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BASIC RESEARCH ARTICLE

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Physical 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 violence compared to their non-disabled peers. However, extant research suffers from several limitations, focusing on child abuse and one or few types of disability, ignoring conventional violent crimes.

Objective: The aim was to assess 10 disabilities and to examine whether different disabilities vary in their risk of criminal victimization.

Method: Using the Danish Psychiatric Case Register, the Criminal Register, and other population-based registers, we included nine birth cohorts ($n = 570,351$) and followed them until 18 years of age. We compared children exposed to violence with non-exposed children. We estimated odds ratios (ORs) for the disabilities and adjusted the ORs for several risk factors.

Results: We identified 12,830 cases of reported violence (2.25% of the population) towards children and adolescents. Children with disabilities were overrepresented, as were boys and ethnic minorities. After controlling for risk factors, four disabilities had heightened risk for criminal violence: attention-deficit hyperactivity disorder (ADHD), brain injury, speech, and physical disabilities. When we compared risk factors controlling for the various disabilities, parental history of violence, family break-up, out-of-home placement, and parental unemployment contributed especially to the violence, while parental alcohol/drug abuse was no longer a predictor. Having several disabilities increased the risk of violence.

Conclusions: Criminal victimization of children and adolescents with specific disabilities was common. However, compared to the previous decade, a considerable reduction of one-third has taken place. Four risk factors contributed particularly to the risk of violence; therefore, precautions should be taken to further reduce the violence.

Violencia física contra niños con discapacidades: Un estudio de cohorte de nacimiento prospectivo nacional Danés

Antecedentes: Los niños con discapacidad corren un mayor riesgo de violencia en comparación con sus pares sin discapacidad. Sin embargo, la investigación existente adolece de varias limitaciones centrándose en el abuso infantil y uno o pocos tipos de discapacidad, ignorando los delitos violentos convencionales.

Objetivos: El objetivo fue evaluar diez discapacidades y examinar si las diferentes discapacidades varían en su riesgo de victimización criminal.

Método: Utilizando el Registro de Casos Psiquiátricos Danés, el Registro Penal y otros registros basados en la población, incluimos nueve cohortes de nacimiento (n=570.351) y las seguimos hasta los 18 años de edad. Comparamos niños expuestos a violencia con los no expuestos. Estimamos los ORs para las discapacidades y ajustamos los ORs para varios factores de riesgo.

Resultados: Identificamos 12.830 casos de violencia informada (2,25% de la población) hacia infantes y adolescentes. Los niños/as con discapacidades estuvieron sobrerrepresentados, al igual que los niños y las minorías étnicas. Después de controlar por factores de riesgo, cuatro discapacidades aumentaron el riesgo de violencia criminal: TDAH, daño cerebral, discapacidades físicas y del lenguaje. Cuando comparamos los factores de riesgo controlando para las diversas discapacidades, el historial de violencia de los padres, la ruptura familiar, la colocación fuera del hogar, y el desempleo de los padres contribuyeron especialmente a la violencia, mientras que el abuso de alcohol y drogas de los padres ya no era un predictor. Tener varias discapacidades aumentaba el riesgo de violencia.

Conclusiones: La victimización criminal de los niños y adolescentes con discapacidades específicas era común. Sin embargo, en comparación con la década anterior, se ha producido una reducción considerable de 1/3. Cuatro factores de riesgo contribuyeron particularmente al riesgo de violencia; por lo tanto, se deben tomar precauciones para reducir aún más la violencia.

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关键词
儿童和青少年; 残疾; 身体暴力; 全国出生队列; 前瞻性

HIGHLIGHTS

- Based on data from nine full birth cohorts, followed for 18 years, the study concludes that disabled children are considerably more exposed to police-reported physical violence than non-disabled children.
- Four disabilities were especially exposed to physical violence when we controlled for risk factors.
- Four risk factors contributed particularly to physical violence when we controlled for diagnoses.

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对残疾儿童的身体暴力：一项丹麦全国出生队列前瞻性研究

背景：与非残疾同龄人相比，残疾儿童遭受暴力的风险更高。 然而，现有研究存在一些主要关注儿童虐待和一种或几种残疾、忽视了传统的暴力犯罪的局限性。
目的：旨在评估十种残疾，考查不同残疾的犯罪受害风险是否不同。
方法：使用丹麦精神病病例登记册、犯罪登记册和其他基于人口的登记册，我们纳入了九个出生队列 (n = 570,351) 并追踪直到他们 18 岁。 我们将暴露于暴力的儿童与未暴露的儿童进行了比较。 我们估计了残疾的 OR 值并针对几个风险因素调整了 OR。
结果：我们确定了 12,830 起报告了针对儿童和青少年的暴力事件（占人口的 2.25%）。 残疾儿童、男孩和少数民族占大多数。 在控制了风险因素后，四种残疾增加了犯罪暴力的风险：ADHD、脑损伤、言语和身体残疾。 当我们比较控制各种残疾的风险因素时，父母的暴力史、家庭破裂、背井离乡和父母失业尤其是导致暴力的原因，而父母酗酒和吸毒不再是预测因素。 有多种残疾会增加遭受暴力的风险。
结论：具有特定残疾的儿童和青少年的犯罪受害很常见。 但是，与前十年相比，已经减少了 1/3。 四个风险因素对暴力风险的影响尤为严重； 因此，应采取预防措施进一步减少暴力。

1. Introduction

Child-directed violence is a global public health priority (Sethi et al., 2013), with evidence demonstrating that children with disabilities are at heightened risk of violence compared to their non-disabled peers (Fisher et al., 2008; Fitzsimons, 2009; Harrell, 2016; Jones et al., 2012; Marge, 2003; Spencer et al., 2005; Sullivan & Knutson, 2000). Global estimates demonstrate that over a billion people worldwide (15% of the population) are living with a mental or physical disability (WHO, 2013). A meta-analysis reported pooled prevalence estimates for disabled children of 26.7% for any form of violence, 20.4% for physical violence, and 13.7% for sexual violence (Jones et al., 2012). Furthermore, this review indicated that children with a disability were over three times more likely to experience any form of violence compared to their non-disabled peers (Jones et al., 2012). Indeed, children with mental or intellectual impairments, in particular, were at an increased risk for physical violence [odds ratio (OR) = 3.1] and sexual violence (OR = 4.6) compared to non-disabled children. Data from the UK also found that children with disabilities had an increased likelihood of child protection registration; however, this risk varied depending on different types of impairment (Spencer et al., 2005). Conversely, evidence does not always support this association, with another systematic review on population-based studies reporting weak evidence for a link between disability and victimization in childhood (Govindshenoy & Spencer, 2007).

There are many possible explanations that may place children with disabilities at an increased risk for victimization compared with their non-disabled peers. Disabled children face many challenges, such as social exclusion, communication difficulties, and behavioural problems associated with the specific condition. Studies have demonstrated higher levels of parental stress, difficult parent–child relationships, and family conflict in families caring for a disabled child (Hayes & Watson, 2013; Johnston & Mash, 2001). Other factors, such as communication barriers and placement in institutional care, have also been found to increase the risk of victimization in disabled children (Sethi et al., 2013). These findings are supported by a report conducted by the European Union (EU) Agency for Fundamental Rights (FRA) across 13 EU Member States, which indicated that societal attitudes such as ignorance and prejudice remain a risk factor for children with disabilities becoming victims of violence. This report also demonstrated that parental risk factors (e.g. economic and emotional stress, lack of support); overextended and undertrained care personnel; and perpetrators' own perceptions that children with disabilities are 'easy targets' are all potential causes of violence against children with disabilities (FRA, 2015).

Previous studies examining the association between disabilities and victimization have myriad conceptual and analytical limitations. First, the use of poorly operationalized definitions of disability and victimization is common. Secondly, many studies focus on only one form of disability or combine many different forms of disability into a single index (Turner, Vanderminden, et al., 2011). Thirdly, there is an overrepresentation of studies focusing exclusively on child abuse and not considering other forms of victimization, such as conventional violent crimes, e.g. homicides, assaults, aggravated assault, and sexual victimization (Sullivan, 2006, 2009). Furthermore, many studies have identified that different disabilities confer different challenges and impairments that may vary in their risk for victimization (Spencer et al., 2005). Therefore, to delineate more clearly these associations it is important to consider the specificity of certain impairments with different forms of victimization. Finally, many existing studies use samples derived from child protective services and healthcare settings, which have been argued to introduce

selection bias that may overestimate the level of violence in children with disabilities. Similarly, studies have noted that previous risk estimates may overinflate the association between violence and disability owing to inadequate adjustment for other confounding factors such as socioeconomic status, parental risk factors, and health-comprising behaviours (Jones et al., 2012; Petersilia, 2001). These methodological limitations are likely to partly account for the inconsistencies in risk estimates for the association between disability and victimization, which ultimately affects the development of initiatives for preventing violence against children with disabilities. Consequently, there is a critical need for epidemiological data that draws upon information across a variety of sectors and agencies, such as criminal justice records and medical records, to identify associations and temporal pathways between child disabilities and violence against children (Sullivan, 2009). A Danish study found that children with disabilities – including attention-deficit hyperactivity disorder (ADHD), mental retardation, autism sensory impairment, brain injury, and physical disability – were more likely to be victims of a reported violent crime than children with no disabilities (Christoffersen, 2019). However, some of the diagnostic delineations in this study are not common, e.g. cerebral palsy is categorized as a speech disability instead of a brain injury; separating stuttering from the speech disability category which includes International Classification of Diseases, 10th revision (ICD-10) R62, 'Lack of expected normal physiological development', i.e. delayed puberty; and Down's syndrome is separated from the intellectual disability category. The Christoffersen study has limited data on reported violence, as the Criminal Register starts in 2001 and the studied birth cohorts are from 1984 to 1994. This means that only the cohort born in 1994 will have full coverage and the cohort born in 1984 will be aged 17 once the violence register starts.

1.1. The present study

The current study applies the Danish registers that can be connected using the unique, individual civil person number (CPN), which every citizen has. In all contacts with the authorities, this CPN is used for smooth identification and administration. The registers encompass almost every sphere of public activity, especially when transfer of money is involved: population data, education, labour, treatment, tax, pension, and many others. The use of the CPN reduces the risk of mistakes and allows control of administrative procedures as well as individual activities. In addition to public services, many private companies (e.g. insurance companies) use the CPN. For research, only authorized institutions can apply for use of the various public registers. Data access is well protected through application, many procedural steps, and the use of a radio clock signal given to researchers that gives a small window for typing a 10-digit code, which is open for 60 s. Here, we combine information mainly from three sources: the register for police-reported criminal activity; the psychiatric register, where diagnosed disabilities are placed; and several registers for demographic information.

We have chosen 10 disabilities that are relatively common, well defined by the World Health Organization (WHO) ICD-10 diagnostic codes, and diagnoses given by trained psychiatrists and medical doctors working in specialized medical wards. Together, we think that this array covers most disabilities with a primary physical component. Also, by tradition, many of the disabilities are treated in specialized hospital wards or training institutions. The violent acts are taken from the official police records; they are all reported to and dealt with by the authorities. They include all types of physical, criminal assaults in the Danish Penalty Code. As the more insignificant cases of violence are unlikely to be registered by the police, the ones that are registered can be assumed to be quite serious cases of assault. Therefore, the reported violent acts are very relevant and highly valid measures. The associations between disabilities and violence can be confounded by several background family factors, including parental mental health, poverty, and parental educations. We will adjust for these factors in our final models to avoid inflated associations.

We aim to repeat the findings of Christoffersen (2019) using delineations of diagnostic categories that are more consensually accepted, and a newer sample of children, born between 1994 and 2001, from Danish nationwide registers to prospectively assess the relationship between specific childhood disabilities and victimization, with full data coverage of reported victimization for all birth cohorts, and to examine whether different trends emerge over the decades. We expect that the reported crime rate has decreased as a result of the abolition of the Danish parental corporal punishment rights in 1997, the decreasing numbers of physical assault victims in Danish emergency wards from 2007 to 2017, and, generally, the increased public attention paid to disabled children in recent years.

2. Method

In the following subsections, measures of disability and parental and child risk factors are defined. Next, the population is presented, and, finally, statistical methods are described.

2.1. Measures of disability

Data from the Danish Psychiatric Case Register and National Registry of Patients were used for the specific

types of disability. These 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–F79; 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–T94), and congenital malformations (ICD-10 Q00–Q89; Q91–Q99) (WHO, 1994).

2.2. Parental risk factors

2.2.1. Parental mental health

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

2.2.2. Parental 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) and mental/behavioural (e.g. ICD diagnosis of alcohol use disorder) from when the child was born until the child turned 18 or was victimized (whichever came first).

2.2.3. Parental 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) and professional assessment of the injury being wilfully inflicted by others. 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, or rape, which belongs to the category of sexual offences). This variable of parental history of violence was created by combining data from the Criminal Statistics Register and hospital admission data, and was measured from the child was born until the child turned 18 or was victimized (whichever came first). The Danish victim register started in 2001, which means that children in later birth cohorts have a slightly higher probability of having parents who were victims, owing to more years of potential registration. We account for this by including a control variable for birth year in the logistic regressions.

2.3. Child risk factors

2.3.1. Child in care

'Child in care' meant that the child was placed into care via the Children's Act Section or the child was not living with the parents but in an institution or a foster home, according to the population-based register of social assistance for children in care, and was measured from when the child was born until the child turned 18 or was victimized (whichever came first).

2.3.2. Child receiving preventive measures

'Child receiving preventive measures' included children who received preventive measures from the social department of a municipality registered in the register for preventive measures for children and adolescents, and was calculated from when the child was born until the child turned 18 or was victimized (whichever came first).

2.3.3. 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 the child's childhood.

2.3.4. Teenage mother

We assessed whether each participant's mother had been a teenager herself when she gave birth; this variable was created when the mother had been aged under 20 years when giving birth.

2.3.5. 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.

2.3.6. Victim of violence

Violent crimes were reported as criminal offences against the person according to law enforcement records collected from the police records of reported criminal offences. These included victims of violent personal crimes [e.g. attempted homicide, murder, robbery (not including bag or purse snatching), aggravated assault and simple assault, but also threats, blackmail, and breach of a caution] under the Danish Penalty Code (Jensen et al., 2003). The definition of violent crime did not include rape, as rape is classified as a sexual offence in the national registers.

2.4. Population

The population consists of 570,351 children and adolescents born between 1994 and 2002 and residing in Denmark at least until they turned 18. As mentioned earlier, the Danish register including victims of criminal violence has only been available since 2001. Therefore, inclusion of birth year in the logistic regression will account for the skewness between cohorts. The children are followed from their birth year until they turn 18, but victimization is only accessed from the seventh year onwards. Family and community risk factors occurring after birth and before the first registered crime towards the child are included. We only include first-time cases of violence. Those who have not reported being victims of violence constitute the control group.

2.5. 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 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 for at least one year during childhood.

The number and percentage of cases (children exposed to physical violence), and the number of controls (children from the same birth cohorts not exposed to violence), were reported. Odds ratios (ORs) for physical violence were calculated given the 10 disabilities and the eight risk factors. In addition, 95% confidence intervals (CIs) for the OR were reported.

Logistic regressions with violence as the dependent variable and indicator variables for disabilities and risk factors as independent variables were estimated. The regression models were adjusted for gender, birth year, and ethnic background (Danish vs immigrant or descendant).

In separate analyses, risk factors were 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 was accorded was important.

Table 1. Risk of being a victim of violence, based on disability.

	Exposed to violence ($N = 12,830$)		Not exposed to violence ($N = 557,521$)			
Diagnosis	*n*	%	*n*	%	OR	95% CI
Autistic spectrum disorder	324	2.53	11,448	2.05	1.24	1.10–1.38
ADHD	1,179	9.19	12,740	2.29	4.33	4.06–4.61
Speech disability	528	4.12	9,839	1.76	2.39	2.18–2.61
Sensory disability	191	1.49	6,771	1.21	1.23	1.06–1.42
Epilepsy	217	1.69	7,622	1.37	1.24	1.08–1.42
Intellectual disability	170	1.33	3,643	0.65	2.04	1.74–2.38
Brain injury	1,552	12.10	33,546	6.02	2.15	2.03–2.27
Physical disability	707	5.51	21,577	3.87	1.45	1.34–1.56
Dyslexia	51	0.40	1,352	0.24	1.64	1.22–2.17
Congenital malformations	1,421	11.08	55,652	9.98	1.12	1.06–1.19

Note: The table shows odds ratios (ORs) for being exposed to violence for each type of disability.
ADHD, attention-deficit hyperactivity disorder; CI, confidence interval.

3. Results

Overall, the rate of reported first-time physical violence cases against children and adolescents was low: 12,830 out of 570,351 children and adolescents in the population were reported to be victims of physical violence. This amounted to 2.25% of the population. However, children with disabilities are overrepresented within this group of children experiencing violence compared to the controls (37.74% of the children exposed to violence are children with disabilities vs 24.0% of the children not exposed to violence). Boys were overrepresented (63.90% vs 51.1%) and so were ethnic minorities (13.51% vs 7.85% in the control group).

Table 1 shows the unadjusted ORs of being a victim of violence when the child has a particular disability or diagnosis, and the violence is reported to the police. The risk was more than four times higher for children with ADHD compared with the controls. For children with speech disabilities, intellectual disability, and brain injury, the ORs were more two times higher. In addition, the remaining five disabilities had ORs between 1.12 and 1.64.

Table 2 outlines the unadjusted ORs from parental and familial risk factors for the child becoming a victim of violent crime. All eight risk factors are associated with highly increased unadjusted ORs, ranging from 2.7 (a parental mental diagnosis) to 5.44, when the child has been placed in out-of-home care. Parental violent history contributed to an almost five times higher risk, while parental alcohol or drug abuse, teenage motherhood, relationship break-up, and unemployment likewise contributed strongly to physical violence directed towards the child.

The adjusted risk of becoming a victim of violent crime for children with specific disabilities changed when we controlled for confounding family risk factors (Table 3A). Now, only four disabilities had ORs > 1: the OR for ADHD (OR = 2.17) was reduced to half and, almost, so was that for speech disability (OR = 1.38). The OR for brain injury (OR = 1.77) was reduced by one-quarter, while physical disability (OR = 1.36) showed only a very small reduction. The remaining six disabilities now had ORs ≤ 1 after the adjustment. So, the changes indicate that family risk factors seem to play an important role in the extent of physical violence against the disabled children.

When we compared the unadjusted and the adjusted risk for becoming a victim of violent crime

Table 2. Risk of being a victim of violence, based on parental and family risk factors.

	Exposed to violence (*N* = 12,830)		Not exposed to violence (*N* = 557,521)			
Risk factor	Exposed	%	Exposed	%	OR	95% CI
Mental diagnosis	4,949	38.57	105,183	18.87	2.70	2.60–2.80
Abuse (alcohol or drugs)	1,631	12.71	26,036	4.67	2.97	2.82–3.14
Violence (perpetrator or victim)	5,503	42.89	75,243	13.50	4.81	4.64–4.99
Out-of-home care	1,796	14.00	16,207	2.91	5.44	5.16–5.73
Child preventive measures	3,128	24.38	49,089	8.80	3.34	3.20–3.48
Relationship dissolved	9,402	73.28	259,784	46.60	3.14	3.02–3.27
Teenage mother	532	4.15	6,449	1.16	3.70	3.37–4.05
Unemployment	10,731	83.64	352,267	63.18	2.98	2.84–3.12

Note: The table shows odds ratios (ORs) for being exposed to violence for each type of family risk factor.
CI, confidence interval.

across family risk factors, while controlling for the various disabilities (Table 3B), we likewise found considerable reductions in ORs, most of which were reduced to half size. The four strongest factors were a parental history of violence, family break-up, the child being placed out of the home, and parental unemployment. The impacts of a parental mental diagnosis and being a teenage mother were attenuated. However, parental alcohol or drug abuse was longer an important predictor. Being placed in out-of-home care and being in receipt of preventive care from the municipality were associated with an increased likelihood of being the victim of violence (ORs between 1.31 and 1.78). In addition, there was an increased risk for males and being from an ethnic minority (OR = 2.5 and 1.2, respectively).

We made several separate analyses of the impact of family risk factors based on the child's developmental age (0–6, 7–13, and 14–17 years) and, in general, we did not find any significant differences. However, there was one exception with unemployment, where the adjusted ORs for the developmental periods were 1.55, 1.71, and 0.36, respectively, indicating that parental unemployment is a particularly strong risk factor for violence for disabled preschool and primary school-aged children, but not for adolescents with disabilities. Similarly to Turner, Finkelhor, et al. (2011) and Turner, Vanderminden et al. (2011), we found a strong and increasing effect of having several disabilities, with ORs increasing from 1.43 with one disability to over 1.67 for two disabilities and 1.80 for three or more disabilities (Table 4), although the last of these is not significant owing to the low number of children (5%) with three or more disabilities. Hence, the results in Table 4 indicate that having more disabilities adds a further risk of violence on top of the risk for the given disability.

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

	Unadjusted		Adjusted	
	OR	95% CI	OR	95% CI
(A) Diagnosis				
Autistic spectrum disorder	1.24	1.10–1.38	0.72	0.64–0.81
ADHD	4.33	4.06–4.61	2.17	2.03–2.32
Speech disability	2.39	2.18–2.61	1.38	1.25–1.52
Sensory disability	1.23	1.06–1.42	0.98	0.84–1.14
Epilepsy	1.24	1.08–1.42	0.82	0.71–0.95
Intellectual disability	2.04	1.74–2.38	0.94	0.80–1.11
Brain injury	2.15	2.03–2.27	1.77	1.67–1.87
Physical disability	1.45	1.34–1.56	1.36	1.26–1.48
Dyslexia	1.64	1.22–2.17	0.84	0.63–1.14
Congenital malformations	1.12	1.06–1.19	1.00	0.94–1.05
(B) Family risk factor				
Mental diagnosis	2.70	2.60–2.80	1.31	1.25–1.37
Abuse (alcohol or drugs)	2.97	2.82–3.14	0.93	0.87–0.99
Violence (perpetrator or victim)	4.81	4.64–4.99	2.76	2.65–2.87
Out-of-home care	5.44	5.16–5.73	1.78	1.67–1.90
Child preventive measures	3.34	3.20–3.48	1.31	1.25–1.38
Relationship dissolved	3.14	3.02–3.27	1.80	1.72–1.88
Teenage mother	3.70	3.37–4.05	1.39	1.26–1.52
Unemployment	2.98	2.84–3.12	1.63	1.55–1.72

Note: Adjusted odds ratios (ORs) are based on a logistic regression of an indicator variable for being exposed to violence on (A) disabilities ('Diagnosis') and (B) family risk factors, and on gender, birth year, and ethnic background.
CI, confidence interval.

4. Discussion

Using the Danish nationwide registers, we aimed to prospectively assess the relationship between specific childhood disabilities and police-reported physical violence. By means of the registers, we have precise registrations of both the disabilities and the violent acts for the full birth cohorts and for an extended number of years. The findings indicated, in line with

Table 4. Risk of being a victim of violence, based on number of disabilities (*N* = 570,351).

Number of disabilities	Unadjusted OR	95% CI	Adjusted OR	95% CI
1	1.77	1.70–1.84	1.43	1.12–1.83
2	2.56	2.39–2.75	1.67	1.02–2.72
≥ 3	2.80	2.47–3.18	1.80	0.81–4.00

Note: Odds ratios (ORs) are based on a logistic regression of an indicator variable for being exposed to violence on number of disabilities (reference group is no disabilities), diagnoses, family risk factors, gender, birth year, and ethnic background.
CI, confidence interval.

Christoffersen (2019), that children with disabilities had an overall increased risk of being victims of violent crime. However, there were important differences according to type of disability. Compared to Christoffersen (2019), we found an important decrease in the number of incidents of reported violence, from 3.5% to 2.25% from one decade to the next. This decrease is good news, as it potentially is the result of increased public knowledge about the adverse consequences of violence against children. Penal provisions for child maltreatment are continuously being more specified, cases of violence against children receive a lot of media attention, old cases going back in time are presented by historians who report on the maltreatment, adult victims come forward and tell how they, as disabled people, were exposed to physical violence in childhood, and the issue of public apology is debated for children with intellectual disabilities who were maltreated decades ago, when they lived in large institutions.

In the unadjusted models, all 10 types of disability were significantly associated with being a victim of violence. We then separated the risk factors associated with being a victim of violence from the risk factors associated with the various disabilities in a regression analysis, and found that ADHD, brain injury, speech disability, and physical disability were all associated with an increased likelihood of being a victim of violence. These associations were attenuated when adjusted for other factors. This means that the family and social risk factors have an important role in the violent victimization of the child and a stronger role than the disabilities per se.

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 (Fujiura & Yamaki, 2000; Mudrick, 2002; Stein & Silver, 1999). The current study found that a parental psychopathology 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. However, we did not find the same association between parental substance abuse and risk of violence in children with disabilities as Christoffersen (2019). The unadjusted ORs showed an increased risk of almost three times, which disappeared in the adjusted analysis. A possible explanation for this difference could, however, be due to different terminologies for categorizing substance abuse.

In line with Turner, Finkelhor, et al. (2011) and Turner, Vanderminden et al. (2011), we found a strong increase in violence for children with comorbidities in disabilities. This is important knowledge for parents and caregivers in specialized institutions, that some of their children are being victimized to a higher degree than others, and therefore precautions should be established or reinforced.

According to a Danish representative study, boys are twice as often exposed to childhood physical violence as girls (Helweg-Larsen et al., 2009). Similarly, another Danish representative study found that children from ethnic minorities were more exposed to physical violence than ethnic Danes (Oldrup et al., 2016). However, we have not found any studies that investigated gender differences or ethnic minorities among children with disabilities exposed to physical violence. Our findings indicate that the same tendencies that are found in the general population also exist in children with disabilities.

Protection from violence for children and for people with disabilities is recognized by the United Nations (UN) Convention on the Rights of the Child (UN, 1989) and the UN Convention on the Rights of Persons with Disabilities (UN, 2006). Despite these legally binding, international agreements, many children continue to experience violent victimization, as this study shows. However, despite many children with disabilities continuing to be exposed to violence, the findings show that the level of reported violence is falling, and this may, in part, be a reflection of the Danish justice system and the multidisciplinary teams recognizing that these acts of violence against vulnerable children are occurring and helping to bring justice to the victims.

Indeed, the authorities, politicians, and every citizen have a special responsibility to react when these rights are violated. From a prophylactic public health perspective (Caplan, 1964), primary prevention is about raising public awareness through media campaigns and education to the general population that physical violence towards these children happens relatively often and that every citizen should be aware of the existence of this criminal victimization. In particular, the targets for the increasing awareness initiatives should be parents and staff in schools, leisure-time arrangements (e.g. sports), and treatment facilities for children with disabilities.

Secondary prevention, according to Caplan (1964), is about offering the victims an early and adequate crisis intervention when they have been assaulted. This is, in principle, possible to receive in Denmark, but no information exists as to whether these interventions are offered to the victims. The next step is tertiary intervention, for example, therapeutic treatments for those who suffer severely from the sequelae of the violence. Again, no information is available about what services are offered to children with disabilities. A relevant and effective means to reduce violence could be to provide more public assistance to vulnerable parents who have a child with a disability. Instead of waiting for a police report,

prophylactic interventions at an early stage may be very welcome and efficient in preventing acts of physical violence, because the parents would know what to do and where to get help.

This study has several limitations. First, the Criminal Register only records violent incidents from 2001 and there is a possibility of skewness in the cohorts. The earliest cohort in our population was born in 1994 and turned 7 during 2001. As we only looked at violence for children aged 7–18 years, this would not lead to any skewness in the main outcome. If we had chosen to look at violence also for children aged 0–6 years this would have skewed the results, but as recorded violence against children below the age of 7 years is very rare, estimates would only have been affected to a limited degree.

Secondly, violence also enters the risk variable 'parental history of violence'. Hence, to the degree that the age of the parent matters for the likelihood of being the victim of a violent crime, this data limitation could affect the likelihood of having parents registered with a history of violence. To account for this, we included year of birth indicators in our regression analyses. They should account for any age gradient in the likelihood of having a parent registered as having a history of violence. It should also be kept in mind that 'parental history of violence' also includes information on whether parents were maltreated or convicted of a violent crime and, hence, victimization is only one part of that measure – the other two parts are recorded for the entire study period.

Because of the qualities of the Danish registers, these figures are considered very reliable as they include full birth cohorts and we have consecutive data for a long time period. The strengths of the registers are, however, also their weakness, as many incidents of violence are not reported owing to a lack of knowledge, opportunity, or fear of stigmatization. One must be aware that only serious cases are reported to the police and in many cases acts of violence are not considered severe enough to warrant a police report. In addition, children with disabilities does not have the cognitive or practical means to make a report, not to mention the mental capacity to report while struggling with the emotional turmoil that the violence has created in the child. Therefore, these findings may be the tip of the iceberg and the occurrence of violence may be more widespread than we are able to document. Future research should therefore include large groups of children with different disabilities who are interviewed about their exposure to physical abuse from family, caretakers, other adults, and other children, to supplement the present findings, which are based on police-reported violence.

The study findings point at four types of disability to which families and professionals should pay special attention: ADHD, brain injury, speech disability, and physical disability. In addition, when it comes to the environment of the children with disabilities, there are some situations with a particular need for prophylactic monitoring and intervention. The first is when the child receives out-of-home care, and the second is when the parents have been exposed to or committed violence. The latter leads to a recommendation for trauma-informed professionals to work with perpetrators and victims of physical violence, to break the vicious circle so that the violence will not continue in the next generation. Thirdly, when a couple with a child with disabilities gets divorced, the authorities should pay attention to this situation and offer preventive counselling. Finally, when poverty strikes and a social worker is engaged to help a family, their attention should also involve the child with disabilities and focus on how the parents can protect the child. Despite the challenges that continue to exist, it is reasonable to conclude that a considerable decrease in the extent of violence has occurred in recent years, and this gives hope for continuing improvements.

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Data availability statement

The data are available in the Danish registers for researchers who are authorized and who apply for them.

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