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ORIGINAL ARTICLE

Children's advocacy centre fails to respond to dental, mental and physical ill-health in abused children

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Abstract

Aim: Sweden´s first multidisciplinary children's advocacy centre (CAC) was founded in 2005 as a collaborative practice between child protection services, the legal system and health care in response to police-reported child abuse. CACs were introduced in the county of Skåne in 2007. The aim of the study was to describe the health of children investigated at the CAC in Lund, and to examine whether the CAC model of collaboration responded to the healthcare needs of these children.

Methods: All children aged 0–17 years investigated at the CAC in 2015 were included in this retrospective study. We reviewed the CAC files and the children's medical and dental records from one year prior to, until one year after their assessment at the CAC.

Results: Our review of the medical and dental records ($n = 298$) showed a high prevalence of mental, dental and physical ill-health. After the CAC joint meeting, only 1% of the children were referred for a medical examination and 4% for a focused forensic evaluation.

Conclusion: Our study demonstrates limitations in the CAC process in responding to extensive health issues of the young victims of crime. We suggest mental, dental and physical health assessments to be statutory in CACs.

KEYWORDS
children's advocacy centre, core standards of outcome variables, forensic evaluation, healthcare needs, medical examination

1 | INTRODUCTION

In 1979, Sweden introduced an amendment in The Parental Code Act which prohibits parents from using physical punishment against a child. All Swedish professionals who have reason to suspect child abuse and neglect are legally obligated to report to child protective services (CPS). The UN Convention on the Rights of the Child (UNCRC) entered into force in Sweden in 1990 and became statutory in January 2020. Article 24 of the UNCRC states that children have the right to the best possible health, access to health care and rehabilitation. Promotion of good health is enshrined in the Swedish Health Care Act and Dental Care Act, respectively.[1,2]

Abbreviations: ADD, Attention-deficit disorder; ADHD, Attention-deficit hyperactivity disorder; CAC, Children's advocacy centre; CAMHS, Child and adolescent mental health services; CHS, Child health services; CPS, Child protective services; DFT, Number of decayed and filled permanent teeth; dft, Number of decayed and filled primary teeth; DT, Number of decayed permanent teeth; dt, Number of decayed primary teeth; ED, Emergency department; ENT, Ear, nose and throat; GA, General anaesthesia; PDS, Public dental care system; PP, Private dental care provider; PTSD, Post-traumatic stress disorder; SPD, Specialist in paediatric dentistry; UNCRC, The UN convention on the rights of the child; WHO, World Health Organization.

The adverse physical, psychological and economic impacts of child abuse are well established.[3–5] Chronic medical conditions and neuropsychiatric disorders are more abundant among abused children.[6] Children in foster care are at particularly high risk of lifestyle related health issues.[7,8]

To reduce the fragmentation of investigative and therapeutic services for abused children, multidisciplinary children's advocacy centres (CACs) were created. The first multidisciplinary CAC was established in 1985 in Huntsville, USA, and the model quickly spread across the world. Today, there are over 950 CACs in 34 countries. Currently, there are 33 CACs (Barnahus in Swedish) in Sweden, the highest number in any country outside the USA. Sweden´s first CAC was founded in 2005. In 2007, the CAC in Lund was inaugurated, serving 8 of the 33 municipalities in the southernmost Swedish county of Skåne. All Swedish CACs are publicly financed.

Previous research indicates that the CAC model has contributed to improved case coordination for suspected child victims. In Sweden, as well as in other comparable countries, the focus of the CAC procedure has so far been on case prosecution, not on health issues. Recent investigations have noted that the effects of the CAC model on child-centred outcome have not been adequately studied.[9–11] Between 2007 and 2018, Swedish CACs were repeatedly evaluated. All evaluations showed a considerable variance in standards and in the number of agencies involved. Of the 23 CACs that existed in 2013, only 4 were truly multidisciplinary with representatives from criminal justice, law enforcement, CPS and physical and mental health.[12] In 2018, just over half of the 33 Swedish CACs had medical input in the assessment procedure.[13]

A police report alleging physical or sexual abuse in a child 0–17 years of age is needed to initiate the investigative process at the Lund CAC. Representatives from the CPS, police, public prosecutor's office, paediatrics as well as child and adolescent mental health services (CAMHS) gather weekly in a multidisciplinary meeting to discuss the management of reported cases. No dental professionals currently participate in the assessment. During these meetings, the different aspects of the child's health and safeguarding needs are discussed. The prosecutor subsequently decides whether to proceed with legal action. If legal action is initiated, the police conduct a forensic interview with the child at the CAC. Health issues are identified following a review of the medical records, and further investigations and treatments are proposed by healthcare representatives. Two types of health assessments may be suggested which are as follows: a clinical medical examination performed by a paediatrician, gynaecologist or paediatric surgeon and, within the judicial preliminary investigation, a focussed forensic examination performed by a specialist in forensic medicine.

This study aims to assess medical health issues in children investigated at the Lund CAC and to examine whether the CAC model of collaboration adequately responds to the bio-psycho-social needs of these children. We hypothesised that mental, dental and physical ill-health were common in our study population. A more detailed description of the Swedish health care and dental care systems are provided in Appendix S1.

Key notes

Ill-health is not paid attention to in children's advocacy centres (CAC).

Only 1% of the 298 children were referred for a medical examination and 4% had a forensic evaluation.

We suggest CACs in Sweden put as much focus on health issues as they do on child protection and prosecution.

2 | PATIENTS AND METHODS

This retrospective study includes all children investigated at the Lund CAC in 2015. The following data points for each child were collected from the CAC's files:

- Personal identity number
- First date of multidisciplinary joint meeting
- Classification of suspected crime
- Suspected perpetrator(s)
- Whether a referral for medical examination was made
- Whether a referral for focussed forensic evaluation was made

The 10-digit personal identity number was used to trace medical and dental records from the Skåne region. Data from the records were obtained from 12 months prior to and 12 months after the CAC joint meeting in 2015. If a child was investigated more than once during the year, only the first CAC assessment was reviewed. The data searched for in the records are presented in Table 1.

The regional electronic medical record systems Melior (Siemens Healthcare Inc,), Profdoc Medical Office (CompuGroup Medical Inc,) as well as the dental records system T4 (Carestream Dental LLC,) were

TABLE 1 Data collection in the records

In medical records of CHS, primary care, community paediatrics, CAMHS and hospital-based care
Number of visits before and after joint meeting at CAC
Chronic neuropsychiatric and neurological diseases
Number of visits due to traumatic injuries
In school healthcare records
Number of visits before and after joint meeting at CAC
Mention of foster care, specific additional needs, anti-social behavior, suspicion of parental neglect or domestic violence
Referral to medical care or CAMHS
In dental care records
Non-attendance to booked visits
Information regarding untreated and treated dental caries
Referral to specialist in paediatric dentistry
Dental treatment under general anaesthesia

searched. Data were collected from child health services (CHS), primary care, hospital-based departments, municipal school health care, community paediatrics for disabled children and dental health care in the county of Skåne. Due to confidentiality restraints, data from private dental care providers (PP) were inaccessible. This limitation resulted in only dental health records from the public dental care system (PDS) being reviewed. The recruitment of the study population and the number of medical and dental records reviewed are presented in Figure 1.

2.1 | Reference groups

The county of Skåne registries provided retrospective data on the number of healthcare visits in 2015 for the reference group. The reference group was comprised of all children aged 0–17 years in Skåne (n = 249 972).[14] No reference data were available for school health data. Reference data for dental health in 2015 were available from the National Board of Health and Welfare registry for ages 3, 6 and 12 years.[15]

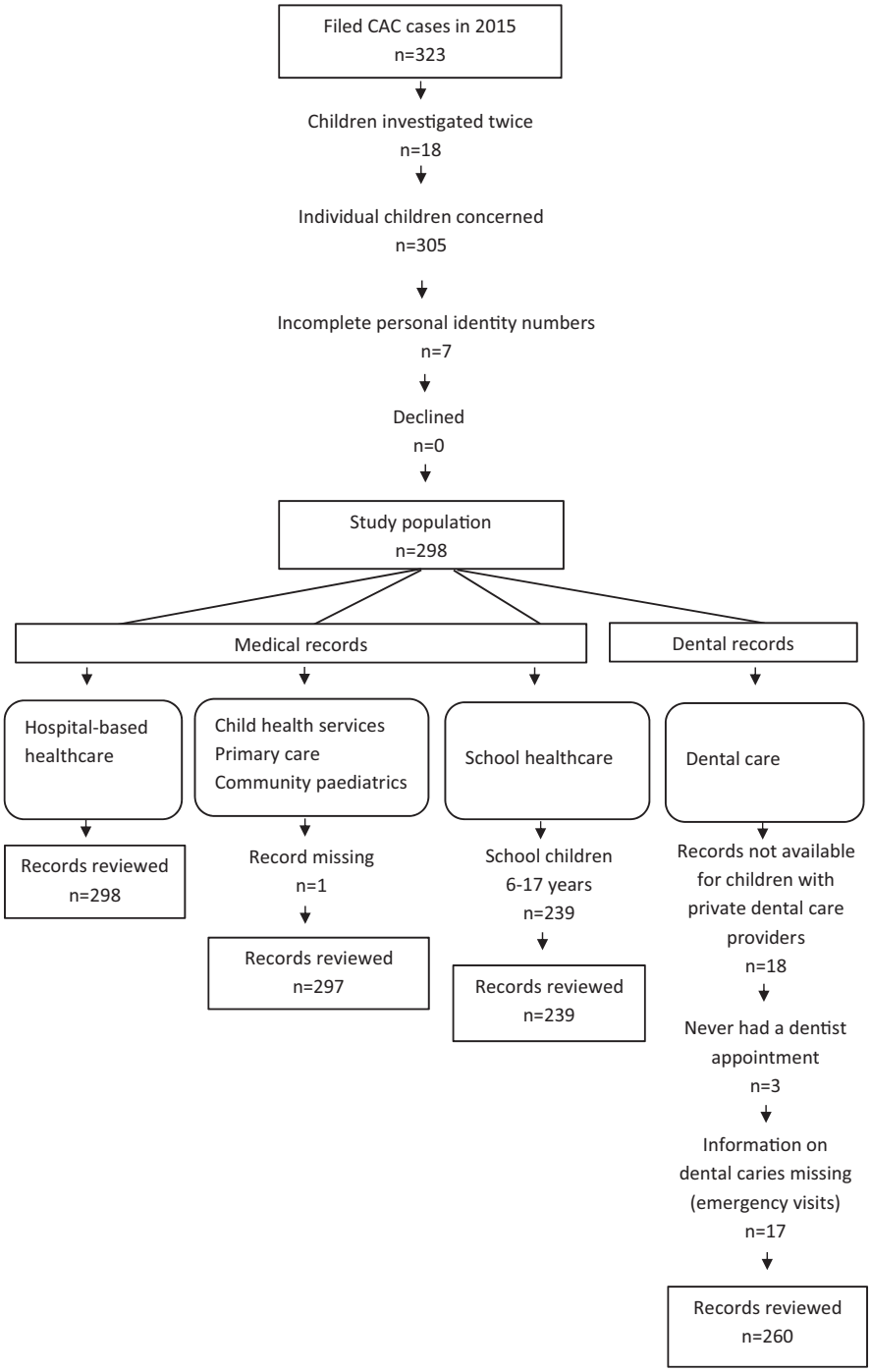

FIGURE 1 Flow chart of the study population and number of records reviewed

2.2 | Data analysis

Data collation and analysis was carried out using Microsoft Excel® and IBM SPSS Statistics 23.0 (SPSS Inc.,). In hospital-based health care, Pearson's chi-squared test was applied comparing visits in the study group and the reference group. McNemar's *t*-test was carried out when comparing the number of healthcare visits before and after joint meetings. As the compared groups are not equivalent and coincident, statistical differences are just indicative. In all analyses, a *p*-value <0.05 was considered statistically significant.

2.3 | Ethical approval

A detailed description of the study, including information about the option of non-participation, was made available to the general public on the regional healthcare Website. A waiver was obtained on the informed consent process. The reason was that every child had been involved in an event resulting in a police report, and that the legal guardian often was the suspected perpetrator. The Ethics Board of Lund approved the study on January 11, May 31, 2017, and on February 23, 2018 (references 2016/980, 2017/468 and 2018/195) respectively.

3 | RESULTS

During 2015, 323 cases of suspected child abuse were investigated by the Lund CAC. No requests to opt-out of the study were initiated by any child or legal guardian. The data searched for in the various electronic records are presented in Table 1. The characteristics of the children, the crime classifications and the number of medical examinations and forensic evaluations are outlined in Table 2. Suspected perpetrators often had close relationships with the child. The suspect was the father or stepfather in 52% and the mother or stepmother in 29% of the cases.

3.1 | Medical and forensic follow-up examinations

Review of the medical records (n = 298, Figure 1) disclosed that 3 children received a clinical examination (Table 2). Two examinations were conducted in the department of gynaecology and in the paediatric emergency department (ED), respectively, and one in primary care. Forensic evaluation was performed in 11 children (Table 2).

3.2 | Results of the medical and dental record review

3.2.1 | Child health services, primary care and community paediatrics for disabled children

The number of records reviewed were 297 (Figure 1). Data concerning the number of visits to CHS, primary care and community paediatrics are presented in Table 3.

3.2.2 | School healthcare

School health records for all school children between 6 and 17 years of age (n = 239) were reviewed (Figure 1). Results of the data collection are presented in Table 4.

3.2.3 | Hospital-based health care

Among the 298 records reviewed (Figure 1), 32 patients (11%) presented with chronic neurological conditions (Table 5). In 2014, 129 children in the CAC group sought hospital-based care on 396 occasions (mean 1.33 visits per child). In the reference group, 46% of the children made a total of 319 315 visits (mean 1.28 visits per person) in 2015. The difference in number of hospital visits between the study population and the reference group was non-significant (p = 0.361).

TABLE 2 Characteristics of the study population

Characteristics	*n*	(%)
Gender		
Female	146	(49)
Male	152	(51)
Total	298	(100)
Age (years)		
0–5	59	(20)
6–12	151	(51)
13–17	88	(29)
Total	298	(100)
Classification of crime		
Physical abuse	211	
Sexual abuse	108	
Gross violation of integrity	7	
Unlawful threats or coercion	9	
Other (purchase of sexual services, female genital mutilation, coercion to child marriage)	4	
Total	339*	
Suspected perpetrator		
Father or stepfather	155	(52)
Mother or stepmother	86	(29)
Other	57	(19)
Total	298	(100)
Medical examination		
Yes	3	(1)
No	295	(99)
Total	298	(100)
Focused forensic evaluation		
Yes	11	(4)
No	287	(96)
Total	298	(100)

*More than one in 18 children

TABLE 3 Visits to child health services, primary care and community paediatrics for 297 children

	1 year before joint meeting (2014–2015)			1 year after joint meeting (2015–2016)			Retrospective reference group (2015)
Type of health care	Children (*n*)	Visits (*n*)	Visits/child (*n*)	Children (*n*)	Visits (*n*)	Visits/child (*n*)	Visits/child (*n*)
Child health services	57	105	1.8	42	70	1.7	7.6
Primary care	183	426	2.3	175	476	2.7	3.8
Community paediatrics	13	91	7	16	94	5.9	10.2

TABLE 4 Data from school healthcare records for 239 children

Characteristics of school children	*n*	(%)
Age		
6–12 years	151	(63)
13–17 years	88	(37)
Total	239	(100)
School health visits/student		
The year before joint meeting (mean)	2.4	
The year after joint meeting (mean)	2.1	
Total	899	
Mention of riskfactors		
Foster care	16	(7)
Contact with CPS	13	(5)
Anti-social behaviour	8	(3)
Investigated at CAC	7	(3)
Sexual abuse	7	(3)
Report to CPS	6	(3)
Suspicion of domestic violence	6	(3)
Suspicion of serious parental neglect	3	(2)
Specific additional needs	0	(0)
Mention of referrals		
Primary care	6	(3)
CAMHS	3	(1)
Optician	3	(1)
Paediatrics	3	(1)
ENT	2	(2)
Ophtalmology	1	(0)

TABLE 5 Chronic neuropsychiatric and neurological conditions in 86 children

Chronic medical conditions	*n*	(%)
ADHD or ADD	33	(38)
Physical disability	23	(27)
Autism spectrum disorder	14	(16)
Intellectual disability or chronic neurological condition	9	(11)
Other neuropsychiatric disorder	7	(8)
Total	86	(100)

During the year following the CAC meeting, the study group was used as its own control. A total number of 164 children (55%) made 456 visits to any of the hospital-based departments (mean 1.53 visits per child) which is a significant increase ($p = 0.001$). During the two-year study period, 104 of the children (35%) made 157 visits due to traumatic injury. Of these, 116 took place in hospital EDs and 41 in primary care. The most frequently visited EDs were in paediatrics, ENT, orthopaedics and ophthalmology. Neuropsychiatric disorders were found in 18% of the CAC group (Table 5). In 2014, 22% of these children were in contact with CAMHS, compared to 6% in the 2015 reference group ($p < 0.001$). The year following the CAC meeting, the study group was used as its own control. Visits to CAMHS increased significantly from 65 in 2014 to 104 in 2016 ($p < 0.001$).

3.2.4 | Dental healthcare

Health data concerning tooth decay, missed appointments and referral to a specialist in paediatric dentistry (SPD) were available for 260 children (128 girls, 132 boys) followed within the public dental care system (PDS) (Figure 1, Table 6). It was not possible to retrieve data on dental trauma. Untreated tooth decay was found in 24%, and 40% of the children had decayed teeth and teeth with fillings. Furthermore, greater than 42% had a history of missing at least one dental appointment during the study period, and half of these children missed 2 appointments or more. Four children had a history of 7 missed appointments, and in 14% of all booked appointments, the patient was not brought to dental care. Ten patients were referred to a SPD (Table 6).

4 | DISCUSSION

The CAC in Lund is one of Sweden's 33 CACs.[13] Our study is the first comprehensive evaluation of the assessment of physical, dental and mental health in children investigated in a Swedish CAC. In Save, the Children's report on the 23 Swedish CACs existing in 2013, 13% of the children were offered a medical examination following a CAC procedure.[12] At Lund CAC, such interventions were scarcer. It is unclear why only 1% of the children in the study were medically evaluated, despite the presence of a paediatrician in all CAC joint meetings. In accordance with the findings of recent studies, we suggest that poor systematics in child welfare relating to health issues,

TABLE 6 Dental health in 260 children

Age (years)	Children *n* (%)	Missed appointments ≥1 *n* (%)	dt/DT ≥1 *n* (%)	dft/DFT ≥1 *n* (%)	Referral SPD *n* (%)	Dental treatment in GA *n* (%)
0–2*	6 (2)	n.d.	n.d.	n.d.	n.d.	n.d.
3–6	61 (23)	23 (38)	16 (26)	23 (38)	2 (3)	1 (1.6)
7–12	116 (45)	49 (42)	22 (19)	34 (29)	5 (4)	1 (0.9)
13–17	77 (30)	36 (47)	25 (32)	48 (62)	3 (4)	0 (0)
Total	260 (100)	108 (42)	63 (24)	105 (40)	10 (4)	2 (0.8)

Abbreviations: *dft*: number of decayed and filled primary teeth; *dt*: number of decayed primary teeth; *DFT*: number of decayed and filled permanent teeth; *DT*: number of decayed permanent teeth. For children 0–6 years, dft and dt were calculated, and for children 7 years and older, DFT and DT. Type of teeth present: 0–2 years not all primary teeth erupted, 3–6 years full primary dentition, 7–12 years mixed dentition with both primary and permanent teeth and 13–17 years permanent teeth.

*Children below 2 years of age are not routinely screened.

as well as a lack of CAC routines for medical examination may be explanations.[16,17] We also propose that CPS, who are responsible for referring children to medical examinations, need further training on the impact of child abuse on health.[7]

Only 4% of the children were assessed by a specialist in forensic medicine, possibly indicating a lack of understanding among representatives from criminal justice and law enforcement of the importance to the child of a timely and accurate forensic medical evaluation.[18]

The lifelong effects of early childhood adversity and toxic stress are well known.[3] Our finding that a large proportion of the study population had been in contact with CAMHS is in agreement with previous studies.[19] Consistent with data reported by other investigators, neuropsychiatric disorders were a common finding in our study population.[6] The prevalence of autism spectrum disorders was 5% in our study compared to the estimated Swedish and global prevalence of 1%.[20] We found that 11% of the children had attention-deficit hyperactivity disorder (ADHD) or attention-deficit disorder (ADD), which is more than twice as many as in Swedish school children.[21] Klein et al. propose that a high prevalence of children with ADHD in children involved with CPS might be explained by the fact that other disorders, such as post-traumatic stress disorders (PTSD), anxiety disorders and attachment difficulties, can mimic the symptoms.[22]

In our study, more than a third of the children had sought medical attention for traumatic injuries of minor or major severity. There are no national reference data on traumatic events in children, but a recent study of a large population-based cohort of Swedish children and adolescents demonstrated a general pattern of increased risk for concurrent injuries with most psychiatric diagnoses.[23]

Early identification of physical child abuse by healthcare professionals is essential to prevent further maltreatment and in the worst-case scenario, death. According to King et. al investigating homicide cases in children younger than 10 years, 19% were in contact with the healthcare system within a month before their death.[24]

Previous studies have pointed out that other types of child abuse are frequently found in neglected children and that neglect is at least as damaging as physical or sexual abuse in the long term.[5,25] In medical neglect, children are often not brought to preventive health care and dental care. The children of our study had fewer visits to CHS and community paediatrics for disabled children compared to the reference group (Table 3). Children investigated at the CAC had poorer dental health compared with the Swedish paediatric population.[26] There were too few children per age group in the study sample to enable appropriate statistical comparisons. Single studies have reported that approximately 35% of children seek dental care due to dental traumas before the age of 16.[27] There are no national registries for traumatic injuries to the teeth.

In our study, the proportion of children referred to SPD was high, almost 4% compared with previous reports of 1% in Swedish children.[28] Even though many children in our study population had extensive dental care needs, the proportion of booked dental appointments where the child was not brought was considerably higher (42%) compared to other studies.[29,30] Data on caries were missing for 17 children, and the reason for this is unclear. Screening for caries is only performed during regular, scheduled visits, but not at emergency visits. Several of the children had moved and changed dental care providers on many occasions. We propose further research to clarify if above average geographical mobility is a potential indicator of medical neglect.

There are various barriers to collaboration within Swedish CACs. Healthcare providers use incompatible electronic medical record systems, and strict confidentiality exists between different agencies. We believe that technical issues along with rules of confidentiality are major obstacles for effective management of health issues. An example from our study is that school health personnel were not systematically informed about the CAC procedure. School health professionals are in a powerful position to respond to children's welfare needs and safeguarding concerns. A mention of ongoing CAC investigation was present in school health records for only 3% of the children, and the mean number of school health visits was lower the year following the CAC meeting compared with the year before (Table 4). This suggests that school children did not receive the health-promoting interventions they were entitled to. We believe that increased transparency and improved inter-agency communication are needed to ensure these children good health care on equal terms.

Due to the retrospective study design, the available data were limited to pre-existing documentation, and thus, the retrospective reference groups could not be stratified by age. Nevertheless, the results obtained clearly demonstrate a large unmet need for healthcare interventions in children investigated at the Lund CAC.

We recommend CACs in Sweden to embrace health issues on the same terms as interventions for child protection and prosecution and suggest mental, dental and physical health assessments to be statutory in CACs. We propose the same method of documentation in all Swedish CACs, and a national core register with a child-centred, not process oriented, focus. Annual systematic audit and quality assessment of standardised health-related variables would enable better future evaluations and research on health in abused children. We hope that the findings from our study will help in this process.

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CONFLICTS OF INTERESTS

The authors have no conflict of interest to declare.

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