls who perceived their parents as non-caring and overprotective when growing up had a more than fourfold odds of receiving clinical values in the *SDQ* total score compared to girls who had perceived their parents as caring and not overprotective ($OR = 4.31$, $CI = 1.5-12.3$).

After adjustment, girls reporting penetrating abuse had almost fourfold odds and boys more than twofold odds of having a weak *SOC* compared to non-abused adolescents, Table 2. Girls reporting penetrating abuse had more than twofold odds of having low total scores in *I think I am* and more than threefold odds of receiving low values in the subscale Psychological Wellbeing compared to non-abused girls. Boys reporting penetrating abuse had threefold odds of having low scores in the subscale Relations to Others compared to non-abused boys. Again, parental bonding was a significant covariate in most of these analyses.

Discussion

There has been a lack of Swedish studies concerning the associations between sexual abuse and psychosocial health. The main finding of the present study is that contact and penetrating abuse were related to more emotional and behavioral problems, weaker sense of coherence and lower self-esteem when compared to non-abuse, but family-related and sociodemographic variables seem to be important confounders that decrease the degree of the associations.

Associations between sexual abuse and psychosocial health. There was a dose response effect in so far as more severe abuse, especially penetrating SA, was related to poorer psychosocial health. These findings are in line with previous research (1 - 4, 9).

When adjusted for family-related and sociodemographic variables, the associations between penetrating SA and most of the health variables weakened or disappeared although there was still a consistent tendency that might have been stronger in a larger sample. Larsen and Helweg-Larsen (2) found that SA remained significantly associated with anxiety/depression even after adjustment, but the *Odds ratio* was only 1.2 (*CI* = 1.1-1.3) for girls and 1.1 (*CI* = 1.1-1.2) for boys. Fergusson, Horwood and Lynskey (9) found in a birth cohort study that SA involving intercourse at age 18 was associated with increased risk of

psychiatric disorder even after adjustment. Approximately 10% to 20% of the risk of psychiatric disorder in young persons at age 18 was accounted for by exposure to SA in that study. Differences between our results and results from the above named studies may depend on the use of different measures and confounding variables. Nevertheless, a common finding from these population-based studies is that, at group level, the associations between SA and outcomes of mental and psychosocial health may not be as large as expected. We agree with Fergusson, Horwood and Lynskey (9) that SA cannot be regarded as an isolated risk factor but that it has to be seen in a context of a large number of adverse childhood factors which individually make relatively small contributions to the risk of disorder but which in combination may have a large impact on individual adjustment.

Sense of coherence has not been examined before in relation to young persons exposed to SA. After adjustment, sense of coherence remained clearly associated with penetrating abuse. Antonovsky (11) considered that a person has developed a relatively stable sense of coherence first at about 30 years of age. It is of interest to further investigate how the development of sense of coherence may be affected by SA and how psychological treatment of children and adolescents exposed to SA may change their sense of coherence. Lundqvist (34) showed that *SOC* had increased after treatment in a clinical sample with women exposed to SA, even if the scores at a group level still were lower than the scores of the control group.

Parental bonding was identified as the most important covariate in our study. Fergusson, Lynskey and Horwood (25) found that parental attachment and paternal overprotection were related to reported SA at age 18. It could be argued that this association can be explained by intrafamilial SA which probably is associated with insufficient parental bonding, but in our sample the number of those who reported intrafamilial SA was low. It seems to be more likely that dysfunctional family relations in general are related to both increased vulnerability for SA and increased psychosocial health problems.

Gender aspects. Our findings suggest that sense of coherence is clearly associated with SA for both girls and boys. Exposure to penetrating sexual abuse seems to be stronger related to low self esteem for girls than for boys. On the other hand, the associations between penetrating sexual abuse and general symptoms and especially behavioral problems seem to be stronger for boys than for girls. Findings from other research are inconsistent (4, 10, 35).

Methodological considerations

As the study is cross-sectional, it is not possible to determine causal relationships and to know whether poorer psychosocial health is a direct result of sexual abuse. Some young persons exposed to sexual abuse may have had poorer psychosocial health already before the sexual abuse and this may have increased their vulnerability to abuse. The study also shows that there are confounding variables associated with sexual abuse or psychosocial health and there are probably other variables not controlled for in the study.

Although it can be expected that abuse characteristics such as the relationship to the perpetrator or the frequency of the sexual abuse have an impact on the associations between sexual abuse and psychosocial health it was not possible to include these variables in the analyses. In addition, other kinds of victimization such as physical or emotional abuse or other stressful life events were not assessed. Bonomi, Cannon, Anderson, Rivara and Thompson (36) showed stronger associations between health aspects such as depression and physical symptoms for women with a history of both physical and sexual abuse during childhood compared with women reporting physical abuse only or sexual abuse only.

In a school based study like this there may be a sample bias. Twelve percent of the 18 year olds in Malmö were not enrolled in high school and of the adolescents in the selected sample 23% did not participate in the study, because of for example illness, practical occupational experiences, truancy or the choice not to participate. It is possible that the prevalence of sexual abuse is higher and psychosocial health poorer among non-participants.

Finally, there is a general validity problem that can arise in a retrospective study based only on self-report (37). In Fergusson, Horwood and Woodward's (38) birth cohort study, questions about sexual abuse were asked at age 18 and again at age 21. The analyses suggested that those not abused did not make false positive reports while those who were abused provided unreliable reports in which the probability of a false negative response was in the region of 50% (38).

Conclusions

This population-based study suggests that sexual abuse should not be regarded as an isolated factor in relation to psychosocial health as the associations at a group level may be smaller than expected. Among a number of covariates, family variables such as parental bonding were found to be especially important for young persons. Sense of coherence is clearly related to SA and may be of special interest in further research and clinical treatment.

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Disclosure of interest

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Table 1a. Means and standard deviations of *Strengths and Difficulties Questionnaire* for non-abuse and abuse of diverse severity. T-test and Cohen's d for outcome in comparison with non-abused group.

	Girls				Boys			
	No abuse (reference category) <i>n</i> =190 Mean (SD)	Non-contact abuse <i>n</i> =58 Mean (SD) <i>t(df)</i> <i>p, d</i>	Contact abuse <i>n</i> =246-247 Mean (SD) <i>t(df)</i> <i>p, d</i>	Penetrating abuse <i>n</i> =78 Mean (SD) <i>t(df)</i> <i>p, d</i>	No abuse (reference category) <i>n</i> =382 Mean (SD)	Non-contact abuse <i>n</i> =26 Mean (SD) <i>t(df)</i> <i>p, d</i>	Contact abuse <i>n</i> =73 Mean (SD) <i>t(df)</i> <i>p, d</i>	Penetrating abuse <i>n</i> =40 Mean (SD) <i>t(df)</i> <i>p, d</i>
SDQ-total	10.86 (4.93)	11.17 (4.56) ns	11.82 (4.82) <i>t</i> (434) = -2.04 <i>p</i> = .042 <i>d</i> = 0.20	13.72 (5.37) <i>t</i> (266) = -4.20 <i>p</i> < .001 <i>d</i> = 0.55	10.02 (5.01)	11.50 (5.75) ns	12.45 (5.43) <i>t</i> (453) = -3.75 <i>p</i> < .001 <i>d</i> = 0.47	14.45 (6.68) <i>t</i> (44) = -4.08 <i>p</i> < .001 <i>d</i> = 0.83
SDQ Emotional Symptoms	3.72 (2.35)	3.79 (2.39) ns	3.96 (2.49) ns	4.90 (2.54) <i>t</i> (266) = -3.64 <i>p</i> < .001 <i>d</i> = 0.48	2.38 (1.91)	2.77 (1.99) ns	3.19 (2.15) <i>t</i> (453) = -3.27 <i>p</i> = .001 <i>d</i> = 0.41	3.38 (2.59) <i>t</i> (44) = -2.37 <i>p</i> = .022 <i>d</i> = 0.50
SDQ Conduct problems	1.55 (1.40)	1.86 (1.63) ns	1.85 (1.39) <i>t</i> (435) = -2.28 <i>p</i> = .023 <i>d</i> = 0.21	2.14 (1.58) <i>t</i> (266) = -3.04 <i>p</i> = .003 <i>d</i> = 0.40	1.88 (1.60)	1.85 (1.59) ns	2.38 (1.76) <i>t</i> (453) = -2.42 <i>p</i> = .016 <i>d</i> = 0.31	3.15 (2.17) <i>t</i> (44) = -3.61 <i>p</i> = .001 <i>d</i> = 0.75
SDQ Hyperactivity	3.83 (2.14)	4.16 (2.40) ns	4.30 (2.16) <i>t</i> (435) = -2.30 <i>p</i> = .022 <i>d</i> = 0.22	4.76 (2.41) <i>t</i> (266) = -3.11 <i>p</i> = .002 <i>d</i> = 0.41	3.95 (2.26)	4.65 (2.21) ns	4.84 (2.17) <i>t</i> (453) = -3.10 <i>p</i> = .002 <i>d</i> = 0.39	5.35 (2.41) <i>t</i> (420) = -3.71 <i>p</i> < .001 <i>d</i> = 0.61
SDQ Peer Problems	1.76 (1.60)	1.36 (1.04) <i>t</i> (147) = 2.24 <i>p</i> = .027 <i>d</i> = 0.27	1.70 (1.48) ns	1.92 (1.66) ns	1.82 (1.62)	2.23 (2.10) ns	2.04 (1.73) ns	2.58 (2.06) <i>t</i> (44) = -2.25 <i>p</i> = .029 <i>d</i> = 0.45

Table 1b. Means and standard deviations of *Sense of Coherence Scale* and *I think I am* for non-abuse and abuse of diverse severity. T-test and Cohen's d for outcome in comparison with non-abused group.

	Girls				Boys			
	No abuse (reference category) <i>n</i> =178-188 Mean (SD)	Non-contact abuse <i>n</i> =55-57 Mean (SD) <i>t(df)</i> <i>p, d</i>	Contact abuse <i>n</i> =232-240 Mean (SD) <i>t(df)</i> <i>p, d</i>	Penetrating abuse <i>n</i> =71-77 Mean (SD) <i>t(df)</i> <i>p, d</i>	No abuse (reference category) <i>n</i> =350-361 Mean (SD)	Non-contact abuse <i>n</i> =25-26 Mean (SD) <i>t(df)</i> <i>p, d</i>	Contact abuse <i>n</i> =73-74 Mean (SD) <i>t(df)</i> <i>p, d</i>	Penetrating abuse <i>n</i> =29-39 Mean (SD) <i>t(df)</i> <i>p, d</i>
SOC	134.88 (20.75)	132.89 (19.21) ns	128.75 (20.61) <i>t</i> (420) = 2.78 <i>p</i> = .006 <i>d</i> = 0.29	119.29 (23.56) <i>t</i> (257) = 5.14 <i>p</i> < .001 <i>d</i> = 0.69	134.03 (20.03)	133.38 (20.73) ns	125.44 (20.58) <i>t</i> (431) = 3.33 <i>p</i> = .001 <i>d</i> = 0.42	122.87 (19.14) <i>t</i> (397) = 3.32 <i>p</i> = .001 <i>d</i> = 0.55
<i>I think I am</i> Global score	68.80 (33.32)	64.44 (32.78) ns	62.32 (33.36) ns	48.62 (36.19) <i>t</i> (247) = 4.21 <i>p</i> < .001 <i>d</i> = 0.57	68.85 (32.90)	69.00 (24.82) ns	54.97 (34.29) <i>t</i> (421) = 3.25 <i>p</i> = .001 <i>d</i> = 0.41	59.21 (40.19) ns
<i>I think I am</i> Physical Characterist.	13.13 (8.66)	12.09 (9.21) ns	11.67 (7.71) ns	9.57 (9.08) <i>t</i> (259) = 2.96 <i>p</i> = .003 <i>d</i> = 0.40	15.12 (7.58)	15.15 (6.94) ns	12.59 (8.29) <i>t</i> (431) = 2.56 <i>p</i> = .011 <i>d</i> = 0.33	13.00 (8.80) ns
<i>I think I am</i> Skills and Talents	10.85 (8.27)	10.75 (7.75) ns	10.61 (7.97) ns	8.95 (7.83) ns	10.46 (7.90)	10.92 (7.29) ns	9.38 (6.77) ns	7.86 (7.59) ns
<i>I think I am</i> Psychological Well-being	12.69 (9.61)	11.56 (9.87) ns	10.62 (9.95) <i>t</i> (420) = 2.15 <i>p</i> = .032 <i>d</i> = 0.21	5.66 (11.96) <i>t</i> (254) = 4.93 <i>p</i> < .001 <i>d</i> = 0.65	14.59 (9.33)	15.19 (8.07) ns	10.45 (11.11) <i>t</i> (429) = 3.36 <i>p</i> = .001 <i>d</i> = 0.42	10.50 (11.11) <i>t</i> (391) = 2.46 <i>p</i> = .014 <i>d</i> = 0.43
<i>I think I am</i> Relations to the Family	17.37 (9.79)	16.21 (9.95) ns	15.41 (11.52) ns	12.79 (12.83) <i>t</i> (110) = 2.79 <i>p</i> = .006 <i>d</i> = 0.42	15.37 (9.71)	16.20 (8.75) ns	10.90 (11.31) <i>t</i> (428) = 3.49 <i>p</i> = .001 <i>d</i> = 0.44	12.20 (10.69) ns
<i>I think I am</i> Relations to Others	13.63 (7.59)	14.00 (6.23) ns	13.55 (7.12) ns	12.52 (6.51) ns	13.27 (7.29)	13.46 (5.91) ns	11.75 (6.71) ns	9.79 (11.32) ns

Table 2. Percent of non-abused adolescents and adolescents exposed to penetrating SA who reported clinical values in *SDQ*, weak *SOC* and low values in *I think I am*, crude and adjusted *OR* for penetrating sexual abuse and statistically significant covariates for each outcome ($n = 267$ girls, 414 boys).

Dependent variable	No sexual abuse (% yes)	Penetrating abuse (% yes)	cOR (CI)	adjOR (CI)	Significant covariates ($p < .05$)
Girls					
SDQ total (> 90 perc)	7.9	20.5	3.01 (1.4-6.5)	2.23 (0.9-5.4) ^a	5
SDQ emotions (> 90 perc)	14.7	29.5	2.42 (1.3-4.6)	1.88 (0.9-3.9) ^a	2, 5
SDQ conduct (> 90 perc)	8.9	19.2	2.42 (1.1-5.1)	2.28 (1.0-5.3) ^a	-
SDQ hyperactivity (> 90 perc)	11.1	26.9	2.97 (1.5-5.8)	2.27 (1.1-4.7)	-
SDQ peer problems (> 90 perc)	14.2	19.2	1.44 (0.7-2.9) ^a	1.26 (0.6-2.7) ^a	-
Weak SOC	19.8	46.8	3.56 (2.0-6.3)	3.70 (1.9-7.3)	5
I think I am total (low)	12.4	29.6	2.98 (1.5-5.9)	2.41 (1.1-5.5)	5
I think I am Physical characteristics (low)	18.8	28.0	1.68 (0.9-3.1) ^a	1.24 (0.6-2.6) ^a	2, 5
I think I am Skills and talents (low)	13.8	17.6	1.33 (0.6-2.8) ^a	1.13 (0.5-2.6) ^a	5
I think I am Psychologic. wellbeing (low)	14.3	39.2	3.87 (2.1-7.2)	3.23 (1.6-6.7)	5
I think I am Relations to the family (low)	11.8	25.3	2.53 (1.3-5.0)	1.90 (0.7-5.0) ^a	4, 5
I think I am Relations to others (low)	15.6	16.0	1.03 (0.5-2.2) ^a	.88 (0.4-2.0) ^a	5
Boys					
SDQ total (> 90 perc)	6.8	35.0	7.37 (3.4-15.8)	4.78 (2.1-11.1)	1, 5
SDQ emotions (> 90 perc)	3.4	15.0	5.01 (1.8-14.0)	5.20 (1.6-16.8)	-
SDQ conduct (> 90 perc)	14.4	37.5	3.57 (1.8-7.2)	2.18 (1.0-4.7)	1, 5
SDQ hyperactivity (> 90 perc)	14.4	30.0	2.55 (1.2-5.3)	2.04 (0.9-4.5) ^a	5
SDQ peer problems (> 90 perc)	14.7	27.5	2.21 (1.0-4.7)	1.49 (0.7-3.4) ^a	5
Weak SOC	18.1	46.2	3.89 (2.0-7.7)	2.50 (1.2-5.4)	5
I think I am total (low)	13.1	34.5	3.48 (1.5-8.0)	2.07 (0.8-5.5) ^a	5
I think I am Physical characteristics (low)	11.9	14.3	1.23 (0.5-3.3) ^a	.91 (0.3-2.6) ^a	5
I think I am Skills and talents (low)	17.2	24.3	1.55 (0.7-3.5) ^a	1.06 (0.5-2.5) ^a	1
I think I am Psychologic. wellbeing (low)	12.3	27.8	2.74 (1.2-6.1)	1.35 (0.6-3.3) ^a	5
I think I am Relations to the family (low)	13.7	31.4	2.88 (1.3-6.3)	1.42 (0.5-3.9) ^a	4, 5
I think I am Relations to others (low)	16.7	42.4	3.67 (1.7-7.7)	2.98 (1.3-6.7)	5

Note: Logistic regression. Dependent variables: SDQ (total score, emotional symptoms, conduct problems, hyperactivity, peer problems), SOC, I think I am (total, physical characteristics, skills and talents, psychological well-being, relations to the family, relations to others). Independent variable: sexual abuse (no abuse, penetrating abuse). Covariates: 1. educational program (academic, vocational), 2. immigrant background (no, yes), 3. both parents employed (yes, no), 4. living with both parents (yes, no), 5. parental bonding (high care/low overprotection, high care/high overprotection, low care/low overprotection, low care/high overprotection).

^aOR not significantly different from 1 ($p > .05$).