

Sexual Violence against Children with Disabilities: A Danish National Birth Cohort Prospective Study

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Abstract

Background: Children with disabilities are at heightened risk of sexual violence compared to non-disabled peers.

Objective: We aimed to examine the associations between ten childhood disabilities and sexual victimization.

Methods: Data were drawn from the Danish Psychiatric Case Register, the Criminal Register, and other population-based registers. Children born between 1994 and 2001 (n=570,351) were followed until 18 years of age. Using logistic regression, the association between the disabilities and risk of sexual victimisation was estimated.

Results: We identified 8,860 cases of sexual victimization towards children and adolescents. In the fully adjusted models, children with a diagnosis of ADHD, speech disability and intellectual disability were at highest risk of sexual victimization. Children with comorbid disabilities were particularly vulnerable to sexual victimization.

Conclusions: We found that children with certain types of disability have a higher risk of sexual victimization. Our findings indicate that educational institutions and health care professionals should be aware of and have specialized training in, recognizing and assessing sexual victimization among children with disabilities.

Keywords: disabilities; children & adolescents; sexual violence; national birth cohort; prospective

Introduction

Sexual violence is any sexual act or attempt to obtain a sexual act by violence or coercion (1). It is not uncommon and is one of the most traumatic, pervasive violent acts, and a severe violation of human rights (2). Sexual violence is a serious public health problem and has a profound short or long-term impact on physical and mental health, including increased risk of sexual and reproductive problems (3-5).

Though women and girls suffer disproportionately, sexual violence can occur to anybody at any age; it is an act of violence that can be perpetrated by parents, caregivers, acquaintances, and strangers (6). It is often an aggressive act that frequently aims to express power and dominance over the victim.

Sexual violence remains highly stigmatized in all settings, thus levels of disclosure of the assault vary making it difficult to estimate accurate prevalence

rates (7-8). In general, it is a widely underreported phenomenon, thus available data tend to underestimate the true scale of the problem.

Evidence suggests that children with intellectual and/or developmental disabilities are at a higher risk for sexual abuse than non-disabled peers (9-12). A recent study demonstrated an overall prevalence of 31.7% of violence against children with disabilities and a two-fold increased risk of violence against disabled children compared to non-disabled peers (8). A systematic review and meta-analysis on the risk of violence against children with disabilities (11) reported a prevalence of 15% for sexual violence and OR 2.88 (2.24-3.69) for any disability based on nine studies and OR 4.62 (2.08-10.23) for mental or intellectual disability based on four studies. Another meta-analytical review demonstrated that individuals with disabilities were twice as likely to be a victim of sexual violence in both childhood and adulthood

(12). Indeed, this review found that the risk was higher amongst adults than children with disabilities indicating that whilst the risk of sexual violence for non-disabled peers reduces as they progress to adulthood, this risk remains stable and increases for disabled persons as they age (12). Additional factors do place children with disabilities at a heightened risk of sexual victimisation depending on complex behavioural and communication difficulties they might endure such as social isolation, limited sexual education in terms of knowledge, rights and understanding of sexuality, needing personal care and communication barriers that prevent giving consent and disclosure of the abuse (13). It is therefore important that education around these issues is provided during childhood and early interventions are in place that support children and their caregivers to recognise these risk factors in a manner that is suitable to the diverse and complex needs that child may have.

Collectively, there is consensus that the existing evidence on the association between childhood disability and sexual victimisation is not robust, most studies are not well designed, the standards of measuring disability and violence are poor, and there is insufficient assessment of whether violence precedes the development of disabilities (11, 14). The need for high-quality epidemiological research that focuses on all disability types, the use of standardised measures of disability and violence, important moderators (e.g., sex and age) and accurate assessment of whether disabilities were present before exposure to violence or were a direct result of violence is clearly warranted (15).

To address some of these challenges the current study linked relevant information from the Danish administrative registers from the police records of criminal charges with ICD-10 diagnoses of childhood disabilities using hospital admission data. Both of these sources are limited in some respects: not all sexual assaults are reported to the police and not all types of disabilities are reported to the hospitals, e.g., dyslexia is mostly not considered a health issue but rather an educational issue that concerns 8% of all Danish school aged children (16). However, for other types of disabilities we expect all cases to be present in the hospitals records due to medical attention. Consequently, while this study did not do any progress in pertaining the true prevalence of childhood sexual assaults among children with a disability it studied the associations among 10 specific types of disabilities with all reported police records on childhood sexual assault. With access to high quality longitudinal population-level data, this study was able to explore trends over time whilst also adjusting for several important confounders.

Aim

This study aimed to assess the associations between 10 specific types of childhood disabilities and police reported sexual violence in a large national birth cohort over a period of 18 years.

Method

Ethical approval

Danish register studies are not referable to individual persons and, therefore, by Danish law they are not subject to individual approval. However, each project must be accepted by the Danish Data Protection Agency before access is granted to authorized researchers and institutions.

Population

The population consists of 570,351 children and adolescents who were born between 1994 and 2002 and residing in Denmark at least until they turned 18. The Danish register covering victims of criminal violence is only available since 2001. Therefore, birth year will be included in the logistic regression to account for skewness between cohorts. The children were followed from birth until they turn 18 but victimization is only accessed from the 7th year onwards due to the scarcity of reports before that age. Several family risk factors occurring after birth and before the first registered crime towards the child are included. We only included first time cases of sexual violence. Those who were not reported victims of sexual violence constituted the control group.

Victim of Sexual Violence

Sexual violent crime was defined as criminal offences against the person according to law enforcement records collected from the police records of reported criminal offences. This included rape, sexual assault, sexual exploitation, incest, and indecent exposure, sexual assault included intercourse/penetration without consent or defined unlawful because of the age of the victim and/or the relationship between the victim and the offender under the Danish Penalty Code (17).

Measures of disability

Data from the Danish Psychiatric Case Register and National Registry of Patients were used to identify the 10 specific types of disabilities using the ICD-10 codes. This included; Autistic Spectrum Disorders (ASD; ICD-10 F84), Attention Deficit Hyperactivity Disorder (ADHD; ICD-10 F90), speech disability (ICD-10 R47; F98), sensory impairment (ICD-10 H54; H90-H91; H93-H95) intellectual disability (ICD-10 F70-79; Q90), brain injury (ICD-10 S06; F06;F07.2; G44.3; G80), epilepsy (ICD-10 F80.3; G40), dyslexia (ICD-10 F81;R47), physical disabilities (ICD-10 R25-R29; T91-94), and

congenital malformations (ICD-10 Q00-89; Q91-99) (18).

Parental Variables

Mental Health

When a person has contact with a psychiatric hospital or department in Denmark, they receive an ICD-10 coded psychiatric diagnose that is recorded on the Psychiatric Central Register. This diagnosis is made by a psychiatrist. To proxy for parents mental health condition we included ICD-10 coded psychiatric diagnoses of any mood, anxiety and delusional disorder recorded for parents between 1994 and 2018, calculated from the child was born and until the child turned 18 or was victimized (whichever came first).

Alcohol/drug abuse

Alcohol and drug abuse were defined as the presence of official hospital records of alcohol/drug related conditions, both physical (e.g., alcohol poisoning, liver damage attributed to alcohol abuse) or mental/behavioural (e.g., ICD-10 diagnosis of alcohol use disorder) between the child was born and until the child turned 18 or was victimized (whichever came first).

History of Violence

This variable is comprised of information based on whether either parent was maltreated (ICD-10 T74; Y06-Y07; Z61-Z62) or a victim of violence that led to hospitalization (ICD-10 X85-X99; Y00-Y09; or cause of hospitalization violence). It also included whether either parent was convicted of a violent crime, which includes persons convicted of violence of various degrees of seriousness, including manslaughter, grievous bodily harm, assault, coercion, and threats (this category does not include unintended manslaughter resulting from traffic accidents). This variable of parental history of violence was created by combining data from the Criminal Statistics Register (CSR) and hospital admission data and was measured between the child was born and until the child turned 18 or was victimized (whichever came first). The Danish victim register started in 2001, which meant that children in later birth cohorts have a slightly higher probability of having parents that were victims, due to more years of potential registration. The control variable for birth year included in the logistic regressions will account for this differential probability.

Family Break-up

Family break-up was defined as the child having experienced divorce, separation, and/or the death of a parent. Also included was the situation where the

parents did not live together during at least one year during childhood.

Teenage Motherhood

We assessed whether the child's mother had been a teenager when she gave birth. Specifically, this variable was identifying mothers aged under 20 years of age when giving birth.

Family Deprivation

Deprivation was defined as the child having experienced parental unemployment during childhood (for either one or both parents) with more than 50% unemployment during any calendar year according to registers of Income Compensation Benefits, Labour Market research, and Unemployment Statistics. If deprivation occurred it was further categorized according to the child's developmental age at which the deprivation occurred (0-6 years, 7-13 years, and 14-17 years).

Child Variables

Out-of-home care

Children in out-of-home care was measured as children placed in residential care or family foster care by the Children's Act Section in the Danish Act on Social Services, according to the population-based register of social assistance for children in care. Child in out-of-home care was measured between the child was born and until the child turned 18 or was victimized (whichever came first).

Preventive in-home care

Preventive in-home care were defined as children receiving preventive measures from the social department of a municipality registered in the register for preventive measures for children and adolescents. Child receiving preventive in-home care was calculated between the child was born and until the child turned 18 or was victimized (whichever came first).

Statistical analysis

Data were aggregated from a longitudinal data set into a cross-sectional data set after having censored person-years after the year of sexual violence to make sure that disabilities and risk factors were not a result of the registered violent event. Disabilities and risk factors were considered present if the child was registered with the disability or faced the risk factor at least one year during childhood.

The number and percentage of cases (children exposed to sexual violence), and the number of controls (children from the same birth cohorts not exposed to sexual violence), were reported. Odds ratios and 95% confidence intervals for sexual violence were calculated given the 10 disabilities and

the eight risk factors using logistic regression. The regression models were adjusted for gender, birth year, and ethnic background (Danish vs immigrant or descendant of immigrants).

In separate analyses, the risk factor of family deprivation was included for each age interval 0-6 years, 7-13 years, and 14-17 years to analyse whether the age at which the risk factor accorded was important.

Results

Overall, the rate of reported first-time sexual violence cases against children and adolescents is low: 8,860 out of 570,351 equating to 1.55%. However, children with disabilities experienced higher rates of sexual violence compared to the controls (32.1% vs 24.2%). Boys were underrepresented (14.58% vs 51.92% in controls) and so were ethnic minorities with 4.62% compared to 8.03% in the control group. Table 1 shows the counts and percentages of children exposed to sexual violence according to each disability.

Table 2 outlines the unadjusted odds ratios from parental and familial risk factors for the child becoming a victim of sexual crime. All eight risk factors are associated with highly increased unadjusted ORs ranging from 2.19 (parental

unemployment) to 5.01, when the child has been placed in out-of-home care. The remaining six factors (parental alcohol or drug abuse, relationship break-up, parental violent history, teenage motherhood, mental diagnosis, and child preventive measures) had ORs between 2.48 and 3.05.

After adjustment for family risk factors, the associations between childhood disability and later sexual violence were attenuated (Table 3). Having a diagnosis of ADHD conferred a twofold increased risk of sexual violence, followed by having a speech impairment and intellectual disability.

Based on the child's developmental age (0-6 years, 7-13 years, and 14-17 years), we made a separate analysis of the impact of family deprivation as separate risk factors for the three age periods, and the adjusted ORs for the developmental periods were 1.71, 1.61, and 0.24, respectively, indicating that parental unemployment is particularly strong risk factor for sexual violence for disabled preschool and primary school children but not for adolescents with disabilities.

Consistent with the findings of Turner et al. (19) we found a cumulative effect of having several disabilities with adjusted ORs increasing from 1.75 with one disability over 2.69 for two disabilities, and 3.50 for three or more disabilities (Table 4).

TABLE 1. Risk of being a victim of sexual violence based on disability

Diagnosis	Exposed to sexual violence N=8860		Not exposed to sexual violence N=561491	
	n	%	n	%
Autistic spectrum disorder	173	1.95	11,599	2.07
ADHD	520	5.87	13,399	2.39
Speech disability	363	4.10	9,989	1.78
Sensory disability	157	1.77	6,805	1.21
Epilepsy	166	1.87	7,673	1.37
Intellectual disability	142	1.60	3,671	0.65
Brain injury	766	8.65	34,332	6.11
Physical disability	463	5.23	21,821	3.89
Dyslexia	34	0.38	1,369	0.24
Cong. Malformations	895	10.10	56,012	9.98

Notes. The table shows the number and proportions being exposed to sexual violence for each type of disability.

TABLE 2. Risk of being a victim of sexual violence based on parental and family risk factors

Risk factor	Exposed to sexual violence N=8,860		Not exposed to sexual violence N=561,491		Odds Ratio	
	Exposed	%	Exposed	%	OR	95% CI
Mental diagnosis	3,263	36.83	106,869	19.03	2.48	2.37-2.59
Abuse (alcohol or drugs)	1,162	13.12	26,505	4.72	3.05	2.86-3.25
Violence (perpetrator or victim)	2,818	31.81	77,928	13.88	2.89	2.76-3.03
Out-of-home care	1,194	13.48	16,931	3.02	5.01	4.70-5.34
Preventive in-home care	1,796	20.27	50,696	9.03	2.56	2.43-2.70
Relationship dissolved	6,392	72.14	262,794	46.80	2.94	2.81-3.09
Teenage motherhood	285	3.22	6,696	1.19	2.75	2.43-3.11
Unemployment	7,014	79.16	355,984	63.40	2.19	2.08-2.31

Notes. The table shows odds ratios (OR) for being exposed to sexual violence for each type of family risk factor.

TABLE 3. Unadjusted and adjusted risk of being a victim of sexual violence based on disability and family risk factors (N = 570,351)

<i>Diagnosis</i>	<i>Unadjusted OR</i>	<i>95% CI</i>	<i>Adjusted OR</i>	<i>95% CI</i>
Autistic spectrum disorder	0.94	0.81-1.10	0.88	0.75-1.03
ADHD	2.55	2.33-2.79	2.01	1.82-2.22
Speech disability	2.36	2.11-2.63	1.67	1.49-1.88
Sensory disability	1.47	1.25-1.73	1.17	0.99-1.38
Epilepsy	1.38	1.17-1.61	1.02	0.87-1.20
Intellectual disability	2.48	2.08-2.93	1.62	1.35-1.94
Brain injury	1.45	1.35-1.57	1.30	1.20-1.40
Physical disability	1.36	1.24-1.50	1.20	1.08-1.32
Dyslexia	1.58	1.09-2.21	1.14	0.79-1.64
Cong. Malformations	1.01	0.94-1.09	1.03	0.96-1.11

Note. Adjusted ORs controlling for gender, birth year and ethnic background.

TABLE 4. Risk of being a victim of sexual violence based on number of disabilities

<i>Number of disabilities</i>	<i>Unadjusted OR</i>	<i>95% CI</i>	<i>Adjusted OR</i>	<i>95% CI</i>
1 disability	1.38	1.32-1.45	1.75	1.25- 2.46
2 disabilities	1.90	1.73-2.08	2.69	1.37- 5.29
3 or more disabilities	2.01	1.70-2.38	3.50	1.18-10.43

Note. ORs based on a logistic regression of an indicator variable for being exposed to sexual violence on number of disabilities (reference group is no disabilities), diagnoses, family risk factors, gender, birth year and ethnic background. N: 570,351.

Discussion

This study assessed the relationship between specific childhood disabilities and sexual violence. The use of national administrative registers enables precise diagnoses of all classified disabilities and reported sexual violent acts. Compared to Christoffersen (9), we found an increase in the number of reported sexual violence from 1.18% to 1.55% from one decade to the next. This increase might reflect that more individuals have come forward due to higher public acknowledgement about the adverse consequences of sexual violence against children.

Overall, our findings are consistent with two meta-analyses that demonstrated children with certain disabilities confer a higher risk of sexual crime (11-12). We found that children with ADHD conferred the highest risk of sexual victimization (OR = 2.01). The association between ADHD and sexual victimization has been well-documented, however, findings remain unclear about the temporal ordering of this association (20). Numerous studies have identified ADHD as risk factor for later sexual victimization while others have looked at the impact of child sexual abuse on the development of ADHD symptoms (21-23).

The unadjusted models demonstrated eight types of disabilities that were significantly associated with being a victim of sexual violence. ADHD, intellectual disability, and speech disability were all associated with an increased likelihood (OR >2.36) of being a victim of sexual violence. Five other disabilities had OR between 1.36 and 1.58. These associations were attenuated when adjusted for other factors indicating that both family and social risk factors had an important role for the violent sexual victimization of

the child and a stronger role than the disabilities per se. Sexual violence against children with disabilities is more prevalent under some family and social conditions, for example, some studies have demonstrated elevated risk in low income and single-parent households (24-26). The current study found that a parental mental health diagnosis, a parent being either convicted as a perpetrator or a victim of violence, family break-up, teenage motherhood, and extended unemployment were important risk factors when we adjusted for other risk factors and type of disability. In the unadjusted models, parental substance abuse was associated with a 3-fold risk of their offspring being a victim of sexual violence which reduced substantially in the fully adjusted models indicating that other factors may be contributing to offspring risk of violence.

In comparison to other studies, the strength of the association between disabilities and sexual violence in this study are much lower than previously reported (11). There are several possibilities for this; first the current study includes comprehensive adjustment for confounders which has been a limitation of previous studies and second, we used diagnosed disabilities and the criminally recorded sexual offences. Diagnoses of disabilities given by trained psychiatrists are preferable to data of self-reported disabilities which is a strength of this study.

In line with Turner et al. (19), we also found a strong increased risk of sexual violence for children with comorbidities. This is important knowledge for parents and caregivers in specialized institutions that some of their children are at risk of being victimized to a higher degree than others and therefore precautions should be established or reinforced.

Protection from violence for children and adults with disabilities are recognised by the UN Conventions on the Rights of the Child (27) and the UN Convention on the Rights of Persons with Disabilities (28). Despite these legally binding international agreements many children continue to experience sexual violence. These findings elucidate that increased efforts to bring justice to the victimized children and to help them recover from their psychological wounds is clearly warranted. A step in this direction is the recent addition to the Danish Penalty Code concerning non-consensual sex. This law offers more protection to children with disabilities whereby issues with understanding and providing consent may be impaired.

These findings highlight some noteworthy considerations. First, it is imperative that educational institutions and health care professionals should be aware of and have specialized training in, recognising and assessing sexual victimization among children with disabilities. The current study has found that certain disabilities for example those associated with speech disorders have a higher risk of sexual victimisation. More effort is needed to provide needs-based access to authorities and support services to ensure communication barriers are removed for example, providing sign-language interpretation that will help the children with speech difficulties understand and feel more comfortable in sharing their experiences. Second, there should be more research invested into adopting traditional therapies offered to non-disabled children to negate psychological distress following sexual abuse to children with specific disabilities. As a supportive example, one study developed treatment procedures using a modified Cognitive Behavior Therapy approach for children with physical disabilities who experienced rape and found the therapy was feasible and beneficial (29). Finally, sexual education should be provided to children with disabilities to improve their knowledge about their rights and the issues relating to consent should be a priority area.

The quality of the Danish registers is well-known (30-31), which improves the reliability and accuracy of the findings. However, many incidents are not reported to authorities which therefore makes it difficult to establish the true scale of the problem. In addition, children with disabilities may not have the cognitive or mental capacity to report while struggling the emotional turmoil that the sexual violence had created in the child (32). Therefore, these findings are likely to be under-represented and sexual violence is likely to be more widespread than what we can document. Another limitation is that we used a very conservative measure of parental substance abuse that included long-term alcohol related issues such as liver damage attributed to

alcohol abuse. Therefore, findings associated with parental substance abuse should be interpreted with this in mind. Nonetheless, the high level of precision in defining variables (disabilities and acts of sexual violence), comprehensive adjustment for family confounders and temporal ordering to ensure the sexual violence does not precede disability, adds to the validity of these findings in promoting preventive interventions for these vulnerable children.

Conclusions

We have robust evidence for estimates of the risk of sexual violence against children associated with the 10 specific disabilities. Developmentally sensitive assessment should be performed on a regular basis to identify those who have abused, so that intervention could be initiated early, and future abuse be prevented.

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