Genitourinary Health of Sexually Abused Girls and Boys: A Matched-Cohort Study

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Objective To compare genitourinary health problems of children and adolescents with a substantiated report of sexual abuse with those of the general pediatric population.

Study design Via a prospective matched-cohort design, administrative databases between January 1996 and March 2013 were used to document genitourinary problems of 882 sexually abused children and those of 882 matched controls. Generalized linear mixed models determined the association between a substantiated sexual abuse and diagnoses for sexually transmitted infections and urinary and genital health problems.

Results Adjusted results revealed that up to 12 years after a sexual abuse was substantiated, abused girls had, respectively, 2.1 and 1.4 times more diagnoses for urinary and genital health problems compared with girls from the general population, whereas no difference was found for sexually transmitted infections. Sexually abused boys had an equivalent number of diagnoses as those from the general population for all 3 outcomes. Depending on the genitourinary health problem, abused girls and those from the general population had between 2.5 and 11 times more diagnoses than abused boys or those from the general population.

Conclusions This study showed that substantiated childhood sexual abuse is associated with more urinary and genital health problems among girls but not boys. Early prevention and intervention efforts may mitigate the problems such that they do not persist or worsen over time and into adulthood. *(J Pediatr 2017;■■:■■-■■).*

Based on a recent national survey in the US, 1 in 4 girls and 1 in 20 boys are victims of sexual abuse before the age of 17 years.[1] Survivors of child sexual abuse (CSA) are more at risk of a wide range of mental health problems.[2-4] A number of studies indicate that exposure to CSA also is associated with an increase in other physical health problems during adulthood.[5-8]

Studies on the association between CSA and physical health have been conducted primarily among adults. Little is known about consequences on children and adolescents' physical health. Most studies conducted among adults involved small samples, female subjects, cross-sectional designs, and adult retrospective self-reports of victimization and health.[5-8] Among physical health problems, those related to genitourinary health, such as sexually transmitted infections (STIs), urinary tract infections, and vaginitis, are particularly important to document during adolescence, when sexual activity begins for a majority of individuals.[9] Adolescence is thus a time-sensitive period for onset of genitourinary health issues and is a critical window for prevention.

Studies have shown associations between CSA and STIs,[10-13] vulvovaginitis or pathologic vaginal discharge,[12,14] dyspareunia or other pelvic floor dysfunctions,[12,15,16] and urinary problems, such as enuresis,[14,17] although limitations in methodology restrict the conclusions that can be drawn from them. Indeed, the use of self-report data to document genitourinary health problems[10-13,15,16] or CSA[10-13,15] can lead to recall biases, and the use of cross-sectional designs[11-13,15,16] limits our understanding of the development of these health problems. Furthermore, the majority of these studies were conducted among girls only,[12,13,15,16] or, when the samples were mixed, too few boys were included to draw conclusions about them specifically,[14,17] such that boys' problems are not yet well documented.

The purpose of this study was to compare genitourinary health problems among children and adolescents with a substantiated report of sexual abuse with those of the general pediatric population. The main objective was to determine whether sexually abused children received more diagnoses of STIs, urinary, and genital health problems after the substantiation of sexual abuse compared with children from the general population. A secondary goal was to determine whether differences would be observed in subgroups of girls and boys and whether sex differences exist among subgroups of sexually abused children and those from the general population.

CPA	Child protection agency
CSA	Child sexual abuse
STI	Sexually transmitted infection

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Methods

Data for this matched-cohort study come from 3 Canadian administrative databases: (1) one large Canadian city's child protection agency (CPA), (2) the public health insurance agency, and (3) the Ministry of Health and Social Services. Children younger than 18 years of age who had a substantiated report of sexual abuse were selected and comprised the sexually abused group (n = 955). Via the use of their surname, name, complete address, date of birth, and health insurance number, administrative data from the public health insurance agency were found for 882 (92%). Because all Canadian citizens and foreign nationals authorized to stay within the country for more than 6 months are covered by the public health care system, unmatched data are probably due to misspelling of given names, last names, health insurance number, or addresses in the CPA database rather than because sexually abused participants were not covered. Comparisons between participants excluded from the study (n = 73) and those whose health data were matched (n = 882) are described in detail elsewhere.[18] Each of the 882 children and adolescents was matched to a child or adolescent from the general population using the public health insurance agency's administrative database according to the 3 following criteria: (1) birth year and month, (2) sex, and (3) administrative region at the time of the substantiated report of sexual abuse.

The abused group and general population group were each composed of 661 girls (75%) and 221 boys (25%). The average age of abused participants when the first sexual abuse report was substantiated was 11.07 years (SD = 4.18), which is similar to the average age of participants from the matched-control group when selected into the study (M = 11.10, SD = 4.14). Abused boys and those from the general population were significantly younger (M = 9.94, SD = 4.02) than girls (M = 11.45, SD = 4.17; t [1762] = 6 652, $P < .001$) when selected into the study. This study followed 10 yearly waves (2001-2010) of children and adolescents with a substantiated sexual abuse.

Table I presents number of abused participants entering the study by sex, yearly waves (2001-2010), age at study entry, age at study end (2013), and number of years for which genitourinary health problems were documented before and after the first substantiated report of sexual abuse. For participants who were sexually abused, before the first substantiated report of sexual abuse, they had additional reports of neglect (31%), physical abuse (10%), and behavioral problems (8%). Although characteristics of the abuse (eg, nature, frequency) were not available in CPA databases, an incidence study on situations assessed by CPA revealed that corroborated sexual abuses were mostly sexual touching (46%), penetration or attempted penetration (17%), and oral sex (9%).[19] Information about the abuse histories of participants from the general population was unavailable; therefore, they also may have been sexually abused without a report being made and substantiated during the study.

Measures

Reported sexual abuse may include sexual touching, sexual communication (eg, exposure to pornographic material), penetration or attempted penetration, oral sex, voyeurism, exhibitionism, or sexual exploitation (prostitution).[19] When a sexual abuse report is retained by the CPA for evaluation, a social worker makes a clinical judgment regarding the level of corroboration of the sexual abuse. The facts could be (1) founded/substantiated (sufficient evidence that sexual abuse has occurred), (2) suspected (suspicion of sexual abuse but insufficient evidence to substantiate the presence or absence of abuse), or (3) unfounded/unsubstantiated (sufficient evidence to the absence of sexual abuse).[20] For the current study, children and adolescents with at least one substantiated report of sexual abuse (only the first report is considered for this study) between 2001 and 2010 at the CPA were selected and comprised the sexually abused cohort (exposed cohort). Children and adolescents from the general population could be matched only once to a sexually abused child and formed the unexposed cohort because they had no substantiated report of sexual abuse at the same CPA between 2001 and 2010.

Table I. Number of abused participants entering the study per sex, yearly waves, age at study entry, age at study end, and number of years for which genitourinary health problems were documented before and after the first substantiated report of SA

				Age at entry in the study				Age at the end of study				Years (mean) documented for genitourinary problems	
Waves	Total (n)	Girls (n)	Boys (n)	Mean	SD	Min	Max	Mean	SD	Min	Max	Before SA	After SA
2001	95	79	16	10.3	4.3	2.1	17.3	22.0	4.3	14.1	29.0	5.6	11.7
2002	75	60	15	11.1	3.9	3.6	18.2	21.9	3.9	14.3	28.6	6.5	10.7
2003	109	76	33	10.3	3.9	2.6	18.2	20.1	4.0	12.7	28.0	7.5	9.7
2004	99	68	31	10.6	4.3	2.7	18.0	19.3	4.3	11.1	27.1	8.5	8.7
2005	131	93	38	10.6	4.5	2.8	17.9	18.4	4.5	10.4	26.1	9.5	7.8
2006	91	63	28	11.4	4.4	3.0	17.9	18.1	4.4	9.6	25.0	10.6	6.7
2007	105	80	25	12.4	4.1	1.9	18.0	18.2	4.1	7.5	24.0	11.5	5.8
2008	76	60	16	11.2	3.9	2.1	17.9	15.9	3.9	7.1	22.7	12.5	4.7
2009	45	35	10	10.9	4.6	3.2	17.6	14.7	4.5	6.5	21.0	13.5	3.8
2010	56	47	9	12.3	4.0	3.8	17.2	15.1	4.0	6.3	20.2	14.4	2.8
Total	882	661	221	11.0	4.2	1.9	18.2	18.7	4.7	6.3	29.0	9.6	7.7

SA, sexual abuse.

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