British Journal of Psychiatry (1993), **163**, 721–732

Childhood Sexual Abuse and Mental Health in Adult Life

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The relationship between childhood sexual abuse and mental health in adult life was investigated in a random community sample of women. There was a positive correlation between reporting abuse and greater levels of psychopathology on a range of measures. Substance abuse and suicidal behaviour were also more commonly reported by the abused group. Childhood sexual abuse was more frequent in women from disrupted homes as well as in those who had been exposed to inadequate parenting or physical abuse. While elements in the individual's childhood which increased the risks of sexual abuse were also directly associated to higher rates of adult psychopathology, abuse emerged from logistic regression as a direct contributor to adult psychopathology. Severity of abuse reported was related to the degree of adult psychopathology. The overlap between the possible effects of sexual abuse and the effects of the matrix of disadvantage from which it so often emerges were, however, so considerable as to raise doubts about how often, in practice, it operates as an independent causal element. Further, many of those reporting childhood sexual abuse did not show a measurable long-term impairment of their mental health. Abuse correlated with an increased risk for a range of mental health problems, but in most cases its effects could only be understood in relationship to the context from which it emerged.

Women who give a history of sexual abuse in childhood suffer more psychopathology in adult life (Browne & Finkelhor, 1986; Tong & Oates, 1990; Mullen, 1990; Beitchman *et al*, 1992*a*). What remains in doubt is the extent to which this association reflects a causal connection between sexual abuse and adult mental disorders and how any such connection could be mediated and modulated by other aspects of the victim's background and development.

Histories of sexual abuse in childhood are obtained more frequently than would be expected in psychiatric patients (Carmen *et al*, 1984; Jacobson & Richardson, 1987; Craine *et al*, 1988; Palmer *et al*, 1992) particularly those with affective disorders, eating disorders (Oppenheimer *et al*, 1985; Palmer *et al*, 1990; Root & Fallon, 1988), somatisation disorders (Morrison, 1989), borderline personality disorders (Bryer *et al*, 1987; Westen, 1990) and multiple personality disorders (Putnam *et al*, 1986; Coons & Milstein, 1986). Studies of student samples support a connection between giving a history of childhood sexual abuse and mental health and relationship problems (Sedney & Brookes, 1984; Finkelhor, 1984; Alexander & Lupfer, 1987; Briere & Runtz, 1988) although it should be noted that Fromuth (1986) reported that the apparent increase in depressive symptoms in abused students was no longer significant when she included a control for family background. Follow-up studies of victims also point to behavioural difficulties, particularly in the area of anger control, and increased symptoms of depression and anxiety (Herman *et al*, 1986; Gold, 1986; Oates & Tong, 1987; Conte & Schuerman, 1987). The strongest evidence comes from studies in random community samples where the results of standardised measures of psychopathology are correlated with histories of sexual abuse (Bagley & Ramsey, 1986; Peters, 1988; Mullen *et al*, 1988; Burnam *et al*, 1988; Stein *et al*, 1988; Winfield *et al*, 1990; Bifulco *et al*, 1991; Bushnell *et al*, 1993). These studies used different sampling techniques, methods of ascertaining abuse, instruments for measuring past as well as current mental disorder, and different methods of data analysis, but all agree that there is a significant association between giving a history of childhood sexual abuse and increased psychopathology in adult life. This association is open to a number of possible explanations other than in terms of a causal connection (Finkelhor, 1986; Mullen, 1990; Briere, 1992). One major query is whether sexual abuse is merely one element in a multiplicity of family and social disadvantages and whether it is this constellation of disadvantage which is pathogenic. Sexual abuse could be a marker for other factors which carry the real weight of causality, or share with adult psychopathology a common origin in a disrupted and disorganised childhood.

The literature suggests that childhood sexual abuse is not randomly distributed through the population but is more likely to occur to children from problematic home and family backgrounds (Finkelhor & Baron, 1986). Victims are more likely to come from disrupted families where one or both of the parents are absent for significant periods (Russell,

1986) or, if the parents are present, the family relationships are likely to be less cohesive and adaptable if not frankly conflict ridden (Peters, 1984; Alexander & Lupfer, 1987). The presence of a stepfather has been remarked on as a risk factor (Russell, 1984). The children who have been abused are more likely to perceive the relationship with their parents as uncaring and emotionally distant (Herman, 1981; Finkelhor, 1984; Alexander & Lupfer, 1987). The study of Bifulco *et al* (1991) reported that parent violence and any extended period of institutional care during childhood were also potent predictors of sexual abuse. Family characteristics appear from this literature to be more important than demographic and social variables as risk factors for abuse.

The finding that inadequate parental care and such factors as physical abuse predict increased rates of sexual abuse creates a problem for interpreting the data on its long-term impact, particularly on adult psychopathology, which itself is likely to be directly related to these same childhood factors. The history of abuse and adult symptomatology could vary as a function of family disadvantages and disruptions; if so, it will present formidable problems to determine the unique contribution of childhood sexual abuse. It has even been questioned what 'child abuse' might represent when family dysfunction has been removed from it, for child abuse of all kinds, including sexual, may often be so intimately bound up with a disrupted family environment as to have little construct validity in isolation (Briere, 1988).

This study set out to establish the relationships between reporting childhood sexual abuse and mental health in a random community sample of adult women. The possibility that such abuse was more common among women from disordered home backgrounds necessitated disentangling the effects of abuse from the matrix of disadvantage in which it could be embedded. This was accomplished by identifying risk factors together with their direct effects on adult psychopathology, then recalculating the effects of sexual abuse, taking into account these potentially confounding variables.

Method

The first stage of the study, which was approved by the University and Health Board's Ethics Committee, involved sending a postal questionnaire to 2250 women randomly selected from the electoral rolls of Dunedin, New Zealand, a university city with a population of 130 000. The sample was checked to ensure that it did not overlap with an earlier sample employed to investigate physical and sexual abuse (Mullen *et al*, 1988). The questionnaire sought information on a range of sociodemographic and family factors as well as screening for the women's experience of sexual and physical abuse both during childhood and adult life. The 28-item General Health Questionnaire (GHQ) was included which generates a score representative of the level of symptoms as well as a measure of probable caseness (Goldberg, 1978). The standard scoring of the GHQ was augmented by a chronic scoring (Goodchild & Duncan-Jones, 1985). A Self-Esteem Questionnaire (Robson, 1989), and questions on alcohol consumption (Saunders *et al*, 1987) were also included in the postal package.

The second stage of the study involved interviewing a sample of the respondents under 65 years of age. Two groups were selected, one consisting of 298 subjects reporting childhood sexual abuse, and an equivalent number randomly selected from the 716 subjects who did not report sexual abuse either as a child or as an adult. The 174 women who gave no history of sexual abuse in childhood, but had experienced sexual or physical abuse as adults, were excluded at this stage as the impact of such abuse might well have confounded the differences between those who had experienced childhood sexual abuse and our non-abused control group. The interview involved detailed enquiry into the women's experience of sexual and physical abuse (for details, see Martin *et al*, 1993). A number of probes were employed to establish the subject's current, and probable past psychiatric symptoms. The short form of the Present State Examination (PSE; Wing *et al*, 1974, 1977) was administered by trained interviewers together with additional questions to generate longitudinal data on psychiatric disorder (McGuffin *et al*, 1986). Additional questions were also included on eating disorders and drug dependence derived from a current revision of the PSE. The PSE generates a total score indicative of the level of symptomatology in the previous month. The CATEGO program was employed to identify from the PSE responses a group whose symptoms suggested they would have been identified as a case and received a clinical diagnosis. Specific enquiries were made into the subjects' history of suicidal impulses and actions. The Parental Bonding Instrument (PBI; Parker *et al*, 1979; Parker, 1983) was completed for each parental figure. The PBI allows the identification of parents perceived as rejecting by being low on care and concern or overcontrolling and punitive. There were extensive questions about family background, personal development, temperament, and a detailed enquiry was made into the women's relationship history and sexual adjustment (for further details of the method, see Martin *et al*, 1993). Over 90% of the interviews, which took between one and five hours, were conducted by JLM or JCA. The interviewers were blind to the women's responses to the postal questionnaire at the time of the interview. The enquiries about abuse experiences came at the end of the interview when all the other data gathering was complete.

Statistical analysis

Data were entered on the university mainframe computer and analysed using the SPSSX statistical programme. Control subjects were compared for all analyses with three levels of childhood sexual abuse: firstly, all cases of abuse, including non-contact experiences ($n = 252$); secondly, all

https://doi.org/10.1192/bjp.163.6.721 Published online by Cambridge University Press

cases of abuse involving at least genital touching and up to and including intercourse ($n = 191$); and, finally, those cases that involved actual penetration who formed the intercourse group ($n = 32$). Continuous variables were transformed where appropriate for non-normality and analysed using Student's *t*-tests, while categorical variables were tested for significance by χ^2 and odds ratios tests. For multivariate analysis, the statistical package GLIM was used to produce logistic regression models, using both forward insertion and backwards deletion. For each model, the contributing variables were entered separately to check their significance. Then they were re-entered in order of importance, until the successive variables ceased to contribute significantly to the model. At this stage the remaining variables were entered together. Non-significant variables were then removed one at a time, beginning with the least important, until only significant variables remained. The variable of childhood sexual abuse was then added to this parsimonious model to assess whether it had any additional effect. To minimise the problem of 'variance stealing', variables that demonstrated a high degree of correlation, such as mother's and father's parenting styles, were entered as an interaction and retained if any part of the interaction was significant. For each dependent variable two models were calculated, one with abuse 'caseness' entered as a binary variable – sexually abused, versus not sexually abused – and another considering the different levels of severity of childhood sexual abuse.

In analysing an extensive database problems may arise from multiple analysis (Jones & Rushton, 1982). In reporting odds ratios, the usual convention of providing 95% confidence limits has been adhered to but, when the lower limit approaches unity, the results should be treated with reservation. This caveat does not apply to the results of logistic regression where multiple analysis is not an issue.

In attempting to investigate the interaction of childhood sexual abuse with various developmental disadvantages, such as physical abuse and extended separations from parents, a childhood disadvantage scale was constructed with each disadvantage adding one to the score. This scale focused on aspects of family dysfunction and did not include measures of social adversity such as unemployment and poverty.

Results

The number of women who returned usable questionnaires was 1376, which was 61% of the whole sample and 71% of women under 65 with whom we were concerned in this study. Information available from the electoral roll suggested that our non-responders did not differ from respondents in socio-economic status. Eighty per cent of the women selected at the second stage agreed to be interviewed with 248 from the 298 reporting childhood sexual abuse on the postal survey and 244 from the non-abused sample constituting the interview sample. Discrepancies emerged in subjects between their account of abuse at the postal stage and at interview (Martin *et al*, 1993). Eighteen women identified as cases at the postal phase did not acknowledge abuse at interview. These subjects were excluded from further analysis. Abuse in seven women, when explored at interview, was found to conform to our criteria for non-coercive peer contacts and these subjects were transferred to the control group. Thirty-one of the original controls gave clear accounts of abuse at interview and were reassigned to the group who had experienced childhood sexual abuse. The control group was selected to exclude those who reported sexual and physical abuse at the postal stage. At interview, 40 women in the control group disclosed episodes of physical or sexual abuse during adult life. This group was left as part of the control group for the purposes of this analysis.

Those reporting abuse were more likely to belong to the lower two socio-economic groupings ($\chi^2 = 5.54$, d.f. = 1, $P < 0.05$). Cases were also more likely to be currently separated or divorced ($\chi^2 = 7.19$, d.f. = 1, $P < 0.01$) and more likely to have had children ($\chi^2 = 4.82$, d.f. = 1, $P < 0.05$). No differences emerged between those reporting sexual abuse and controls for educational level, current employment status, present age, or parental socio-economic status.

Sexual abuse of some form before the age of 16 years was reported by 252 subjects which, when weighted back to the original sample, gives a rate of 32% for all forms with 191 (20%) describing genital contact or worse and 62 (6%) recalling actual (32) or attempted (30) intercourse. The prevalence of all forms of abuse before 12 years of age was 20%, with 13% reporting genital contact or greater. This excludes non-coercive experiences with peers (Anderson *et al*, 1993).

Psychiatric symptoms and disorder

General Health Questionnaire

The GHQ scores from the postal survey revealed that women reporting childhood sexual abuse had significantly higher mean scores indicating greater psychopathology than non-abused controls (3.27, 95% CI 2.75 to 3.82 v. 2.39, 95% CI 1.94 to 2.95, $P < 0.05$). The highest scores were found in those who had been exposed to abuse involving genital contact (3.51, 95% CI 2.85 to 4.19, $P < 0.01$) or actual intercourse (5.49, 95% CI 3.54 to 7.75, $P < 0.01$). Employing a criterion level of 5 for probable caseness, then 24% of the non-abused controls were identified as cases compared with 36% of those reporting any form of childhood sexual abuse ($\chi^2 = 7.14$, d.f. = 1, $P < 0.01$), 37% of those experiencing genital abuse ($\chi^2 = 8.68$, d.f. = 1, $P < 0.01$) and no less than 56% of cases of intercourse ($\chi^2 = 14.17$, d.f. = 1, $P < 0.001$). The controls had significantly lower mean scores on the chronic scoring of the GHQ than the abused group (7.01, 95% CI 6.40 to 7.63 v. 8.85, 95% CI 8.19 to 9.55, $P < 0.001$) with the highest scores being found in those giving histories of abuse involving genital contact (9.31, 95% CI 8.46 to 10.20, $P < 0.001$) and intercourse (11.78, 95% CI 9.73 to 14.05, $P < 0.001$). The risk of being a case on the GHQ was nearly twice as high in those with abuse histories and over twice when using the chronic scoring (see odds ratio in Table 1).

https://doi.org/10.1192/bjp.163.6.721 Published online by Cambridge University Press

Table 1
Mental health outcomes for differing severities of childhood sexual abuse (CSA) compared with non-abused control group

Outcome variable	Type of abuse		
	All CSA: odds ratio (95% CI)	Genital CSA: odds ratio (95% CI)	Intercourse: odds ratio (95% CI)
GHQ case	1.7 (1.1-2.6)	2.0 (1.2-2.9)	4.0 (1.9-8.6)
CGHQ case	2.3 (1.5-3.4)	2.6 (1.6-4.0)	7.3 (3.3-16.3)
PSE case	3.6 (1.9-6.9)	4.6 (2.4-8.9)	9.7 (3.9-24.0)
Eating disorder	3.2 (1.5-7.0)	3.1 (1.4-7.0)	6.7 (2.3-19.4)
Anxiety disorder	2.4 (1.6-3.5)	3.0 (2.0-4.6)	3.0 (1.4-6.4)
Depressive disorder	2.6 (1.8-3.7)	3.5 (2.3-5.4)	5.2 (2.3-11.9)
Suicidal behaviour	20.4 (2.7-152.7)	26.2 (3.5-197.7)	74.0 (8.9-617.2)
Heavy drinker	NS	NS	5.3 (2.2-12.6)
Drug dependence	2.4 (1.1-5.3)	3.7 (1.6-8.6)	9.0 (3.0-26.0)
Seen psychiatrist	2.5 (1.5-4.4)	2.9 (1.7-5.0)	6.8 (3.0-15.4)
Seen counsellor	2.4 (1.5-3.6)	3.0 (1.9-4.7)	4.4 (2.0-9.5)
Been psychiatric in-patient	5.0 (1.7-15.1)	5.4 (1.7-16.6)	16.8 (4.3-66.0)

NS = Not significant.
GHQ = General Health Questionnaire; CGHQ = GHQ, chronic scoring; PSE = Present State Examination.

Present State Examination

The PSE results revealed that those who had experienced childhood sexual abuse had a significantly higher mean score on the PSE than controls (4.34, 95% CI 3.76 to 4.93 v. 2.60, 95% CI 2.21 to 3.01, $P<0.001$) with even higher scores being associated with abuse involving genital contact (4.85, 95% CI 4.19 to 5.54, $P<0.001$) and intercourse (6.180, 95% CI 4.26 to 8.36, $P<0.001$). The CATEGO programme identified 6% of controls as cases compared with 18% of the abused ($\chi^2=17.07$, d.f. = 1, $P<0.001$), with genital abuse (22%, $\chi^2=23.43$, d.f. = 1, $P<0.001$) and intercourse victims (37%, $\chi^2=31.74$, d.f. = 1, $P<0.001$) being even higher. A diagnostic classification of depression was suggested in 42 (8%) cases out of the 58 cases scoring over 4 on the CATEGO-generated Index of Definition. Depression was significant more frequently in abused cases (13% v. 5%, $\chi^2=7.70$, d.f. = 1, $P<0.01$) with a trend towards more severe abuse being associated with a greater frequency of depression, which reached 23% for those who had been subjected to abuse involving intercourse. Anxiety disorders were indicated in 16 subjects (3%), with phobic disorders predominating, of whom no less than 14 gave a history of sexual abuse. There was a non-significant trend for more severe abuse to be associated with higher numbers of anxiety disorder.

The odds ratios indicated that those who report any form of childhood sexual abuse are over three times as likely to be ascertained as a case on the PSE with abuse involving intercourse being associated with nearly 10 times the risk. Depressive and anxiety disorder categorisations were over twice as frequent in the abused group as a whole, rising in the case of depression to over five for intercourse victims (see Table 1).

The modification of the PSE to provide a lifetime estimate for disorder (McGuffin *et al*, 1986) suggested a past depressive disorder in 33% of the control subjects and 56% for victims ($\chi^2=25.34$, d.f. = 1, $P<0.001$). The highest rates were found in those reporting genital contact (63%) or intercourse (72%). Lifetime estimates of anxiety disorders by victims were significantly higher than for controls (42% v. 23%, $\chi^2=18.46$, d.f. = 1, $P<0.001$), with those who had experienced genital contact being even higher.

Eating disorders

Enquiry into eating disorders of both anorexic and bulimic types revealed that 12% of the abused group had had such problems, compared with only 4% of controls ($\chi^2=9.85$, d.f. = 1, $P<0.01$). The rates of eating disorders were even higher for those who had experiences of abuse involving intercourse (22%). Nineteen subjects reported features of anorexia nervosa at some time in their lives, with three having problems within the previous 12 months. Sixteen of these individuals, including all three currently symptomatic, reported sexual abuse ($\chi^2=7.76$, d.f. = 1, $P<0.05$). The chances of suffering an eating disorder appear to be tripled in those reporting sexual abuse (see Table 1).

Substance abuse

Excessive use of alcohol, defined as currently consuming 14 or more units a week, was reported by 9% of our controls and 13% of those giving histories of sexual abuse, a difference that did not reach statistical significance. Similarly, those who had reported genital abuse did not report significantly higher rates of heavy drinking (13% v. 9%, NS), but those reporting abuse involving intercourse showed significantly higher rates of such alcohol usage compared with controls (34% v. 9%, $\chi^2=16.94$, d.f. = 1, $P<0.001$). The odds ratios reflect the same pattern with only those reporting abuse involving intercourse having a significantly higher risk (see Table 1). A number of enquiries were made into problems with drug abuse, directed at problems with drugs rather than mere use of illicit drugs. Nine (4%) of the controls considered themselves to have been 'hooked' or dependent on drugs compared with 23 (9%) of abused cases ($\chi^2=4.98$, d.f. = 1, $P<0.01$). Most were abusing prescription drugs. The rates for such drug abuse were considerably higher in the more severely abused, with 25% of those reporting intercourse, and 12% who had been genitally abused with such problems. The odds ratios were significantly higher for drug abuse with the highest risks being for intercourse victims (see Table 1).

Previous treatment by mental health professionals

The women were asked specifically whether they had ever seen a psychiatrist for treatment or received counselling from any other mental health professional. Women who gave a history of abuse were significantly more likely to have received psychiatric treatment (22% v. 10%, $\chi^2 = 12.39$, d.f. = 1, $P<0.001$), with those reporting intercourse having the highest intervention rate (44%, $\chi^2 = 25.22$, d.f. = 1, $P<0.001$). Admission to a psychiatric unit or hospital at some time in their lives was reported by 27 women (5%), of whom 23 also gave a history of childhood sexual abuse ($\chi^2 = 9.74$, d.f. = 1, $P<0.001$). Counselling in some form had been engaged in more frequently by victims than controls (35% v. 18%, $\chi^2 = 16.31$, d.f. = 1, $P<0.001$), particularly those suffering abuse involving genital contact (41%, $\chi^2 = 23.55$, d.f. = 1, $P<0.001$) and intercourse (50%, $\chi^2 = 15.97$, d.f. = 1, $P<0.001$). The odds ratios were higher for those reporting abuse having sought help from a psychiatrist (2.51) or a counsellor (2.38), with rates for in-patient treatment being between 5 and 16 times higher, depending on the severity of the abuse (see Table 1).

Suicidal behaviour

The subjects were asked if they had ever attempted suicide. Only one woman in the control group reported having done so, but 21 (8%) of our victims acknowledged such a history ($\chi^2 = 16.77$, d.f. = 1, $P<0.001$), with the rates being highest for the intercourse victims in whom 8 (25%) had made attempts. The odds ratio for suicidal behaviour among the abused was over 20, reaching 70 for those in the intercourse group (see Table 1).

Risk factors

The true relationship between childhood sexual abuse and mental disorder in adult life can only be understood if we take into account the contribution of factors that may impact on the chances of experiencing such abuse, and contribute directly to adult mental disorder. The details of our data on risk factors will be presented elsewhere. Women who grew up in broken homes, or with one or both parents absent, are at higher risk. In those who came from non-nuclear families, for whatever reason, the odds ratio in favour of childhood sexual abuse ranged from 2.0 (95% CI 1.3 to 3.2) for any kind of sexual abuse to 3.7 (95% CI 1.7 to 8.1) for abuse involving intercourse. Those who were in this situation because of parental separation were 2.5 times (95% CI 1.4 to 4.9) more likely to be abused, and this rose to 4.7 (95% CI 1.8 to 12.4) for abuse involving intercourse. Those children brought up without either parent had an even greater risk with an odds ratio of 3.6 (95% CI 1.5 to 8.4). Children who came from homes where the parents had unsatisfactory and conflict-ridden relationships fared even worse with odds ratios in favour of childhood sexual abuse of 4.2 (95% CI 2.0 to 8.6). A further measure of family instability, the frequency with which they moved residence, also showed a relationship to abuse with a risk factor of 2.1 (95% CI 1.4 to 3.2).

Maternal mental health problems, as reported by the subject, did increase risks for childhood sexual abuse, in general being 2.7 (95% CI 1.3 to 5.6), but maternal physical health problems did not seem to increase the risks to the child. Paternal physical health, although not related to abuse in general, did markedly increase the odds ratio to 3.0 (95% CI 1.3 to 7.2) in favour of abuse involving intercourse. Paternal mental disorder, which included alcohol abuse, increased the risks of sexual abuse in general to 1.7 (95% CI 1.0 to 2.6), and abuse involving intercourse in particular to 2.3 (95% CI 1.0 to 5.4); but these are barely significant and, given the problems of multiple comparisons, must be treated with reserve.

The PBI identifies parents who are perceived as uncaring or rejecting, as well as being overcontrolling or punitive. Victims were 2.2 times (95% CI 1.4 to 3.3) as likely to rate their mothers as low on care and high on control than were controls and, for those who suffered abuse involving intercourse, this rose to 4.2 (95% CI 2.2 to 10.4). Similarly, the victims rated their fathers as uncaring and overcontrolling 2.2 times (95% CI 1.5 to 3.3) as often as did non-abused controls.

The measures of childhood temperament employed in the study did not correlate with an increased risk of sexual abuse, though lacking a confidante as a child did seem to produce a modest increase in risk (1.9 (95% CI 1.2 to 2.9)). There was considerable overlap between measures of physical abuse during childhood and the risks of sexual abuse. Those, for example, who reported being physically beaten as children were 6.1 (95% CI 2.6 to 17.9) times as likely to report sexual abuse and for victims of intercourse the odds ratio was 21.6 (95% CI 6.8 to 68.9).

Impact of risk factors on adult mental health

The factors identified as increasing the risks of falling victim to childhood sexual abuse were examined for their association with psychiatric problems during adult life. This analysis employed data from both abused women cases and controls. The measures of adult psychopathology chosen for this analysis were: being identified as being a case on the PSE; having had an eating disorder; reporting past suicidal behaviour; and, despite the small numbers, ever having received in-patient psychiatric care. These parameters were selected as being both reasonably stringent and robust.

Growing up in a non-nuclear family increased the risks of all negative mental health outcomes with odds ratios for being a case on the PSE of 2.4 (95% CI 1.2 to 4.7), for reporting an eating disorder of 2.1 (95% CI 1.0 to 4.0), for suicidal behaviour of 4.2 (95% CI 1.7 to 9.1) and for in-patient treatment of 2.6 (95% CI 1.1 to 5.9). Parental separation, as distinct from being brought up by a solo parent from the outset, was associated with somewhat higher levels of risks ranging from 2.5 (95% CI 1.3 to 5.0) for being a case on the PSE to 5.5 (95% CI 2.2 to 13.7) for suicidal behaviour. Those children who were without either parent for significant periods during childhood also fared poorly, with odds ratios of 2.4 (95% CI 1.0 to 5.5) for being a case on the PSE, 4.7 (95% CI 2.0 to 10.9) for having an eating disorder and 7.7 (95% CI 2.9 to 20.6) for suicide attempts. The situation where the family atmosphere was seriously marred by parental discord was also

Table 2
Adjusted odds ratios after logistic regression for measures of adult psychopathology

Variable	PSE case: odds ratio (95% CI)	GHQ case: odds ratio (95% CI)	Chronic GHQ case: odds ratio (95% CI)	Eating disorder: odds ratio (95% CI)	Suicidal behaviour: odds ratio (95% CI)	In-patient psychiatric care: odds ratio (95% CI)
Any CSA	2.7 (1.4-5.5)	NS	2.1 (1.3-3.2)	2.2 (1.0-5.0)	10.3 (1.4-73.6)	3.9 (1.3-11.5)
Non-genital CSA	NS	NS	1.9 (1.0-3.5)	NS	NS	NS
Genital CSA	2.9 (1.4-6.1)	NS	1.8 (1.1-3.0)	NS	8.6 (1.1-64.7)	3.45 (1.0-11.4)
CSA involving intercourse	5.5 (2.0-15.2)	3.0 (1.3-6.7)	6.3 (2.7-14.5)	3.7 (1.2-11.6)	25.6 (3.1-212.0)	12.0 (3.1-46.3)
Poor parental relationship	5.1 (2.6-10.2)	1.9 (1.0-3.6)	NS	NS	6.1 (2.3-16.2)	NS
Low care, high control mother	2.4 (1.0-5.6)	NS	NS	NS	3.0 (1.1-8.1)	3.4 (1.5-7.7)
Low care, high control father	3.3 (1.4-7.8)	NS	1.9 (1.2-2.9)	NS	NS	NS
Both parents low care, high control	2.5 (1.2-5.5)	1.9 (1.1-3.3)	NS	3.5 (1.5-8.3)	NS	NS
Follower as a child	2.2 (1.2-4.1)	NS	2.0 (1.3-3.0)	NS	NS	NS
Frequent moves	NS	1.73 (1.13-2.65)	1.5 (1.0-2.4)	NS	NS	NS
Growing up in a non-nuclear family	NS	NS	NS	NS	NS	2.6 (1.1-5.9)
Growing up separated from both parents	NS	NS	NS	3.7 (1.5-10.3)	4.64 (1.5-14.1)	NS

NS = Not significant.
PSE = Present State Examination; GHQ = General Health Questionnaire; CSA = Childhood sexual abuse.

inimical to adult mental health, with odds ratios of 7.5 (95% CI 3.9 to 14.4) for PSE caseness, 4.1 (95% CI 2.0 to 8.7) for eating disorders and 8.6 (95% CI 3.5 to 21.1) for suicidal behaviour. Moving frequently from one abode to another during childhood was a factor associated with increased childhood sexual abuse, but suicidal behaviour (odds ratio 3.1, 95% CI 1.3 to 7.3) and reporting an eating disorder (odds ratio 1.9, 95% CI 1.0 to 3.7) were the only mental health outcomes with which it was significantly associated. PSE caseness was increased in those whose mothers had impaired physical (2.2 (95% CI 1.3 to 4.3)), or mental health (2.4 (95% CI 1.2 to 4.8)), but this did not correlate with other measures of adult psychopathology. Paternal physical ill health produced no elevation in the risk of adult psychopathology and paternal mental health was related only to eating disorders (3.6 (95% CI 1.6 to 8.2)).

Poor parenting in care-givers elevated the risks of adult disorder, particularly where the mother was rated as low on concern, but high on control. The odds ratios in this situation were 3.2 (95% CI 1.9 to 5.6) for PSE caseness, 3.2 (95% CI 1.7 to 6.2) for eating disorder, and 3.3 (95% CI 1.4 to 8.0) for suicidal behaviour, although no significant association was measurable for in-patient treatment. Uncaring, over-controlling fathers were associated with 2.8 (95% CI 1.6 to 4.9) times the risk of PSE caseness with odds ratios of 3.2 (95% CI 1.7 to 6.0) for eating disorders, 5.5 (95% CI 2.2 to 13.8) for suicidal behaviour and 4.8 (95% CI 2.1 to 10.8) for in-patient psychiatric treatment. Childhood temperament in terms of being a follower and one of the crowd was associated with an odds ratio of 2.2 (95% CI 1.3 to 3.8) being a PSE case. The lack of a confidante during childhood which showed a modest association to the risks of sexual abuse, did not appear to be related to adult mental health. Being beaten as a child emerged as a strong risk factor for all mental health measures, with odds ratios of 4.3 (95% CI 2.0 to 8.9) for PSE caseness, 2.6 (95% CI 1.1 to 6.4) for eating disorders, 5.0 (95% CI 1.8 to 13.7) for suicidal behaviour and 3.9 (95% CI 1.4 to 10.9) for in-patient treatment.

Logistic regression

Logistic regression was employed in an attempt to unravel the impact on adult psychopathology from the effects of the family background with which childhood sexual abuse was so often associated. Abuse emerged from this analysis as making an independent contribution to all of our measures of psychopathology except the standard scoring of the GHQ (Table 2). Abuse was associated with odds ratios in favour of being a PSE case of 2.7. When the different types of abuse were examined separately it was genital abuse and abuse involving intercourse that were making the main contribution to adult psychopathology. The subjects reporting abuse involving intercourse continued to have the highest risks of psychopathology with odds ratios of 5.5 for being a PSE case, 3.7 for an eating disorder, 25.6 for

suicidal behaviour, and 12 for admission. It should be noted that women reporting abuse that did not involve genital touching or worse, no longer showed significantly increased odds ratios in favour of adult psychopathology, with the exception of being a case on the chronic scoring of the GHQ which just reached significance.

The associations between a range of family and developmental disadvantages and measures of adult psychopathology were also examined employing logistic regression (see Table 2). Mathematical modelling using these results indicated that childhood sexual abuse contributed to all measures of psychopathology except the standard GHQ.

Psychopathology, childhood sexual abuse and disadvantage

The use of logistic regression allows an estimation of the independent influence of childhood sexual abuse to the various measures of adult psychopathology, but the question remains as to whether in practice a history of such abuse is associated with adult psychiatric disorder when it is not accompanied by other developmental disadvantage. A seven-point scale was constructed for a number of developmental disadvantages which included poor parenting, parental separation, parental disharmony, physical abuse in childhood, being separated from parents and frequent moves. Those reporting abuse had more disadvantages, with 50% of controls (against 25% of victims) having no disadvantages and only 7% of controls having three or more disadvantages compared with 23% of victims ($\chi^2 = 42.2$, d.f. = 2, $P < 0.001$). The risks of all measures of psychopathology increased with the presence of more than one disadvantage in the subjects' lives. Victims who reported either no or only one disadvantage were not significantly more likely to have mental health problems in adult life than were non-abused controls with a similar lack or low level of disadvantage. This leaves open, however, the possibility that more severe forms of abuse may still be associated with adult psychopathology even in those not exposed to other family and developmental disadvantages. To explore this possibility, those reporting abuse involving intercourse who also fell into the low-disadvantage group were examined separately. They were found to be more likely to be identified as a case on the PSE ($\chi^2 = 4.36$, d.f. = 1, $P < 0.05$) and to have had in-patient psychiatric treatment ($\chi^2 = 9.34$, d.f. = 1, $P < 0.01$).

Discussion

Psychiatric symptoms and disorder

Giving a history of childhood sexual abuse was associated with increased psychiatric problems in adult life. There were significant correlations between the reporting of abuse and greater levels of psychopathology on a range of measures including the PSE, the GHQ, an eating disorders schedule and the subjects' accounts of their previous contact with the mental health services. This finding is in line with those from other community surveys (Bagley & Ramsay, 1986; Peters, 1988; Mullen *et al*, 1988; Burnam *et al*, 1988; Winfield *et al*, 1990; Bifulco *et al*, 1991; Bushnell *et al*, 1993). The increased rates of psychopathology on the PSE, as evidenced by both the total scores and the increased rate of being a case, were explained by both depressive symptoms and, to a lesser extent, anxiety symptoms. The association between giving a history of sexual abuse and being identified as a case on the PSE was sufficiently robust to survive a logistic regression that took a range of developmental disadvantages into account.

Those reporting abuse were nearly twice as likely to be identified as a case on the standard scoring of the GHQ, but the relationship ceased to be significant when the influence of other childhood disadvantages were taken into account. The standard scoring of the GHQ is primarily an indication of the current mood state and, as such, is a labile measure responsive to short-term changes. The chronic scoring of the GHQ tends to provide a better picture of persisting trends and dispositions in the subjects' state of mind. This being so, it is not surprising that a history of abuse was more strongly correlated to the chronic GHQ and this remained significant even allowing for the influence of other developmental factors. A strong association between abuse and eating disorders emerged, which held for both anorexic and bulimic types. This finding is in accord with clinical studies on patients with eating disorders (Calam & Slade, 1987; Oppenheimer *et al*, 1985; Palmer *et al*, 1990). The numbers in this study are insufficient to generate usable data on the schizophrenic or the manic–depressive disorders. In line with other community studies who have examined substance abuse (Stein *et al*, 1988; Winfield *et al*, 1990), we found higher levels of both alcohol usage and drug abuse in our victims.

The higher rates of psychopathology in abused cases was associated with an equally high utilisation of mental health services in terms of contact with psychiatrists and other mental health professionals. The frequency with which victims were admitted to hospital or had histories of suicidal behaviour were, however, elevated even beyond the levels predictable from the degree of measured psychopathology. This was particularly marked for the more severely abused, who reported psychiatric admissions five times more frequently in those exposed to genital abuse and 16 times more for victims of abuse involving intercourse. This finding goes some way to explaining the high rates of childhood sexual abuse reported in samples from in-patient psychiatric units. Such abuse would appear, from this study, not only to be associated with increased vulnerability to psychiatric disorder, but also to make it more likely that admission will be required when disordered. The levels of suicidal behaviour, which were between 20

and 70 times greater in our cases than in controls, was out of all proportion to the level of measured psychopathology. This supports reports from workers such as Carmen and her group (1984) on psychiatric in-patients and Briere & Runtz (1986) on attenders at a crisis centre of higher rates of suicidal and self-damaging behaviour among patients reporting childhood sexual abuse. The suicidal behaviour could be mediated in part by the damaged self-esteem present in many of the abused group. Another possible explanation for this discrepancy between overt suicidal behaviour and measured psychopathology is that among our victims are higher rates of borderline and related personality disorders. This would certainly accord with our findings of an important overlap between childhood sexual abuse and a range of developmental disadvantages, including physical and emotional abuse, which predisposes to such disorders. Unfortunately, a weakness of this study is the lack of adequate measures of personality functioning.

In a study such as this, the focus is on the increased mental health problems suffered by victims of childhood sexual abuse but it should not be overlooked that many victims gave no account suggestive of significant psychiatric difficulties in adult life. Such abuse is linked with psychiatric disorder in adult life but such disorder is not an inevitable consequence of abuse. The strength of the association between giving a history of sexual abuse and a range of measures of psychopathology, particularly as this association is still present, in most cases, after adjusting for other factors, supports a causal connection. If there is a causal relationship, something approaching a dose–response curve might be expected – thus the more severe the abuse, the more serious should be the outcome. The results in Table 1 clearly illustrate just such a relationship for virtually every measure of psychopathology. Those who suffered abuse involving intercourse consistently have a worse outcome than the abused group as a whole and, in every instance, except anxiety disorders, have a worse outcome than those whose abuse involved genital contact. This relationship between the severity of the abuse and the chance of suffering some form of adult psychopathology is still clearly evidenced following logistic regression (see Table 2). The apparent relationship between the severity of abuse and the degree of adult psychopathology cannot be explained simply by victims of intercourse coming from even more disrupted and disturbed backgrounds than other victims, as this relationship remains following logistic regression, which take into account such developmental disadvantage.

Statistical analysis

Childhood sexual abuse occurred more frequently in women from difficult and disadvantaged family backgrounds although there were, of course, victims from secure and caring homes. The risks of becoming a victim were increased by broken homes and less than optimal parenting practices. There was a strong association between sexual and physical abuse and child rearing practices suggestive of a degree of emotional abuse. These risk factors are themselves linked with mental health problems in adult life. The separation of the independent influences on adult outcomes of factors such as sexual abuse from the various family disadvantages with which they co-vary is a formidable problem, which can be solved only in part by the use of logistic regression and statistical modelling. Childhood sexual abuse did emerge from such an analysis as having a substantial and direct association with psychopathology. The overlap between the effects of the risk factors and sexual abuse itself is, however, so considerable as to raise a question about the extent to which, in practice, such abuse could operate as an independent causal element. When the full range of abuse experiences is considered, the risks of women victims who came from stable and satisfactory home backgrounds developing significant adult psychopathology were not significantly higher than controls from similar backgrounds but, when those unfortunate enough to be exposed to abuse involving penetration were examined separately, they did have increased levels of adult psychopathology. This suggests that, if the abuse is severe enough, it may have a long-term deleterious effect on mental health even in those from otherwise advantaged backgrounds. Childhood sexual abuse would usually appear to create much of its negative impact with family disadvantage being one element among many in laying a basis for adult difficulties, but more severe abuse may on occasion be so damaging as to overwhelm the protective influence of even the most stable childhood environment.

Background factors

The social class in which the subjects grew up did not emerge from this study as playing a significant role either as risk factors for abuse, or as possible contributors to adult psychopathology. Similarly neither unemployment nor poverty emerged as clear background factors of significance during childhood. These negative findings should be treated with considerable caution as most of our subjects grew up at a time and place in New Zealand where unemployment was virtually unknown and poverty by the standards of most societies was a rarity. The

impact of social class differences and social adversity cannot be adequately investigated in this population.

Study design

The study design employed a random community sample stratified on the basis of the postal phase into those reporting abuse and a control group who, it was hoped, would have experienced neither sexual nor physical abuse as children or adults. The information obtained at interview suggested that some 10% of women had been wrongly allocated with regard to childhood experiences. It could be argued that either the random allocation should have been left unchanged or that all these subjects should have been excluded. The randomisation was disrupted by excluding those who had given clear accounts of childhood sexual abuse on their postal questionnaire, but gave negative responses at interview and, on the other hand, including in the abused group, members of the original control group who reported abuse when interviewed. This pattern of re-allocation, we believe, reflected the best compromise for including all clear cases in the abused group, whereas excluding from the control group those in whom there was a strong reason to suspect abuse.

A deviation from the ideal randomised design of equal concern was the finding of 40 women among the controls who at interview disclosed sexual and physical abuse as adults, but who had not reported such experiences on the postal questionnaire. Again, there was an argument for excluding this group from controls, but for the data presented in this paper they were retained. A re-analysis of our data excluding the women whose abuse status altered at interview produced no significant changes in our findings. Conversely, excluding the adult abuse victims from the control group resulted in higher levels of significance for most of the correlations as the women reporting adult abuse were closer to the group abused in childhood than the other controls with regard to measures of psychopathology. We are confident, therefore, that the deviations from the ideal randomisation in our methodology were, on balance, either neutral or actively mitigated against demonstrating the reported positive associations.

This study relied on retrospective data. The temporal order of the various aspects in the matrix of disadvantage which contributes to adult problems is not immediately obvious, although attempts were made during the interview to separate those elements preceding or accompanying abuse from those that followed. In the subjects' accounts of their relationships with parent figures, it is often difficult to be certain that feelings and attitudes aroused by the abuse have not coloured the accounts provided of pre-existing relationships. Particularly in cases of intra-familial abuse, the subjects' judgements of their parents' capacity to care and show concern are likely to be affected. In the women's account of their temperament and behaviour as children, the higher rates of difficult behaviour and social problems with peers, although reported as preceding abuse, could easily have followed abuse and have been projected back in the unreliable process of autobiography. These are important caveats but against this must be placed the recognition that studies on the impact of childhood sexual abuse that attempt to cover a wide range of victims will always have to rely on retrospective data. In this sample only 37% made any form of disclosure within a year of the abuse and a mere 7.5% were reported to any form of authority or social agency. Even if all such subjects coming to official notice had been amenable to follow-up they would have represented a small and skewed sample of victims.

Risk factors

The data presented here can sustain a plausible hypothesis on how childhood sexual abuse relates to other elements in a wider matrix of family disadvantage to generate an increased vulnerability to psychiatric disorder. Such abuse, we believe, emerges most frequently against the background of a dysfunctional family in which the parents are either rendered incapable or unwilling to provide the consistent care and protection required by the developing child. In some cases parents who might otherwise have been effective are rendered dysfunctional by the pressures placed upon them by, for example, physical ill health, single parent status, or having more children than they can manage. In yet others, tensions between parents appear to lead to an environment of discord incompatible with effective care. The frequent co-existence of physical and sexual abuse, or the extensive use of physical punishment, probably reflects this failure to cope and the resort to increasingly punitive and ineffective methods of care and control. This dysfunctional family background, or total absence of a family in some cases, not only contributes to increased risk but also militates against providing effective support and aid to a child who has fallen victim to such abuse. The results of our study make clear that these very risk factors themselves make an independent contribution to increased levels of psychopathology as well as other negative outcomes in adult life.

A history of sexual abuse during childhood in an adult coming for psychiatric treatment is relevant.

The relevance would, from our data, rarely be in terms of a simple causal relationship. Sexual abuse, be it in children or adults, can produce immediate distress and generate a range of phobic and anxiety symptoms which may amount to a post-traumatic stress disorder (Brown & Fenkelhor, 1986; Burgess & Holmstrom, 1974; Mezey & Taylor, 1988; Beitchman *et al*, 1992*b*). In our women, abuse occurred a minimum of three years previously and, in the vast majority of cases, 10 or more years in the past. The disorders detected in those reporting abuse differed in frequency, but not in type, from those in controls. A specific 'post-sexual abuse syndrome' has been postulated, but we found no evidence for such a specific constellation of symptoms. This study supports the notion that childhood sexual abuse should, in most cases, be regarded as one element in a matrix of adverse family, social, and interpersonal experiences which increase the individual's vulnerability to psychiatric disorders. The exception to this general rule is in those exposed to the more severe forms of sexual abuse, where an increased vulnerability to adult psychopathology may be found despite the absence of other obvious developmental disadvantages.

Treatment

The exclusive focusing of therapy on those who have been sexually abused as children will often miss the point. The possibility exists that women who make use of denial and minimisation in coping with their abuse, fare better than those who try to come to terms with the experience by according it importance, and in some cases centrality, in their understanding of their own lives. This having been said, it may well be those women who have been most damaged by such abuse who reasonably enough give the experience prominence. To tell women to forget about their experiences of abuse is clearly as ineffective as it is insensitive. Equally, it could well be that to insist on a process of recalling and reliving in pursuit of 'mastering' an experience of abuse that a woman has consigned to the past may be damagingly meddlesome. It must be emphasised that many victims do not appear to show long-term impairment in their mental health and not all psychiatric problems in those who have been abused are attributable to that abuse. In short, treatment of psychiatric disorders in those with a history of sexual abuse in childhood should attend to the whole clinical picture of which abuse is usually but one element, albeit an important one. The empirically valid association between childhood sexual abuse and adult psychopathology needs to be transformed into psychologically and socially meaningful connections before its importance can be assessed, either in terms of therapy or strategies for secondary prevention. Links between childhood sexual abuse and disrupted development can be traced in our data but it is the meaning of those elements within the lived experience of the victim which determines the outcome.

Conclusions

This study places childhood sexual abuse within a matrix of developmental disadvantage and difficulty and, in so doing, could be regarded as proposing that such abuse is less destructive than previously suggested. The first point to make is that to regard adult outcome as the arbiter of childhood experience is to view the problem from a biased adult perspective. The women in our study uniformly described their experience in negative terms varying from confusing and disturbing to disgusting and overwhelmingly distressing and, even if there were no long-term adverse effects, the immediate impact would be enough to support an unequivocal condemnation of sexual contact between adults and children. Secondly, a history of childhood sexual abuse does correlate with an increased risk for a wide range of mental health problems to which it is associated even when allowance is made for the effects of family dysfunction. To argue that such abuse is best understood in most cases as operating in concert with other pathogenic influences, is in no way to diminish the importance of the experience, which is both damaging and preventable.

Acknowledgement

This research was supported by a grant from the Health Research Council of New Zealand.

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(*First received June 1992, final revision January 1993, accepted March 1993*)