

Child sexual abuse as an etiological factor of overweight and eating disorders — considerations for primary health care providers

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ABSTRACT

Despite the recognition of the clinical importance of child sexual abuse, primary health care providers are often not adequately prepared to perform medical evaluations and diagnose child sexual maltreatment.

Paper presents basic symptoms and signs of CSA, which may suggest the need for further patient's diagnosis and referral. Since the great majority of sexually abused children do not have any abnormal physical findings, special attention is paid to the silent warning signs of CSA, such as changes in attitude towards own body and eating habits. Numerous studies suggest that victims of CSA may develop obesity or eating disorders of various forms and intensities.

Key words: child sexual abuse, overweight, eating disorders, primary care physician

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INTRODUCTION

Child sexual abuse (CSA) is defined as the use of children for sexual stimulation of adults or older adolescents. A wide range of contact and noncontact activities is included in CSA. Contact abuse can include any activity from sexualized kissing, fondling, masturbation, digital or object penetration of the vagina or anus, to genital, oral-genital, and anal-genital contacts. Noncontact activities include inappropriate observation of child (e.g. during bath or in a rest room), exhibitionism, pornography and involvement of child in prostitution [1–3].

As it has been emphasized many times, victims of CSA require a specific, emphatic and professional specialist approach. During the last few decades, health care experts have paid special attention to the issue of CSA, which has been expressed in a series of WHO reports and elaborations concerning this topic [1, 4, 5].

The review of 38 articles, reporting CSA from 21 different countries, revealed that the most frequent prevalence rate was below 10% for males and between 10 and 20% for

females. Almost 30% of studies reported CSA prevalence rates above 30% [6].

Despite the recognition of the clinical importance of CSA, some primary health care providers are not adequately prepared to diagnose child sexual maltreatment [7]. At the same time, these are primary health providers (such as general practitioners, pediatricians and dentists) who are in constant contact with patients and have a unique opportunity to offer essential support to the child and family [2].

As reminded by experts from Department of Gender and Women's Health [5] most communities have their own sets of laws for professionals working with children governing how, and to whom, a report regarding suspicion of CSA should be made. Reporting is usually mandatory and a failure to report CSA is considered a crime [2, 4, 5]. However, the study by Menoch et al revealed insufficient medical knowledge of child abuse in residents' and practicing physicians' highlighting the need for increased education in child maltreatment [7].

While physical signs of CSA are shocking due to the marks they leave, not all child abuse is as obvious. The great

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majority (> 90%) of sexually abused children do not have any abnormal physical findings [2, 5]. Thus, there has been increased interest in silent warning signs of child's maltreatment, such as changes in child's behavior. Numerous studies have considered a link between a reported history of sexual abuse and obesity or eating disorders of various forms and intensities [8–19].

The aim of the present paper is to review the most relevant aspects of CSA, including its relation with abnormal eating habits, in addition to the suggested role of primary health care providers for identification and management of these conditions.

IDENTIFICATION OF CSA

The primary health providers must uphold their ethical and legal responsibility to record and report every incidence of CSA. If there is only suspicion of abuse and doubt exists whether to inform or not inform law enforcement authorities, consultation and reporting to social services (such as local child protection agency) is recommended. It may help save a child from further abuse [4–5].

General practitioners should be familiar with physical signs and symptoms of CSA, such as:

- unexplained bruises, redness, swelling or lacerations in genital, vaginal, anal area, on the breasts or on the neck;
- signs of ligature marks on the wrists, defensive injuries on the forearms;
- anal or vaginal soreness or excessive itching;
- sexually-transmitted disease, an unusual discharge;
- blood in urine or faeces;
- pregnancy [2, 5].

With regard to dental profession, visible oral signs of this type of abuse are considered rare [2, 20, 21]. In cases of oral

gonorrhoea or human papillomavirus warts, injuries or petechiae of the palate, oro-genital contact might be suspected [22]. Bite marks or suction-type bruises in an ovoid pattern may be also related with CSA [20–22].

However, as reminded above, sexual abuse doesn't always involve the use of violence or even body contact. It can just involve exposing a child to sexual situations or material [1, 4]. Besides it often occurs at the hands of someone the child knows e.g. close relatives. The shame makes it very difficult for children to come forward. Thus, aside from the physical damage that sexual abuse can cause, the emotional and psychological components are even more powerful and long term [3, 5].

A directory of possible child's psychological and behavioral symptoms related to CSA has been compiled in a Table 1 [3, 5].

All the following changes in child's behavior are indicators, not proof that sexual assault may have taken place. There may be many reasons for such symptoms, but combination of worrying signs suggest the need for further investigation of the problem. In case of CSA, the interview with the child and caregivers is typically the most valuable component of the medical evaluation. Diagnosis is often based on the statements of the child obtained by a non-suggestive, sympathetic questioning by a physician. Detailed clinical history that documents all relevant explanations from the caregivers in attempt to compare them with clinical findings, helps to find the truth regarding unusual physical and behavioral manifestations [2, 5].

OVERWEIGHT AND EATING DISORDERS IN PRIMARY CARE MEDICAL PRACTICE

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. In 2016,

Table 1. Child's psychological and behavioral symptoms related to CSA

Sleep disorders, nightmares, night terror
Inexplicable occurrence of abdominal pain, headache, vomiting, and nausea
Sudden changes in personality, isolation
Regressive behavior such as weepiness, bedwetting, clinging to parents, thumb/dummy sucking
Hyperactivity, difficulties with concentration, problems with learning
Depression, sadness, attempted suicide
Drug/alcohol use
Sudden anxiety towards a parent or other adult, runaways
Resistance to routine hygienic procedures, toileting or removing clothes even in appropriate situations
Sudden interest in sex, provocative sexual behavior, artistic activity related to sexuality, sexual violence towards peers, intensive masturbation not adequate to the current phase of psychosexual development, sex-related language
Self-mutilation e.g. cutting, burning
Significant changes in eating habit: eating disorders or obesity

CSA — child sexual abuse

more than 40 million children under the age of 5 were obese or overweight [23, 25].

Diagnosis and classification of overweight and obesity in adults is based on body mass index (BMI), calculated as a weight in kilograms divided by the square of a height in meters (kg/m^2). According to WHO overweight corresponds to a BMI higher than or equal to 25, while obesity to a BMI higher than or equal to 30. In children under 5 years of age overweight and obesity are diagnosed if weight-for-height proportion is higher than 2 standard deviations and 3 standard deviations above WHO growth standard median, respectively. For children aged 5–19 years overweight and obesity correspond to BMI-for-age greater than 1 standard deviation and 2 standard deviations above the WHO growth reference median, respectively [24].

Childhood obesity is associated with a higher chance of fractures and future disability, breathing difficulties, cardiovascular diseases, insulin resistance, and psychological effects. Thus, prevention of obesity is one of the priority health promotion actions of WHO [24, 26].

As far as eating disorders are concerned, three types of conditions have been recently etiologically linked to the childhood trauma: Binge-Eating Disorder [BED], Anorexia Nervosa [AN] and Bulimia Nervosa [BN] [8–15].

The prevalence rates of eating disorders vary widely depending on the type of the disease and gender of the patients and country. Females are generally more frequently affected than males and prevalence rates much higher in developed than developing countries. Recent literature review suggests that AN may affect up to 4.3% of women and 0.3% men, BED 3.6% of females and 2.1% of males, while BN about 1% of young females and 0.5% of young men [27].

According to the ICD-10, the main criteria for a diagnosis of AN include: body weight maintained at least 15% below that expected, or BMI of 17.5 or less, the self-induced weight loss (by avoidance of eating and one or more of the following: self-induced vomiting or purging, excessive exercise, use of appetite suppressants and/or diuretics), a distorted body image and amenorrhoea in women or a loss of sexual potency in men [28, 29].

The majority (95%) of patients with AN are females. Risk factors include participation in activities valuing thinness (e.g. ballet, modeling) and a family history of eating disorder. Development of AN might be also precipitated by a stressful situation. Since patients usually do not present with a chief complaint of eating disorder, the primary care physician must be alert to that possibility, particularly in young women.

During the initial period of AN, weight loss is the main symptom. Unfortunately, the initial signs often remain concealed and the disorder becomes noticeable in its highly advanced stage when it is much more difficult to treat it.

When the disease is progressing, the body of an affected person becomes unnaturally slim and facial features sharper. The skin becomes excessively dry and lanugo hair may be present. Girls experience stoppage of menstrual periods, inhibited growth, and hair loss. These changes are accompanied by increased irritability or depression [30–32].

Oral signs of anorectic patients who do not purge are not specific and are related to shortage of micro- and macronutrients and decreased resistance to infection. Xerostomia and loss of taste, atrophic inflammation of the oral mucosa, angular cheilitis and oral candidiasis have been reported [33].

BN may be more difficult to detect than AN. Currently, the following ICD-10 diagnostic criteria are required for a diagnosis of BN:

- persistent preoccupation with eating and a strong sense of compulsion to eat;
- compensatory behavior in order to prevent weight gain by vomiting, purging, starving and other methods;
- a morbid dread of fatness.

On physical examination, the bulimic patients may look healthy. Sometimes oral pathologies are the only manifestation of the disorder and therefore dental practitioners play important role in the diagnosis of the disease. Acidification of the oral environment contributes to the development of enamel erosions affecting mainly palatal and lingual surfaces of the front teeth, sometimes associated with dentinal hypersensitivity. Other physical examination signs of BN include parotid gland hypertrophy, hoarse voice, hypertrophy of the knuckles from inducing vomiting, and rectal prolapse or bleeding due to chronic constipation or self-induced diarrhea [32].

AN and BN may lead to the development of multi-organ complications which include hypotension, abnormal heart rhythm, anemia, dehydration, electrolyte imbalance, and damage to the lining of the gastrointestinal tract [30].

With regard to BED, contrary to AN and BN, it is not associated with the compensatory behaviours such as self-induced vomiting or starving. This is why it usually leads to overweight. According to the American Psychiatric Association criteria, BED is characterised by: recurrent episodes of binge eating (on average, once a week for three months), during which in a discrete period of time patient consumes an amount of food that is definitely larger than most people would eat under similar circumstances and which is accompanied by a lack of control over eating. The binge eating episodes are associated with three or more of the following: eating large amounts of food when not feeling hungry, eating more rapidly than normal, until feeling uncomfortably full, eating alone because of embarrassment, feeling guilty afterward [29].

The role of the primary care clinicians is to identify the patients with disordered weight or eating and refer them to the specialist for further comprehensive evaluation and treatment. As suggested by Walsh et al when the clinician suspects that the patient suffers from AN, two questions may be helpful in determining abnormal eating habits: "What did you eat yesterday?" and "Do you ever binge eat or use laxatives, diuretics, or diet pills?". Attitude toward body weight may be evaluated by asking: "Do you think you are too thin?". Screening questions which have been shown to be useful for the detection of BN and BED are: "Do you ever eat in secret?", "How satisfied are you with your eating habits?", "Do you make yourself sick because you feel uncomfortably full?", "Do you worry you have lost control over how much you eat?", "Would you say food dominates your life?".

In cases of patients with general health seriously affected, primary health providers should also be able to determine the need of hospitalization and manage life-threatening medical complications of the disease. Patients should be screened for the risk of suicide and compulsory treatment of cases with a very low BMI must be considered [30].

ABNORMAL EATING HABITS AS A CONSEQUENCE OF SEXUAL ABUSE

The issue of sexual childhood trauma being an important risk factor for overweight and eating disorders has been widely discussed in the literature. Reasons for development of abnormal eating habits are complex and differ among individuals and populations. Abused children may turn to food to relieve a wide range of different states of stress and tension that have nothing to do with hunger. Eating becomes a way to manage trauma, block unwanted feelings and emotions or express hatred to own body. More severe trauma seems to cause more serious psychological effects [9, 11, 13]. There is also a theory that eating plays protective function, since obese children become less sexually attractive for abuser [8].

A prospective birth cohort study involving a group of 2461 young adults, revealed that young women's BMI and the prevalence of overweight at age 21 were greater in those who experienced penetrative CSA before the age of 16. There was no association between non-penetrative CSA and BMI in women and no association between either category of CSA and BMI in men. Authors concluded that this gender difference may reflect differences between women and men in the relationship between psychological trauma and body image [18]. These findings suggest that the possible experience of CSA need to be addressed during diagnosis and therapy of female patients mainly. Similarly, several other studies indicate that femininity seems to be more associated with body dissatisfaction and in turn with pathological eating behaviors, while masculinity appears

to be a protective factor [31]. At the same time, Chandy et al demonstrated that CSA may impact girl's behaviors and feelings in different ways than their male counterparts. For female adolescents, CSA has been associated with depression, disordered eating and low self-esteem, while males with a history of CSA were more likely to present with externalizing behaviors such as drug use, criminal activity and sexual risk taking [32].

In another prospective study by Bentley and Widom childhood physical abuse predicted significantly higher BMI scores in adulthood, while childhood sexual abuse and neglect were not significant predictors of adult BMI scores. However, in this study sexual abuse group was relatively small (only 54 subjects) and this may have contributed to the lack of significance through limited power [17].

Interestingly, Goedecke et al showed that ethnicity altered the relationship between CSA and BMI status, which may possibly be explained by ethnic differences in body image and perceptions regarding body size. Consequently white girls who are sexually abused may become obese, in order to be considered less attractive. In contrast to white women, black women in South Africa regard a larger BMI as attractive, showing greater wealth and dignity, while being lean as being less beautiful, and associated with having HIV. Thus being lean might protect black women against sexual abusers [19].

It has also been postulated that the hormonal responses to increased levels of stress may lead directly to obesity. Björntorp suggested that psychosocial stress may lead to increased activity along the hypothalamic-pituitary-adrenal axis, characterized by increased secretion of cortisol which results in visceral obesity [35]. Midei et al in a sample of 311 black and white women in the USA showed that obesity was related to physical and sexual abuse. The results of the study suggest that abused/neglected women tend to have greater anger and lower levels of sex hormone-binding globulin, which are associated with adiposity in mid-life [16].

Similar mechanisms might be responsible for eating disorders observed in patients with the history of CSA. Some survivors of sexual abuse struggle to become very slim in an attempt to deny own sexuality. Other keep an obsessive diet, starve, or purge to make their bodies "perfect" to feel more powerful, invulnerable and recover shattered self-esteem. Some eating disorder patients feel guilty for having sexual contact with their abuser, believing they could have prevented it. They keep their problems in secret and then distract and anesthetize themselves by emotional eating. Binge eating, purging and starving in the act of self-punishment help to eliminate a sense of guilt [9, 11].

Although many clinicians reported the link between CSA and eating disorders, research evidence has been equivocal in supporting that link. Comparison of the studies assessing

Authors	Subjects	Abuse measure	Comparison groups	Abuse rates
Hall et al. [15]	158 patients admitted to eating-disorder unit	Interview	72 AN and BN patients, 86 patients with other type of eating disorder	50% of AN and BN patients versus 28% of patients with other disorder ($p < 0.01$)
Carter et al. [10]	77 AN patients admitted to eating-disorder unit	Interview	31 the binge-purge type of AN patients, 46 the restricting subtype of AN patients	65% of the binge-purge AN versus 37% of the restricting AN ($p < 0.02$)
Rayworth et al. [11]	617 women enrolled in Harvard Study of Moods and Cycles	Self-administered questionnaire	515 women without symptoms of eating disorder, 102 with any symptoms of eating disorder	18.7% of patients without eating disorder and 29.4% of patients with any symptoms of eating disorder ($p > 0.05$, NS)
Ackard et al. [12]	6728 adolescents enrolled in Commonwealth Fund Survey of the Health of Adolescent Girls and Boys	Self-administered questionnaire	2839 girls and 3204 boys with binge-purge behaviors, 436 and 244 boys without binge-purge behaviors	8.4% of girls with binge-purge behaviors versus 3.5% without binge-purge behaviors ($p < 0.0001$), 5.2% of boys with binge-purge behaviors versus 1.2% of boys without binge-purge behaviors ($p < 0.0001$)
Deep et al. [13]	73 ED women from inpatient and outpatient ED program and 44 women with no history of ED	Interview	26 patients with restrictive type of AN, 20 BN patients with the history of substance dependence (BN + SDD), 27 BN patients without history of substance dependence (BN-SDD), 44 women from the control group	23% of AN patients versus 65% of BN + SDD patients versus 37% of BN-SDD patients versus 7% of patients from the control group ($p < 0.0001$)
Midei et al. [16]	311 women from community based study	The Childhood Trauma Questionnaire	202 patients with BMI < 30 and 109 with BMI ≥ 30	15% of patients with BMI < 30 versus 23% with BMI ≥ 30 ($p < 0.01$)
Goedecke et al. [19]	44 woman recruited by advertisement in local newspapers, community, church and university centers	The Childhood Trauma Questionnaire	8 normal weight black women, 12 normal weight white women, 9 obese black women, 15 obese white women	8.6% of normal weight black women, 5.9% of normal weight white women, 5.7% of obese black women, 8.4% of obese white women ($p < 0.05$ only for normal weight black versus normal weight white)

BMI — body mass index; ED — eating disorders

CSA rates is difficult, since their methodology differs widely (Tab. 2). Some studies were based on psychiatric populations admitted to eating disorders hospital units [10, 15], while other used a nationally representative population-based sample of adolescents [12]. Comparison groups consisted of patients with different eating disorders [10, 13, 15] or healthy patients were compared to those presenting with abnormal eating behaviors [11, 12]. Besides, various measures and definitions of CSA and disordered eating might have led to different conclusions.

Results of some studies revealed that the incidence of sexual abuse in eating disordered patients was significantly higher than in healthy controls [9, 11, 13]. Conversely, according to the review by Connors and Morse sexual abuse has been reported in 30% of women with eating disorder, the number which is relatively comparable to the rate of CSA in general population. The authors conclude that CSA is neither necessary nor sufficient for the development of an eating disorder, however, in a number of cases, it may

be an important etiological factor. They mention direct association between both phenomena when patient is trying to become less sexually attractive for the abuser or eating becomes a traumatic memory of forced oral sex, as well as most common and complex mechanisms responsible for development of eating disorder such as turning to food or other impulsive behaviors in attempt to manage traumatic experiences and improve self-esteem [8].

Some studies found that sexual abuse was more prevalent among subjects with the presence of bulimic symptomatology as compared to subjects with restricting-type of AN and Waller suggested that sexual abuse per se may not cause eating disorders, but may determine the nature of those disorders when they have been prompted by other factors [14].

A study by Ackard et al on a representative sample of over 6000 adolescents reported that girls who were both physically and sexually abused were more than 4 times as likely to engage in binge-purge behavior [12]. Similarly,

the study of Carter et al revealed that patients with AN who reported a history of sexual abuse were more likely to engage in purging behaviors (i.e. self-induced vomiting or laxative use) as compared to patients without a history of sexual abuse. The possible explanation is that purging behaviors may help to cope with negative emotional effects of abuse [10].

As noted by Hall et al, it is essential that sexual issues be addressed early during the treatment of patients with eating disorders. Once disclosure occurs, therapy becomes more effective. Patients no longer need to deny their sexuality or punish themselves. However, disclosure is often difficult during visits in outpatient clinics where the patient is accompanied by the family members. Apart from rape that is revealed early in the course of treatment, less severe cases of CSA are usually not disclosed until the later stages of therapy. Thus, the role of primary care providers is to be alert to any psychiatric disorders demanding urgent referral to specialist clinic rather than investigation aimed at discovery of potential relation of eating disorder with CSA [15].

CONCLUSIONS

Victims of childhood sex crimes may consult doctors or psychologists after various periods following the trauma to cope with posttraumatic stress disorder. Some of them never intentionally talk to specialists and the problem is discovered by coincidence, e.g. during medical check-up. Thus, primary health care physicians play important role in the identification of the crime, which facilitates commencement of therapeutic activities and legal proceedings [7].

The aim of this review was to evaluate the general approach of the scientific literature toward the topic of the relation of CSA and disordered eating or weight. Since reported rates of abuse in different populations vary widely, further study is needed to answer the question of whether sexual abuse is etiologically significant in a majority of cases of eating disorders and what is the exact nature of association between both phenomena in various groups of patients.

Despite all the questions that should be addressed in future research studies, CSA appears to be one of the risk factors of both obesity and eating disorders. Consequently, as suggested by Hall et al the possibility of sexual abuse must be assessed and the results included in a comprehensive therapy for patients with disordered eating or weight [16]. This trauma-informed approach seems to be particularly important for female victims of CSA, who tend to develop poor self-esteem and disordered eating more frequently than men.

From the primary care perspective, general practitioners, pediatricians and dentists should be familiar with signs and symptoms of CSA and abnormal eating behaviors, since

both phenomena can be encountered in a large number of patients. Early diagnosis increases patient's chance for recovery.

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