Psychiatric state of college students with a history of childhood sexual abuse

Yan-Ping Sun, Bei Zhang, Zhao-Ju Dong, Ming-Ji Yi, Dian-Feng Sun, Shou-Sen Shi

Binzhou, China

Background: **Childhood sexual abuse (CSA) seriously influences children's psychological status. This study aimed to investigate the relationship between CSA and the psychiatric disorders.**

Methods: **An anonymous and retrospective questionnaire survey was carried out in 1307 college students (aged 18-25 years; 701 females, 606 males) to investigate the participants' CSA experience by means of a complete random sampling method. The Symptom Check-List-90 (SCL-90) test was used to study the victims' psychiatric aspects.**

Results: **22.11% (155/701) of the female students and 14.69% (89/606) of the male students experienced physical and/or non-physical contact CSA before age 18, with a significant difference between female and male ($P<0.05$). And 11.43% (80/701) of the female students and 7.26% (44/606) of the male students experienced physical contact CSA ($P<0.05$). Most abusers were male and young people, and only a few of them used violence. 78.7% of the females experienced non-physical contact CSA from strangers, while 71.3% experienced physical contact CSA from acquaintances. 89.9% of the male victims knew the abusers before. Females were more likely than males to experience physical contact CSA from members of the family circles. The CSA incidence increased with age in females, while 54.7% of the male victims experienced CSA from 12 to 16 years. The students who experienced CSA had higher SCL-90 scores than those who did not in somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. The more serious the CSA experience was, the higher SCL-90 scores of the psychiatric disorders would be.**

Conclusions: **CSA is not uncommon in adolescents. Girls are more likely to experience CSA than boys. About half of the abusers are the victims' close relatives, neighbors and teachers; most abusers were male. Personal experience of CSA may seriously affect the victims' psychological health.**

World J Pediatr 2008;4(4):289-294

Key words: **childhood;**
psychiatric state;
sexual abuse

Author Affiliations: Diagnostics Teaching and Research Office, Clinical Institute, Binzhou Medical University, Binzhou 256603, China (Sun YP, Zhang B); Health Statistics Teaching and Research Office, Binzhou Medical College, Binzhou 256603, China (Dong ZJ); Department of Child Health Care, The Affiliated Hospital of Qingdao University, School of Medicine, Qingdao 266003, China (Yi MJ); Department of Pediatrics, Binzhou Vocational College, Binzhou 256600, China (Sun DF); Mental Health Teaching and Research Office, Binzhou Medical University, Binzhou 256603, China (Shi SS)

Corresponding Author: Yan-Ping Sun, Department of Diagnostics, Clinical Institute, Binzhou Medical University, No. 522 3rd Huanghe Road, Binzhou 256603, China (Tel: +86-13854309245; Fax: +86-543-3162505; Email: bzsyp@163.com)

Introduction

There are four types of childhood abuses,[1] i.e., physical abuse, emotional abuse, neglect and sexual abuse. And childhood sexual abuse (CSA) is one of the most serious forms. CSA is defined as the sexual activity which happens between the adult and the immature child for satisfying the adult's sexual needs. It consists of two forms: physical contact CSA, which includes stroke, kiss, genital contact and sexual intercourse and non-physical contact CSA, which includes genital exposition, watching pornographic video and adult's sexual intercourse. Since the 1980s, many studies have shown that CSA is found everywhere in the world[2-6] and has serious and prolonged impact on the victims' body and mind.[2,4,7-15] Early intervention is effective in the prevention and treatment of physical or mental injuries to the CSA victims.[14-17] Due to the traditional culture and concepts on CSA in China, few epidemiological studies have been carried out on CSA in the general population. We conducted a CSA questionnaire survey in 1307 young college students from a vocational college in May 2003. The survey was anonymous and retrospective. We analyzed and compared the incidence of CSA in male and female

college students as well as the character and influence of abusers on victims' psychological health.

Methods

Subjects

Participants were 1351 college students (630 males, 721 females, over 18 years old college students from a vocational college in Shandong Province). Complete random sampling method was used in this investigation. A total of 1307 effective respondences were included into the analysis (606 male, 701 female). The response rate was 96.7%. The mean age was 19.8± 1.20 years (range: 18 to 25 years).

Study methods

A modified questionnaire was designed according to the literatures[18-20] including 13 items such as CSA experience, forms of CSA, age of victims, times and environment of CSA, abusers' sex, age, means and relation to victims, etc. The forms of CSA in female students' questionnaire included 12 items (Table 1), the first 4 being non-physical contact CSA and the other eight being physical contact CSA. And the forms of CSA in male students questionnaire included 10 items (Table 2), the first 3 being non-physical contact CSA and the others being contact physical CSA.

Symptom Check-List-90 (SCL-90)[21] included 90 questions divided into 9 partition checklists. These checklists covered 9 aspects of human's mental disorders, such as somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, which were graded into five grades: no, mild, moderate, heavy, and serious.

The family questionnaire included 24 items such as the family structure, whether he/she was the only child or not, parents' education and health, if parents with such bad hobbies as using violence to their children, harmonious families or not, etc.

This investigation was anonymous and retrospective. The students filled in the questionnaire in their classroom. According to the agreement principle, the students were told the objective and methods of this investigation in the questionnaire's preface on the front page. And the investigation was voluntary. The questionnaire was sealed up on the spot. The privacy of participants was fully protected. The investigation had been approved by the Ethics Committee of Binzhou Medical University. Because of the specific characteristics inherent in CSA, investigative activities may cause some of the respondents to feel unhappy or have emotional problems in a short period of time. Thus before the survey we set up a psychological counseling group and left the students with our counseling telephone number in case of any further help.

Statistical analysis

The data were analyzed using SPSS 10.0 software package (version 13.0, Chicago, IL, USA). The frequency data on percentage and the normal data on means were described. Student's *t* test and the Chi-square test were used to analyze the scores of SCL-90 according to the type of the data. Also Odds Ratio (OR) values between the CSA experience and the psychological symptoms of SCL-90 were estimated. A $P<0.05$ was considered statistically significant.

Results

CSA incidence

Among the 701 female students, 155 of them experienced physical and/or non-physical contact CSA before age 18 with an incidence of 22.11%; 98 experienced once, and 57 experienced several patterns of sexual abuse including physical contact and non-physical contact CSA. Eighty (11.41%) of the 701 students experienced physical contact CSA (Table 1).

Eighty-nine of the 606 male students experienced one or more physical contact and/or non-physical contact CSA, with an incidence of 14.69%. Fifty-two of the 89 experienced one kind of sexual abuse once, 37 experienced several kinds of sexual abuse including physical contact and/or non-physical contact CSA. 7.26% (44/606) of the male students experienced physical contact CSA, with a significant difference from female students ($\chi^2=11.80$, $P<0.05$) (Table 2).

Incidence of CSA in different respondents

The incidence of CSA was related to the characteristics of the respondents, such as the gender, the place of residence, the structure of the family, the education level of their parents, and whether the victim was the only child in the family (Table 3).

Age of CSA victims

Because the survey was retrospective and sexual abuses happened at the early age of the students, the victims usually could not answer the exact time. So we divided their age into five age periods.

A total of 236 victims (150 female and 86 male) gave their exact age of experiencing CSA. Table 4 shows the first time when the most serious sexual abuse happened in these students. With the increasing age, CSA incidence tended to increase in female students (results of tendency test: $\chi^2=33.5$, $P<0.001$), while

Table 1. Incidence of childhood sexual abuse (CSA) in 701 female students

Forms of CSA		The CSA victims (*n*)	The incidence of CSA in female students (%) (*n*=701)	The proportion of the female victims (%) (*n*=155)
Non-physical contact CSA	The sexual invader exposed his genitals in front of you	47	6.70	30.32
	The sexual invader played his genitals in front of you	14	2.00	9.03
	The sexual invader peeped your breast or genitals	11	1.57	7.10
	The sexual invader made you watch pornographic book or images	3	0.43	1.94
Physical contact CSA	The sexual invader touched or stroked your breast or genitals	31	4.42	20.00
	The sexual invader forced you to touch his genitals	4	0.57	2.58
	The sexual invader intentionally rubbed his genitals with your body	9	1.28	5.81
	The sexual invader touched your genitals with his mouth	2	0.29	1.29
	The sexual invader forced you to touch his genitals with your mouth	0	0.00	0.00
	The sexual invader placed foreign matter in your vagina	0	0.00	0.00
	The sexual invader attempted genital sexual intercourse or anal sexual intercourse	26	3.71	16.77
	The sexual invader forced you for genital sexual intercourse or anal sexual intercourse	8	1.14	5.16
Total		155	22.11	100.00

Table 2. Incidence of childhood sexual abuse (CSA) in 606 male students

Forms of CSA		The CSA victims (*n*)	The incidence of CSA in male students (%) (*n*=606)	The proportion of the male victim (%) (*n*=89)
Non-physical contact CSA	The sexual invader played his genitals in front of you	18	2.97	20.22
	The sexual invader made you watch pornographic book or images	25	4.13	28.10
	The sexual invader forced you to watch others' sexual intercourse	2	0.33	2.25
Physical contact CSA	The sexual invader touched your genitals	18	2.97	20.22
	The sexual invader forced you to touch his genitals	5	0.83	5.62
	The sexual invader intentionally rubbed his genitals with your body	5	0.83	5.62
	The sexual invader touched your genitals with his mouth	2	0.33	2.25
	The sexual invader forced you to touch his genitals with your mouth	2	0.33	2.25
	The sexual invader attempted genital or anal sexual intercourse	9	1.49	10.11
	The sexual invader forced you for genital or anal sexual intercourse	3	0.50	3.37
Total		89	14.69	100.00

Table 3. Incidence of childhood sexual abuse (CSA) in different types of respondents

Variables	Number of CSA^+ (%)	Number of CSA^-	Total	OR (95%CI)	*P*
Sex					
Female	155 (22.11)	546	701	1.64 (1.58-1.72)	<0.05
Male	89 (14.69)	517	606		
The only child or not					
Yes	64 (18.66)	279	343	1.00 (0.94-1.06)	>0.05
No	180 (18.67)	783	963		
Residence before entering university					
Village	150 (17.52)	706	856	1.24 (0.92-1.68)	>0.05
City	94 (20.84)	357	451		
Family structure					
Single-parent or remarriage family	16 (36.36)	28	44	2.59 (1.41-4.76)	<0.05
Harmonious family	228 (21.45)	1035	1263		
Education of the father					
Junior high school and below	124 (22.10)	437	561	1.48 (1.11-1.97)	<0.05
High school and above	120 (16.09)	626	746		
Education of the mother					
Junior high school and below	169 (18.84)	728	897	1.03 (0.65-1.65)	>0.05
High school and above	75 (18.29)	334	409		

CSA^+: with CSA experience; CSA^-: without CSA experience.

Table 4. Incidence of childhood sexual abuse (CSA) at different ages and the age distribution in 236 victims

Age (year)	Female (n=696)		Male (n=603)	
	CSA$^+$ (n)	Incidence (%)	CSA$^+$ (n)	Incidence (%)
4-6	13	1.9	8	1.3
7-12	41	5.9	14	2.3
13-14	25	3.6	13	2.2
15-16	30	4.3	34	5.6
17-18	41	5.9	17	2.8
Total	150	21.6	86	14.3

CSA$^+$: with CSA experience.

54.7% of the male students experienced the first CSA from age 12 to 16.

Characteristics of abusers

Most abusers were male and young and a few of them used violence. 78.7% of females had non-physical contact CSA experience from strangers, while 71.3% had physical contact CSA experience from acquaintances. 89.9% of the male victims knew the abusers before. We found that females were more likely to experience physical contact CSA from relatives than males (χ^2=4.885, P<0.05) (Tables 5, 6).

Twelve of the female abusers were found to have physical contact CSA to the male victims (Table 6). Among them, 3 abusers touched the genitals of the victims, 2 of them forced the victims to touch their genitals, 5 attempted to carry out genital or anal sexual intercourse, 2 forced the victims for genital or anal sexual intercourse. All the 12 abusers were young females, and one used violence. Eight of the abusers were victims' neighbors and/or folks, 2 were relatives, 2 were strangers. Three victims experienced CSA at the age of 6 to 12 years, one at 13 to 14 years, three at 15 to 16 years, and five at 17 to 18 years.

Results of SCL-90 test

SCL-90 scores of the students were compared between those experienced CSA and those not. Multivariante analysis showed statistically significant differences in factor scores (F=6.18, P<0.001) after comparing the factor scores of CSA$^+$ group (n=244) and CSA$^-$ group (n=1063). The scores of 9 factors of the CSA$^-$ group were lower than those of the CSA$^+$ group (P<0.01).

Factor scores in the CSA$^+$ group and CSA$^-$ group were compared to the normal model of national youth group by SCL-90 test. Scores in basic symptom factors of SCL-90 test were higher in students of CSA$^+$ group than in the national youth group. Except for somatization, obsessive-compulsive and psychoticism, no significant difference was observed in the other six factor scores of SCL-90 between the CSA$^-$ group and national youth group (Table 7).

The influence of different forms of sexual abuse on the psychiatric symptoms of the victims was compared. Logistic regression analysis was made with the total factors of symptoms as the variable factor, the non-physical contact CSA and physical contact CSA as the dependent variable factors. The results indicated that the mental symptoms of female students were not related to the non-physical contact CSA experience (OR=1.357; 95%CI=0.79-2.33), but related to physical contact CSA experience. The risks of impairment of mental health in female students who had physical contact CSA experience were 2.157 times (95%CI=1.20-3.88) higher than those who had non-

Table 5. Analysis of abusers of the female students

Forms of CSA	n	Sex of abusers		Age of abusers			Means of abuse (one or more)					Relationship of the two sides					
		Male	Female	Young	Middle-aged	Old	Violence	Intimidation	Inducement	Deception	Others	Relatives	Teachers	Neighbors	Folks	Others	Strangers
Non-physical contact CSA	75	75	0	44	28	3	0	2	14	8	53	2	2	6	6	0	59
Physical contact CSA	80	79	1	56	18	6	5	7	19	19	33	17	10	14	14	2	23
Total	155	154	1	100	46	9	5	9	33	27	86	19	12	20	20	2	82

CSA: childhood sexual abuse.

Table 6. Analysis of abusers of the male students

Forms of CSA	n	Sex of abusers		Age of abusers			Means of abuse (one or more)					Relationship of the two sides					
		Male	Female	Young	Middle-aged	Old	Violence	Intimidation	Inducement	Deception	Others	Relatives	Teachers	Neighbors	Folks	Others	Strangers
Non-physical contact CSA	45	44	1	42	3	0	0	2	11	5	28	2	7	10	24	1	1
Physical contact CSA	44	32	12	37	5	2	6	5	11	7	19	2	6	9	17	2	8
Total	89	76	13	79	8	2	6	7	22	12	47	4	13	19	41	3	9

CSA: childhood sexual abuse.

Table 7. Factor scores in the CSA^+ group and CSA^- group compared to the normal model of the national youth group by SCL-90 test

Symptom factors	National youth group	CSA^+ group vs national youth group			CSA^- group vs national youth group		
	(*n*=781, 18-29 years)	(*n*=244)	*t*	*P*	(*n*=1063)	*t*	*P*
Somatization	1.34±0.45	1.44±0.45	2.03	<0.05	1.28±0.35	2.02	<0.05
Obsessive-compulsive	1.69±0.61	2.09±0.70	6.89	<0.001	1.81±0.59	3.29	<0.05
Interpersonal sensitivity	1.76±0.67	2.07±0.73	5.11	<0.001	1.77±0.64	0.26	>0.05
Depression	1.57±0.61	1.92±0.71	5.99	<0.001	1.60±0.59	0.82	>0.05
Anxiety	1.42±0.43	1.66±0.64	4.68	<0.001	1.42±0.47	0.00	>0.05
Hostility	1.50±0.57	1.81±0.74	5.39	<0.001	1.55±0.61	1.38	>0.05
Phobic anxiety	1.33±0.47	1.47±0.50	2.76	<0.01	1.33±0.42	0.00	>0.05
Paranoid ideation	1.52±0.60	1.85±0.73	5.65	<0.001	1.56±0.56	1.12	>0.05
Psychoticism	1.36±0.47	1.66±0.62	5.73	<0.001	1.44±0.46	2.49	<0.05

CSA^+: with CSA experience; CSA^-: without CSA experience.

physical contact CSA experience. Mental symptoms in male students were associated with both non-physical contact CSA experience and physical contact CSA experience. The rate of impaired mental health was respectively 2.095 times (95%CI=1.14-3.84) and 2.761 times (95%CI=1.34-5.68) higher than those who had no CSA experience. The results implied that the more serious the CSA experience was, the higher SCL-90 scores of the psychiatric disorders would be.

Discussion

Studies have shown varied results owing to the concealing characteristic of CSA, the means of retrospective investigation, different definition, standard, and samples from different resources.[5,6,18,19,22] Finkelhor et al[22] found that 27% of girls and 16% of boys had experienced physical contact CSA at least once before 18 years in a national telephone investigation. They also found that the sexual abusers of male victims were usually strangers, while those of the female victims were relatives, and that about half of the abusers were authoritative figures to the victims and most of them were men. Fanslow et al[5] reported a retrospective study by a face-to-face interview of 2855 women aged 18 to 64 years randomly selected from two regions in New Zealand. They found that the overall prevalence rates for CSA were 23.5% for women from the urban area and 28.2% for those from the rural areas. The median age of abuser was 30 years. The majority of cases were perpetrated by a family member and most of them were males. In an investigation of 324 American female undergraduate students, 37.7% of the students had sexual abuse experience prior to age 16.[6] Chen's questionnaire for Chinese high school students showed that 25.5% of females and 23.0% of males had experienced CSA once or more before age 16, and 9.8% of the females and 15% of the males experienced physical contact CSA.[18,19]

The results of our investigation showed that the rate of sexual abuse in girls was significantly lower than those of reported by others[5,6,19] but similar to Finkelhor's results.[22] While the rate of male experiencing physical contact CSA was significantly lower than that reported by Finkelhor[22] and Chen.[18] We found that 89.9% of the victims knew the abusers, of whom 40% were their close relatives, teachers and neighbors, which was different from that reported by Finkelhor et al.[22]

In this study, the occurrence of female sexual abuse tended to increase with age. For males, 54.7% (47/86) of the victims were aged from 12 to 16 years. The average age was older than those reported by Fanslow[5] and Chen et al.[18]

The difference in the incidence of CSA was not statistically significant in the factors of residence before entering university, education of the mother and whether the victim was the only child. The rate of CSA was higher in children from single-parent or a remarriage family than in those from a core family or an extended family. Since the CSA incidence of girls was higher than that of boys, the female sex itself was a high risk factor of CSA. Being different from other studies,[3,19] the rate of CSA was lower in those families with fathers who had a higher education level.

CSA experience would affect the physical and mental health of the victims.[2,4,13-15,23] We found that the more serious the CSA experience was, the higher SCL-90 scores of the psychiatric disorders would be. Although there was no statistical significance in mental symptom scores of female students between those with non-physical contact CSA experience and those without such CSA experience, the general pattern was similar. There would be a more positive and stronger statistical significance with the increase of the survey sample.

Because of the sensitivity and embarrassing nature of the "sex" subject in China, we can not guarantee all of the questions were answered fully. But the results

showed that CSA among college students were not rare and almost half of the abusers were the victims' close relatives, neighbors and teachers. Because CSA experience not only affects the victims' physical health but also their mental health, communities, schools, and families should pay due attention to prevent and reduce the occurrence of CSA.

Funding: None.
Ethical approval: This study was approved by the data inspectorate of China and by the regional committee for medical research ethics.
Competing interest: None declared.
Contributors: Sun YP proposed the study and wrote the first draft. Dong ZJ analyzed the data. All authors contributed to the design and interpretation of the study and to further drafts. Sun YP is the guarantor.

References

1 Jing CX. Childhood abuses and neglect. In: Wang SY, eds. Injury Epidemiology, 1st ed. Beijing: People's Medical Publishing House, 2003: 394-396.
2 Dube SR, Anda RF, Whitfield CL, Brown DW, Felitti VJ, Dong M, et al. Long-term consequences of childhood sexual abuse by gender of victim. Am J Prev Med 2005;28:430-438.
3 Haj-Yahi MM, Tamish S. The rates of child sexual abuse and its psychological consequences as revealed by a study among Palestinian university students. Child Abuse Negl 2001;25:1303-1327.
4 Najman JM, Nguyen ML, Boyle FM. Sexual abuse in childhood and physical and mental health in adulthood: an Australian population study. Arch Sex Behav 2007;36:666-675.
5 Fanslow JL, Robinson EM, Crengle S, Perese L. Prevalence of child sexual abuse reported by a cross-sectional sample of New Zealand women. Child Abuse Negl 2007;31:935-945.
6 Aspelmeier JE, Elliott AN, Smith CH. Childhood sexual abuse, attachment, and trauma symptoms in college females: the moderating role of attachment. Child Abuse Negl 2007;31:549-566.
7 Battle CL, Shea MT, Johnson DM, Yen S, Zlotnick C, Zanarini MC, et al. Childhood maltreatment associated with adult personality disorders: findings from the Collaborative Longitudinal Personality Disorders Study. J Personal Disord 2004;18:193-211.
8 Edwards VJ, Holden GW, Felitti VJ, Anda RF. Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: results from the adverse childhood experiences study. Am J Psychiatry 2003;160:1453-1460.
9 Young MS, Harford KL, Kinder B, Savell JK. The relationship between childhood sexual abuse and adult mental health among undergraduates: victim gender doesn't matter. J Interpers Violence 2007;22:1315-1331.
10 Rodriguez-Srednicki O. Childhood sexual abuse, dissociation, and adult self-destructive behavior. J Child Sex Abus 2001;10:75-90.
11 Sartor CE, Lynskey MT, Bucholz KK, McCutcheon VV, Nelson EC, Waldron M, et al. Childhood sexual abuse and the course of alcohol dependence development: findings from a female twin sample. Drug Alcohol Depend 2007;89:139-144.
12 Masten J, Kochman A, Hansen NB, Sikkema KJ. A short-term group treatment model for gay male survivors of childhood sexual abuse living with HIV/AIDS. Int J Group Psychother 2007;57:475-496.
13 Andover MS, Zlotnick C, Miller IW. Childhood physical and sexual abuse in depressed patients with single and multiple suicide attempts. Suicide Life Threat Behav 2007;37:467-474.
14 Adams RE, Bukowski WM. Relationships with mothers and peers moderate the association between childhood sexual abuse and anxiety disorders. Child Abuse Negl 2007;31:645-656.
15 Edmond T, Rubin A. Assessing the long-term effects of EMDR: results from an 18-month follow-up study with adult female survivors of CSA. J Child Sex Abus 2004;13:69-86.
16 Eisenberg ME, Ackard DM, Resnick MD. Protective factors and suicide risk in adolescents with a history of sexual abuse. J Pediatr 2007;151:482-487.
17 Kristensen E, Lau M. Women with a history of childhood sexual abuse. Long-term social and psychiatric aspects. Nord J Psychiatry 2007;61:115-120.
18 Chen JQ, Wang XW. Study on the childhood sexual abuses among 239 male senior middle school students. Chin Ment Health J 2003;17:345-347.
19 Chen JQ, Dunne MP, Wang XW. Investigations of childhood sexual abuses on female senior middle school students. Chin J School Health 2002;23:108-110.
20 Fergusson DM, Horwood LJ, Lynskey MT. Childhood sexual abuse and psychiatric disorder in young adulthood: II. Psychiatric outcomes of childhood sexual abuse. J Am Acad Child Adolesc Psychiatry 1996;35:1365-1374.
21 Chen CH. (Symptom Check-List-90, SCL-90). Diagnostic and statistical manual of the mental disorders. In: Wang XD, eds. Rating scales for mental health. Chin Ment Health J 1999; 13(Suppl):S31-S35.
22 Finkelhor D, Hotaling G, Lewis IA, Smith C. Sexual abuse in a national survey of adult men and women: prevalence, characteristics, and risk factors. Child Abuse Negl 1990;14:19-28.
23 Baboolal NS, Lalla S, Chai M, Curtis R, Nandwani C, Olivier L, et al. Childhood sexual abuse among outpatients attending adult psychiatric outpatient clinics: a case-control study. West Indian Med J 2007;56:152-158.

Received April 2, 2007
Accepted after revision September 7, 2008