SEXUAL ABUSE IN ADOLESCENTS — DATA FROM A PSYCHIATRIC TREATMENT CENTRE FOR ADOLESCENTS

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Objectives. To determine the prevalence of sexual abuse in a large sample of adolescent psychiatric patients and to compare sexually abused patients with non sexually abused patients, the latter category including non-sexual physically abused and non-abused patients.

Design. A retrospective analysis of the patient records at the William Slater Centre for Adolescents, University of Cape Town Medical School/Groote Schuur Hospital.

Setting. The William Slater Centre (WSC) is an outpatient psychiatric treatment centre for adolescents with emotional and behavioural problems.

Subjects. Nine hundred and thirty-four adolescent and young adult patients referred to the WSC in Cape Town from February 1990 to April 1997.

Methods. The WSC Assessment form, a semi-structured interview schedule, was used to focus on depressive symptoms, suicidal ideation and parasuicide, eating disorders, substance abuse, psychosexual history, sexual abuse and physical abuse, and *Diagnostic and Statistical Manual IV* diagnosis.

Results. One-third of all patients admitted to the centre from February 1990 to April 1997 reported some form of sexual abuse. More sexually abused patients than expected received a diagnosis of depression. On average sexually abused patients scored higher on depression rating scales than non sexually abused patients. Logistic regression showed that the presence of suicidal symptoms and alcohol use are to some extent independently associated with sexual abuse.

Conclusion. The problem of sexual abuse among South African youth is confirmed by this study. The association between sexual abuse and depression, suicidal symptoms and alcohol use is supported. The country's dwindling psychiatric services therefore face an increasingly challenging future.

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Sexual abuse is an increasingly well-documented problem in South Africa.[1-3] Besides being a social and criminal violation, the situation is an imposing challenge to our inadequate health services since sexual abuse is recognised to be an important risk factor for the development of psychiatric problems.[4] Depression, substance abuse (alcohol abuse in particular), and suicidal symptoms predominate in this regard.[5-11]

Increasing debate is focusing on the extent to which sexual abuse is directly associated with psychosocial consequences of the above type.[4] For example, is sexual abuse simply one of many potential traumatic events which could lead to depression, and hence suicidal behaviour and alcohol use, or could sexual abuse lead to a particularly destructive syndrome, notable for the high prevalence of suicidal behaviour and alcohol use?

In this study the patient records of an adolescent psychiatric unit in Cape Town are analysed and discussed. The study aimed: (*i*) to determine the prevalence of sexual abuse in a large sample of adolescent psychiatric patients; and (*ii*) to compare sexually abused patients with non-sexually abused patients.

METHOD

A retrospective analysis of the patient records at the William Slater Centre (WSC) for Adolescents (University of Cape Town Medical School/Groote Schuur Hospital) was conducted. The WSC is an outpatient psychiatric treatment centre for adolescents with emotional and behavioural problems. Since the centre specialises in mood disorders and focuses heavily on group work, all patients with severe conduct disorder and/or psychotic illness are referred elsewhere.

The sample for the present study comprised 934 adolescent and young adult patients admitted to the WSC from February 1990 to April 1997. Referred patients undergo a full psychiatric assessment by a psychiatrist or psychologist, after which they may be admitted to the 12-week psychotherapeutic day-patient programme. Descriptive statistics of the sample are given in Table I.

Each patient in this study underwent a full psychiatric assessment, after which the clinician used the WSC Assessment Form to focus systematically on the following areas:
(*i*) depressive symptoms; (*ii*) suicidal ideation and parasuicide; (*iii*) eating disorders; (*iv*) substance abuse; (*v*) psychosexual history; (*vi*) sexual abuse and physical abuse; and (*vii*) *Diagnostic and Statistical Manual IV* (*DSM-IV*) diagnosis.

The WSC Assessment Form is a semi-structured interview schedule designed for use by trained clinicians. Sexual abuse is defined as any physical involvement of children/adolescents in sexual activities for which they could not assume responsibility owing to their age, or to which they did not consent. Sexual activities include any of the following: attempted or completed vaginal or anal intercourse, sexualised kissing, fondling of the genital area and/or breast of the victim, forced masturbation of the offender by the victim, digital vaginal penetration, oro-genital contact. Sexual harassment in the form of sexist or sexual statements of an abusive nature, unsolicited exposure, and sexual experimentation among peers are excluded. In addition to the psychiatric interview, patients completed a self-report depression inventory, namely the Beck Depression Inventory (BDI)[12] and the rater-report Hamilton Depression Rating Scale (HDRS).[13] The BDI is a well-established self-report screening instrument and has been in wide use as a clinical and research measure of depressive symptoms in adolescents.[14] The HDRS is regarded as the most widely used observer rating scale in psychiatry.[15]

Table I. Characteristics of the study sample

Demographic characteristics	*N*	%
Sex (*N* = 933)		
Female	625	67.0
Male	308	33.0
Age (yrs) (*N* = 920)		
< 15	78	8.5
15 - 16	295	32.1
17 - 18	217	23.6
19 - 20	137	14.9
21 - 22	109	11.9
> 22	94	9.1
Living status (*N* = 917)		
Nuclear family	289	31.5
Single parent	238	26.0
Reconstituted family	109	11.9
Independent	114	12.4
Foster/adoptive	32	3.5
Extended family	80	8.7
Place of safety/children's home	47	5.1
Boarding house	8	0.9
Educational status ((*N* = 923)		
No formal education		
Primary	16	1.7
Secondary	604	65.4
Matric	206	22.3
Trade	8	0.9
Diploma	46	5.0
Degree	0	0
Employment status (*N* = 934)		
Full-time student	573	62.1
Employed student	37	4.0
Part-time employed	82	8.9
Full-time employed	74	8.0
Self-employed	3	0.3
Unemployed	154	16.7
Previous psychiatric history (*N* = 902)	541	60.0
Family history of psychological problems (*N* = 934)	396	42.4

RESULTS

Approximately one in three patients at the WSC reported past or current sexual abuse (Table II). Although most of these

Table II. Prevalence and character of sexual abuse

	N	%
Patients reporting past/current sexual abuse	317	33.94
Number of sexual abuse episodes (304 patients)		
One	174	54.89
Two	67	21.14
Three	29	9.15
More than three	12	3.8
Duration of sexual abuse (282 patients)		
Episodic	49	15.46
Single incident	145	45.74
Continuous	110	34.70
Age of onset (yrs)		
1 - 6	85	26.81
7 - 11	99	31.23
12 - 18	108	34.07
19 and over	4	1.26
Type of offender		
Immediate family	39	12.3
Uncle, grandparent, cousin	56	17.7
Extended family/step-family	30	9.5
Non-family, known	126	39.7
Non-family, unknown	40	12.6
Familial, unspecified	21	6.6

patients experienced one episode of sexual abuse, it is noteworthy that over 30% of those who had been abused had experienced more than one episode. In close to 40% of all cases the offender was a member of the family, and in an additional 40% of all cases the offender was not a family member but known to the victim/family.

The demographic and symptomatic differences between sexually abused and non sexually abused patients were explored by cross-tabulating all categorical data. The Pearson's chi-square test was used to test statistical significance. Continuous data were compared using *t*-tests.

It is clear that sexual abuse in this population is more prevalent among females (Table III). It is interesting to note that more sexually abused patients than randomly expected were currently involved in an intimate relationship. In terms of living circumstances, the data appear to indicate that significantly more sexually abused patients: (*i*) lived in a non-nuclear family; and (*ii*) had a family history of alcoholism. Significantly more sexually abused patients than randomly expected reported a range of psychiatric symptoms, including negative cognitions, suicidal symptoms, and substance abuse. In addition, more sexually abused patients than expected received a diagnosis of depression, and as shown in Table IV, sexually abused patients, on average, scored higher on depression rating scales than non sexually abused patients.

In order to determine the relative predictive power of key

Table III. A comparison of sexually abused and non sexually abused patients — significant categorical variables

	Sexually abused patients: observed (expected)	df	χ^2	*P*
Sex		1	107.84	0.0000
Male	34 (104.6)			
Female	283 (212.4)			
Single status		1	18.57	0.0000
In relationship	133 (104.1)			
Not in relationship	172 (200.9)			
Living circumstances		1	18.19	0.0000
Nuclear family	75 (104.0)			
Non-nuclear family	242 (213.0)			
Family history of alcoholism		1	4.64	0.0310
Reported	71 (58.9)			
Not reported	245 (257.1)			
Suicidal ideation		1	24.21	0.0000
Reported	184 (148.5)			
Not reported	133 (168.5)			
Parasuicide		1	60.57	0.0000
Reported	134 (84.3)			
Not reported	183 (232.7)			
Tearfulness		1	17.01	0.0000
Reported	181 (151.2)			
Not reported	136 (165.8)			
Sensitivity		1	8.36	0.0038
Reported	136 (115.9)			
Not reported	181 (201.1)			
Irritability		1	19.9	0.0000
Reported	197 (164.8)			
Not reported	120 (152.2)			
Feelings of worthlessness		1	11.3	0.0001
Reported	75 (56.4)			
Not reported	242 (260.6)			
Feelings of guilt		1	16.09	0.0000
Reported	43 (26.8)			
Not reported	274 (290.2)			
Feelings of uselessness		1	5.76	0.0164
Reported	42 (31.6)			
Not reported	275 (285.4)			
Feelings of failure		1	5.2	0.0223
Reported	59 (47.2)			
Not reported	258 (269.8)			
Substance abuse		1	6.1	0.0136
Reported	91 (75.8)			
Not reported	226 (241.2)			
Promiscuity		1	6.63	0.0100
Reported	34 (24.1)			
Not reported	283 (292.9)			
Depression diagnosis		1	15.1	0.0001
Present	235 (208.3)			
Not present	82 (108.7)			
Cigarette use		1	5.16	0.0231
Reported	170 (153.6)			
Not reported	147 (163.4)			
Alcohol use		1	11.09	0.0009
Reported	138 (114.8)			
Not reported	179 (202.2)			

Table IV. A comparison of sexually abused and non sexually abused patients using depression rating scale scores

	Sex abuse	No sex abuse	*t* (df)	*P*
BDI scores	28.2	23.5	3.39 (303)	0.0008
HDRS scores	22.9	18.2	4.66 (303)	0.0000

BDI = Beck Depression Inventory; HDRS = Hamilton Depression Rating Scale.

variables, a logistic regression analysis was conducted. The response or dependent variable under consideration was sexual abuse, coded as binary (1 or 0). Nine predictor or independent variables were identified, namely suicidal ideation (binary), previous parasuicide (binary), alcohol use (binary), family history of alcohol use (binary), cigarette use (binary), diagnosis of depression (binary), BDI scores (continuous), feelings of worthlessness (binary), and feelings of guilt (binary).

Logistic regression procedures were conducted to test the predictive value of the independent variables. Two different types of modelling procedure were used. In the first, we attempted to arrive at an optimal classification of sexual abuse, i.e. a logical regression analysis was used to find which key variables were most strongly correlated with sexual abuse in order to differentiate between 'sexually abused' and 'not sexually abused' categories. Models were evaluated against each other by using a test of the incremental difference in the maximum likelihood (ML) χ^2.

The best model found was that comprising the variables parasuicide, depression, alcohol use, and family history of alcohol abuse. The results are shown in Tables V and VI.

The above model has an associated non sexually abused odds ratio (OR) of 2.63, with 80.23% of non-sexually abused subjects classified correctly, but only 39.37% of sexually abused subjects classified correctly. A model that replaced the binary variable depression with BDI scores appeared to be equally acceptable.

Table V. Logistic regression model for predicting sexual abuse

	Intercept	Parasuicide	Depression diagnosis	Alcohol use	Family history of alcohol abuse
Estimate	-1.42591	1.08056	0.320009	0.414553	0.356314
Standard error	0.14717	0.15895	0.160743	0.147884	0.180171
t (928)	-9.68895	6.79800	1.990807	2.803231	1.977643
P-level	≤0.00004	0.00000	0.046795	0.005165	0.048264

Not sexually abused (N = 616); Sexually abused (N = 317); Dependent variable = sexual abuse; Loss: maximum likelihood (MS-err. scaled to 1); Final loss: 560.16769028, ML $\chi^2(4)$ = 75.545, P = 0.00004.

Table VI. Classification matrix for logistic regression model 1

Observed	Predicted	Predicted	% correct
	Not sexually abused	Sexually abused	
Not sexually abused	569	47	92.37013
Sexually abused	235	82	25.86751

It is clear from the classification table that the logistic equation does not lead to good prediction of sexual abuse. The data are weighted heavily against effective prediction since only one-third of subjects were classified as sexually abused. In order to evaluate the impact of this, one-half of the non-abused cases was randomly selected, and the equation regenerated. The results, with associated classification matrices, are presented in Tables VII and VIII.

The above equation has an associated OR of 2.69, with 63.31% of non sexually abused subjects and 60.88% of sexually abused subjects classified correctly. The classification accuracy therefore varies considerably from the equation based on the full data set. It is apparent that the accuracy rate is not very good for any of the models (mere guessing would lead to 50% accuracy; the equations attain only 60% accuracy on average). Consequently, although the models appear to be optimal and do provide a statistically significant 'fit', they are not very useful for the prediction/classification of sexual abuse. Nevertheless, the results show that each variable has some separable predictive ability in relation to sexual abuse. In other words, the variables parasuicide, alcohol use, and family history of alcohol abuse are not simply a function of the variable depression, but to some extent appear to be independently related to sexual abuse.

Discussion

This study confirms the problem of sexual abuse among South African youth. One-third of all patients admitted to the centre from February 1990 to April 1997 reported some form of sexual abuse. Although it is difficult to reach any conclusions about the prevalence of sexual abuse among the general population, it is clear that child sexual abuse is strongly associated with psychiatric problems in adolescence. Besides the fact that a significant proportion of the centre's patients reported sexual abuse, it is also apparent that the sexually abused patients were significantly worse off than the non sexually abused patients. This was particularly noteworthy with regard to depression (and the severity of depressed mood), suicidal symptoms, and alcohol use. The logistic regression showed that the presence of suicidal symptoms and alcohol use are not simply functions of depression, but are to some extent independently associated with sexual abuse. In other words, these results support other studies in highlighting the association between sexual abuse and depression, suicidal symptoms, and alcohol use respectively.[5-11]

In conclusion, the finding that one in three of the unit's patients reported sexual abuse suggests that the primary 'illness' treated at this psychiatric unit (i.e. depression) is more a construct of the broad range of traumatic living circumstances under which our youth develop, than an endogenous illness. The associations of sexual abuse with suicidal symptoms, alcohol use, and troubled family circumstances, in the context of high unemployment, poverty, and gang-related violence, indicate a strong correspondence between adverse social conditions and

Table VII. Logistic regression model testing the dependence of the predictive accuracy on the unbalanced sample

	Intercept	Parasuicide	Depression diagnosis	Alcohol use	Family history of alcohol abuse
Estimate	-0.74998	0.96936	0.347142	0.483536	0.363211
Standard error	0.16465	0.18687	0.182051	0.174074	0.212753
t (620)	-4.55511	5.18736	1.906831	2.777765	1.707198
P-level	0.00001	0.00000	0.057004	0.005639	0.088286

Not sexually abused (N = 308); Sexually abused (N = 317); Dependent variable = sexual abuse; Loss: Maximum likelihood (MS-err. scaled to 1); Final loss: 407.00654137, χ^2

Table VIII. Odds ratio for regression analysis model 2 (OR 2.6859)

	Predicted Not sexually abused	Predicted Sexually abused	% correct
Not sexually abused	195	113	63.31169
Sexually abused	124	193	60.88328

psychological symptoms. The fact that so many of these 'social problems' lead to severe personal trauma and hence psychiatric illness, indicates that our nation's dwindling psychiatric services face an increasingly challenging future.

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