

Fergusson DM, Lynskey MT, Horwood LJ. Childhood sexual abuse and psychiatric disorders in young adulthood: Part I: The prevalence of sexual abuse and the factors associated with sexual abuse. *Journal of the American Academy of Child and Adolescent Psychiatry*, 1996; 35: 1355-1364.

RUNNING HEAD: Prevalence and Predictors of Childhood Sexual Abuse

Corresponding Author: Associate Professor David M Fergusson
Christchurch Health and Development Study
Christchurch School of Medicine
Christchurch
New Zealand
Tel: (03) 3720-406
Fax: (03) 3720-405

Word Count: 6995

Childhood Sexual Abuse and Psychiatric Disorder in Young Adulthood:
Part I: The Prevalence of Sexual Abuse and Factors Associated with Sexual Abuse

DAVID M FERGUSSON PH.D., MICHAEL T LYNSKEY, M.SC.
and L JOHN HORWOOD, M.SC., B.A.

From the Christchurch Health and Development Study, Christchurch School of
Medicine, Christchurch, New Zealand

This research was funded by grants from the Health Research Council of New Zealand, The National Child Health Research Foundation, Lottery Health and the Canterbury Medical Research Foundation. We would like to thank Judy Martin from the Department of Psychological Medicine, University of Otago and the Sexual Abuse Co-ordinating Committee (Canterbury) for their assistance and advice in the preparation of this research.

ABSTRACT

Objective: This paper presents accounts of: a) the prevalence of childhood sexual abuse (CSA) and; b) social, family and related factors which are associated with increased risks of CSA using data gathered during an 18 year longitudinal study of a New Zealand birth cohort.

Method: A birth cohort of over 1000 Christchurch (New Zealand) born children was studied prospectively to the age of 16. At age 18 retrospective reports of CSA were obtained.

Results: 10.4% of the cohort (17.3% of females and 3.4% of males) reported having experienced CSA before the age of 16 years. Rates of severe abusive experiences involving intercourse were lower: 5.6% of females and 1.4% of males reported abuse involving attempted or completed intercourse. Multivariate analyses suggested that risks of CSA were elevated amongst females ($p < .0001$), those exposed to high levels of marital conflict ($p < .005$), those reporting low parental attachment ($p < .001$), those reporting high levels of paternal over protection ($p < .005$) and those with parents who reported alcoholism/alcohol problems ($p < .05$). The level of prediction of CSA from childhood and family factors was not sufficient to identify individuals at risk of CSA with any degree of accuracy.

Conclusions: CSA was not an uncommon experience amongst this cohort. Those most likely to be exposed to CSA were girls reared in families characterised by high levels of marital conflict, impaired parenting and in families having parents with adjustment problems.

Keywords: Childhood sexual abuse; longitudinal study; childhood factors; family factors; parental characteristics

In the last three decades there has been increasing research into the prevalence, correlates and consequences of childhood sexual abuse (CSA) (for reviews of this literature see Beitchman et al, 1992; Browne and Finkelhor, 1986; Finkelhor, 1990; 1994; Watkins and Bentovim, 1992). Broadly speaking, this research has suggested three major conclusions about these issues:

a) Exposure to sexually abusive behaviours during childhood is not an uncommon event with estimates of the prevalence of abuse typically suggesting that in the region of 10%-25% of females report exposure to CSA (Bagley and Ramsay, 1986; Finkelhor et al, 1990; Mullen et al, 1988; Sedney and Brooks, 1984) and in the region of 2% to 10% of males report exposure to CSA (Baker and Duncan, 1985; Finkelhor, 1984; Watkins and Bentovim, 1992);

b) Risks of abuse tend to be increased amongst children from home backgrounds characterised by marital dysfunction, impaired parenting and parent child relationships and from families in which there are parental adjustment problems (Brown and Anderson, 1991; Fergusson et al, submitted; Gruber and Jones, 1983; Madonna et al, 1991; Mullen et al, 1993; Paradise et al, 1994; Stern et al, 1995; Russell, 1986);

c) Those reporting CSA have increased risks of psychiatric disorders with these associations persisting when due allowance has been made for confounding factors (Fergusson et al, submitted; Mullen et al, 1993).

Research in this area has been characterised by a number of methodological difficulties that have centred around issues of sampling, measurement, and the control of confounding factors (Cahill et al, 1991; Plunket and Oates, 1991). It has been suggested that the most effective approach to addressing these problems would be through prospective longitudinal studies of general population samples that examine the relationship between exposure to CSA in childhood and later adjustment (Cahill et al, 1991; Plunket and Oates, 1991).

However, there are a number of practical difficulties in mounting a prospective study of CSA. These centre around the collection of CSA data during childhood using a general population sample. First, the prospective collection of CSA data would require the use of parents, teachers and other caregivers as informants about the child's exposure to CSA. It is likely that many of these individuals would find questioning about CSA offensive or threatening. More importantly, the disclosure of CSA during childhood would require, ethically, that steps were taken to protect the child's interests following disclosure and such intervention would clearly change the processes being studied. For these reasons, a fully prospective study of CSA in a general child population poses what appear to be insurmountable practical difficulties.

An alternative strategy to the population based study of CSA is to use a general longitudinal design to collect details on social, family and related conditions during childhood and into young adulthood. When cohort members become young adults it would then be possible to collect retrospective reports of experiences of CSA in a way that avoids the difficulties associated with the prospective collection of CSA data.

This paper is the first in a series of two linked papers describing a study that has used this type of design. The essential elements of this design are:

- i) Over the period of childhood (birth to 16 years) extensive information on childhood family, social, economic and related circumstances was collected on a birth cohort of over 1000 New Zealand children.
- ii) At 18 years subjects were asked to provide retrospective reports of CSA experiences during childhood.
- iii) Concurrently with the reporting of CSA, comprehensive measures of mental health and personal adjustment were obtained.

In this paper we examine two general issues relating to the prevalence and correlates of CSA as reported by cohort members at the age of 18 years. First, the paper aims to provide a descriptive account of reports of CSA

including the nature of the abuse, the severity of the abuse incident(s), and the characteristics of perpetrators.

Second, the analysis aims to examine the extent to which reports of CSA at age 18 may be predicted from a range of prospectively measured risk factors that have been identified in the literature, on the basis of retrospective studies, as being predictors or correlates of CSA. These factors include measures of impaired parenting or poor parent child relationships (Fergusson et al, submitted; Madonna et al, 1991; Mullen et al, 1993; Paradise et al, 1994; Stern et al, 1995); childhood exposure to marital conflict, marital dysfunction and parental separation (Fergusson et al, submitted; Finkelhor, 1984; Gruber and Jones, 1983; Madonna et al, 1991; Mullen et al, 1993; Paradise et al, 1994; Russell, 1986; Stern et al, 1995); parental psychopathology and adjustment problems (Brown and Anderson, 1991; Fergusson et al, submitted; Madonna et al, 1991; Mullen et al, 1993; Paradise et al, 1994; Stern et al, 1995).

METHOD

The data reported here were collected during the course of the Christchurch Health and Development Study. The Christchurch Health and Development Study is a longitudinal study of a birth cohort of 1265 children born in the Christchurch (New Zealand) urban region during mid 1977.

These children have been studied at birth, four months, at annual intervals to the age of 16 years and again at age 18 years. An overview of the study design has been given previously (Fergusson et al, 1989). The data analysed in this report were measured in the following ways.

Reports of Childhood Sexual Abuse

At age 18 young people were interviewed in private by trained female survey interviewers who administered a 1.5 to 2 hour interview on a range of mental health issues. As part of this interview young people were asked whether, before the age of 16, anyone had attempted to involve them in a series of 15 sexual activities when they did not want this to happen. These activities spanned: a) non-contact episodes including indecent exposure, public masturbation by other and unwanted sexual propositions or lewd suggestions; b) incidents involving sexual contact including sexual fondling, genital contact, and attempts to undress the respondent; c) incidents involving attempted or completed oral, anal or vaginal intercourse.

Young people who reported having experienced any of these behaviours before the age of 16 were then asked, for each perpetrator involved, a series of questions concerning:

The nature and extent of abuse. a) the age at which the abuse occurred; b) the number of events involving that perpetrator and, in the case

of multiple incidents, the duration of abuse; c) the type of abuse that occurred and the circumstances surrounding this abuse; d) whether or not the abuse involved physical restraint; e) whether or not they had perceived the events described as abuse at the time they occurred and at the time of the interview.

Characteristics of the perpetrator. The young people were also asked a series of questions concerning the characteristics of the perpetrator including: a) their age; b) gender and; c) relationship to the young person.

Abuse disclosure and treatment seeking. Young people were asked whether they had disclosed the abuse to anyone and, if so, to whom they had disclosed the abuse and the responses to this disclosure. In addition, young people were asked whether they had sought professional advice or counselling for CSA.

Information on these issues was gathered using a combination of precoded survey items and open ended responses. In all cases signed and informed consent for research participation was obtained from the respondents.

Prospectively Measured Risk Factors

a) Demographic Factors

Ethnicity. The young people were classified as being of either European/Pakeha or Maori/Pacific Island ethnicity on the basis of parental reports ethnicity at the time of the child's birth.

Socioeconomic Status. Family socioeconomic status at the time of the child's birth was assessed using the Elley and Irving (1976) scale of socioeconomic status for New Zealand.

Maternal education. Maternal level of education was assessed at the time of the child's birth using a three point scale which reflected the highest level of educational achievement attained. This scale was: 1, mother lacked formal educational qualifications; 2, mother had secondary level educational qualifications; 3, mother had tertiary/technical qualifications.

b) Family Stability and Marital Conflict

Changes of parents. Comprehensive data on changes of parents were collected at annual intervals (Fergusson et al, 1992). This data was used to construct a measure of whether or not the child had experienced a change of parent figure during the period from birth to the age of 15. A change of

parent was counted if a parent left the family as a result of family breakdown or death or entered the family as a result of remarriage or reconciliation.

Step-parenthood. Using the data gathered at annual intervals on patterns of parental change a measure of whether or not the child had lived with a step-parent at some time during the interval from birth to 15 years was constructed.

Marital conflict. Parents were questioned annually on three items which described the quality of marital relationships. These items were: a) whether the parents had engaged in prolonged arguments during the last 12 months; b) whether the child's mother reported being assaulted by her spouse in the last 12 months and; c) whether the child's mother had reported experiencing sexual difficulties in the last 12 months. These items were combined to produce a scale measure of the extent to which the child was exposed to marital conflict (Fergusson et al, 1992).

c) Parenting and Parent/Child Relationships

Childhood disadvantage. To assess the extent to which cohort members had been exposed to family and childhood adversity, a general family functioning index was used. The construction of this measure was based on a series of 39 prospectively measured items relating to various aspects of family functioning and child rearing practices including: parental

offending and substance use behaviours, mother/child interaction patterns, childrearing practices, measures of childhood experiences, family stability and family conflict. This index has been described previously and has been shown to be strongly predictive of multiple problem behaviours (Fergusson et al, 1994).

Parental attachment. Parental attachment was assessed at age 15 years using the parental attachment scale developed by Armsden and Greenberg (1987). The full parental attachment scale was used in this analysis and this scale was found to have good reliability ($\alpha = .87$).

Parental bonding. To measure parental bonding, the maternal and paternal care and protection scales of the Parental Bonding Instrument (PBI; Parker et al, 1979) were administered to the young people at the age of 16 years. The young person was asked to rate each of their parents on the PBI items describing the quality of maternal and paternal care and protection throughout their childhood. The reliabilities of the resulting scale scores were assessed using coefficient alpha and found to be good: maternal care ($\alpha = .89$); paternal care ($\alpha = .91$); maternal over protection ($\alpha = .85$); paternal over protection ($\alpha = .87$)

d) Parental Adjustment

Parental illicit drug use. This was measured when the sample members were 11 years old and assessed the extent to which the young person's parents reported that they used cannabis or other illicit drugs. On the basis of this questioning 24.9% of the sample were classified as having parents who used cannabis or other illicit drugs.

Parental alcoholism/alcohol problems. At age 15 the young person's parents were asked whether they had a history of alcoholism or problems with alcohol. These reports were combined to form a dichotomous measure of whether or not the young person's parents reported experiencing alcoholism or problems with alcohol. On the basis of this classification 12.2% of the sample were classified as having a parent who experienced alcoholism or problems with alcohol.

Parental psychiatric illness/suicide attempts. At age 15 the young person's parents were asked if they had a history of anxiety disorders, depressive disorders, other psychiatric illness or attempted suicide. On the basis of responses to this questioning 29.9% of the sample were classified as having a parental history of psychiatric illness/suicide attempts.

Parental criminal offending. At age 15 the young person's parents were asked if they had a record for criminal offending. On the basis of

responses to this questioning 13.3% of the sample were classified as having a parental history of offending.

Sample Size

The analyses reported in this paper were based on a sample of 1019 respondents. This sample represents 80.6% of the initial cohort of 1265 children and 92.3% of all cohort members still alive and resident in New Zealand at the age of 18 years. Losses to follow up arose from outmigration from New Zealand (57%), refusal to participate in the research (35%) and mortality (8%).

RESULTS

The Prevalence and Characteristics of Reports of CSA

Of the 1019 subjects interviewed at age 18, 106 (10.4%) reported exposure to CSA before their 16th birthday. The rate of reported CSA amongst females (17.3%) was over five times higher ($p < .001$) than the rate reported by males (3.4%). Examination of CSA reports suggested that these varied markedly in the severity and extent of abuse ranging from single incidents of non-contact abuse to repeated episodes of sexual violation. To classify the reports of abuse within the sample young people were classified into four groups:

- a) Young people who reported no exposure to CSA. This group

comprised 89.6% of the cohort studied.

b) Young people reporting non-contact abuse including indecent exposure, public masturbation by others or indecent suggestions. 1.8% of males and 12.0% of females reported non contact abuse.

c) Young people who reported abuse involving sexual contact or genital stimulation but excluding vaginal, oral or anal intercourse. This type of abuse was reported by 2.8% of males and 12.6% of females.

d) Young people who reported incidents of CSA that involved attempted or completed vaginal, oral or anal intercourse. This type of abuse was reported by 1.4% of males and 5.6% of females.

This classification was made on the basis of examination of the full report of the sexual abuse incident(s) reported by the young person.

The 106 subjects reporting CSA described a total of 132 perpetrators varying in age from 7 years to over 65 years (median age = 22). The great majority (93.9%) were male and only eight respondents reported CSA by a female abuser. Table 1 shows the relationship between the respondent and the CSA perpetrator for the 132 perpetrators. This Table suggests that just over one fifth (23.5%) of the perpetrators were members of the respondent's family; nearly half (47.7%) of perpetrators were non family members known to the respondent including family friends (18.2%), the respondent's

boyfriend or girlfriend (6.8%) and acquaintances of the respondent (22.7%); and just over a quarter (28.8%) of perpetrators were strangers.

INSERT TABLE 1. HERE

While family members were involved in only a minority of abuse incidents, further analysis showed that there were strong associations between the extent and severity of abuse and the type of perpetrator. Incidents involving family members were more likely to be severe and repeated: 61.3% of CSA episodes involving family members involved attempted or completed intercourse and in 71.0% of cases more than one incident was involved. In contrast, the rates of intercourse or repeated incidents were far lower amongst respondents reporting abuse by acquaintances or strangers.

Reactions to CSA varied widely and depended strongly on the nature and extent of the abuse. Reactions to non-contact abuse were mild and, of those reporting non-contact abuse, only 20.8% perceived the incident as being abusive at age 18 and none of those reporting non-contact abuse had sought treatment for CSA. Reactions were more marked amongst those reporting CSA involving contact but not involving attempts at intercourse: 45.7% believed as 18 year olds that the incident was abusive and 15.2% had sought treatment. Reactions to CSA were most marked amongst those

reporting CSA involving intercourse with 83.3% of this group believing the episode was abusive and 38.9% seeking treatment for CSA.

The majority of those reporting CSA (86.8%) indicated that they had disclosed sexual abuse to at least one other person prior to the interview at age 18. These disclosures typically involved parents or friends of the young person. The majority (91.2%) of those reporting prior disclosure of CSA reported that the reaction of these confidants had been supportive and helpful and only eight reported non-supportive or hostile responses to their disclosure.

Interviewers were asked to report on the extent to which CSA questioning led to distress or other adverse reactions in the respondent. The majority of those disclosing abuse showed no marked reaction to abuse questioning. However, in 17 cases mild distress reactions to the disclosure of CSA were noted, in four cases symptoms of moderate distress were noted and one subject was described as being severely distressed by questioning. While interviewers were instructed to cease CSA questioning if symptoms of distress became evident, in all but one case subjects showing signs of distress indicated that they wished to continue with the interview.

Childhood Factors Associated with CSA

Table 2 examines the relationships between the severity and extent of reported CSA and a series of prospectively measured childhood and family factors including: measures of family socio-demographic background; measures of family stability and family conflict; measures of parenting and parental attachment; and measures of parental adjustment. For ease of presentation all measures have been expressed as dichotomous variables. Each comparison has been tested for significance using the Mantel-Haenszel chi-square test of linear trend.

Inspection of the Table yields the following conclusions:

Sociodemographic variables. There was evidence to suggest that risks of abuse were significantly related ($p < .001$) to the child's gender with those reporting CSA being female in approximately 80% of cases. There were no significant associations between the extent of CSA and family socioeconomic status ($p > .90$) or ethnicity ($p > .60$). There was however, evidence of linkages between the extent of CSA and maternal education with maternal educational attainment tending to decline with increasing severity of CSA ($p < .005$).

Family stability and conflict. Those reporting CSA were more likely to be exposed to parental divorce/separation ($p < .005$), were more likely to

be raised in a family with a step-parent ($p < .001$) and were more likely to be exposed to high levels of parental conflict ($p < .005$).

Parenting and parent/child relationships. Those reporting CSA tended to experience more adverse childhood circumstances ($p < .001$), to have lower levels of attachment with parents ($p < .001$) and to report poorer parental bonding including low maternal and paternal care ($p < .001$) and high maternal and paternal (over) protection ($p < .05$).

Parental adjustment. Those reporting CSA had higher levels of exposure to parents with alcohol problems or alcoholism ($p < .005$), parents who used illicit drugs ($p < .005$) and parents who reported involvement in criminal offending ($p < .05$). There was, however, no significant association ($p > .80$) between exposure to CSA and rates of parental psychiatric illness.

It is notable that in all cases in which risk factors were found to be associated with CSA there were consistent tendencies for the rate of adverse conditions to increase with increasing severity of CSA.

INSERT TABLE 2. HERE

The Net Associations between Childhood and Family Factors and CSA

To estimate the net effects of the risk factors in Table 2 on risks of CSA, the four level classification of CSA was regressed on the measures in

Table 2 to identify the best fitting model of risk factors. Model fitting was conducted using both forward and backward methods of elimination to identify a stable core of predictive factors. The final model is shown in Table 3 which gives the standardised regression coefficient for each of the factors that was significant in the equation and its associated level of significance.

Table 3 shows that five factors were predictive of reported CSA at age 18 years. These factors were: gender ($\beta = .164, p < .0001$); parental conflict ($\beta = .111, p < .005$), parental attachment ($\beta = -.123, p < .001$), paternal over protection ($\beta = .107, p < .005$) and parental alcoholism/alcohol problems ($\beta = .086, p < .05$). The multiple correlation between CSA and these risks factors was .32 suggesting that in the region of 10% of the variance in reports of CSA could be predicted from gender, parental conflict, parental attachment, paternal over protection and parental alcoholism/alcohol problems.

INSERT TABLE 3. HERE

To illustrate the extent to which these factors were associated with risks of CSA, a risk factor score was constructed by solving the regression equation shown in Table 3 for each subject. This gave for each subject a score reflecting the subject's overall exposure to the weighted risk factors

for CSA. The resulting score was then classified into quintiles and the rates of CSA and severe CSA for each group were computed. These results are displayed in Table 4 which shows the relationships between the extent of exposure to childhood risk factors and rates of both CSA and severe CSA involving intercourse.

Table 4 shows that when the aggregate effects of the risk factors were taken into account, there was evidence of a relatively strong gradient in risks of CSA. Subjects in the highest quintile of the risk distribution (who were characterised by female gender, having higher exposure to parental conflict, reporting lower parental attachment, higher paternal over protection, and being more likely to be exposed to a parent with alcoholism/alcohol problems) had rates of CSA that were 14.3 times higher than the rates of CSA for those in the lowest quintile of the risk distribution. Similarly, 11.0% of those in the highest quintile of the risk factor score were exposed to severe CSA involving attempted or completed intercourse while no individual in the lowest quintile of the distribution was exposed to such abuse.

INSERT TABLE 4. HERE

One interpretation of the regression results in Table 4 is that the associations between childhood or family factors and risks of CSA arise

because the variables in this analysis may identify family situations that have high risks of containing CSA perpetrators. To address this issue the data were re-analysed excluding incidents of intra-familial CSA. This showed that the predictors of non familial abuse were similar to the predictors of all incidents of CSA. Predictors of non-familial abuse included gender ($\beta = .17, p < .001$), marital conflict ($\beta = .08, p < .05$), parental attachment ($\beta = -.13, p < .005$), paternal over-protection ($\beta = .07, p < .07$), and parental alcoholism ($\beta = .07, p < .07$). The implication of this result is that the association between CSA and the risk factors analysed in Tables 3 and 4 did not arise because these risk factors are indicative of families likely to contain CSA perpetrators.

A question of some interest is whether the risk factors for CSA in males differ from those in females. Unfortunately, given the low base rate of CSA reported by males (3.4%), this issue proved difficult to explore with any degree of precision. Nonetheless, tests of interactions between gender and risk factors failed to reveal any significant interactions between gender and the risk factors listed in Table 3 when these factors were considered as predictors of CSA.

DISCUSSION

This paper has examined the prevalence of CSA in a birth cohort of 18 year olds and the extent to which reports of CSA at age 18 years could be predicted from prospectively measured childhood and family factors. The major findings and implications of this analysis are reviewed below.

The Prevalence and Characteristics of CSA

Just over 10% of this cohort reported childhood CSA with 17.3% of females and 3.4% of males reporting experiences of CSA. These prevalence estimates fall within the range typically reported in prevalence studies of CSA which have suggested that between 2% to 10% of males (Baker and Duncan, 1985; Finkelhor, 1984; Watkins and Bentovim, 1992) and between 10% to 25% of females (Bagley and Ramsay, 1986; Finkelhor et al, 1990; Mullen et al, 1988; Sedney and Brooks, 1984) report CSA. In both cases, the prevalence estimates for this study fall toward the lower end of this range of estimates. There are two possible explanations for this. First, it may be that the estimates in this study were influenced by under-reporting and it may be that, at age 18 years, a number of those exposed to abuse may not have been emotionally ready to disclose CSA. Alternatively, it is possible that the relatively low rate of CSA for this sample may reflect a cohort effect. In particular, the members of this sample spent their childhood during a period in which there was increasing public debate about

and awareness of CSA and it may be that rising public recognition and concerns about CSA reduced the extent of exposure to CSA for this cohort.

An important finding that emerges from this study is that overall prevalence estimates are of limited value as guides to the number of children who are exposed to distressing or harmful episodes of CSA. In particular, analysis suggested the presence of a spectrum of sexual abuse ranging from relatively mild non-contact episodes to severe and repeated sexual violation with these episodes producing widely varying reactions to abuse. It would appear potentially misleading to classify all of these episodes under the general rubric of sexual abuse with the implication that all those so classified form an homogeneous population exposed to a common set of experiences. Also, it is quite clear that the types of sexual abuse that are likely to cause major concerns are those involving attempted intercourse and particularly repeated attempts. While the prevalence of these incidents was far lower than the overall prevalence rate, the findings of this study highlight the fact that exposure to severe episodes of abuse was not an uncommon event for females in this sample. Before the age of 16 years more than one in every 20 young women in this cohort had been exposed to an episode of CSA involving attempted or completed vaginal, oral or anal intercourse. Given the possibilities of under-reporting described above, it is likely that

this statistic gives a lower limit estimate of the number of females exposed to severe CSA during childhood.

Rates of severe CSA were lower for males but in the region of one in every 70 males reported exposure to CSA involving attempted or completed intercourse.

The profile of perpetrators that emerged from this study is generally consistent with previous population studies (Anderson et al, 1993; Baker and Duncan , 1985; Bagley and Ramsay, 1986; Finkelhor et al, 1990). The great majority were male, the age range of perpetrators was wide and most were known to the respondent prior to the episode(s) of CSA. However, an interesting finding to emerge from this analysis was that the extent of abuse varied with the nature of the relationship between the respondent and the perpetrator with episodes involving family members more often involving intercourse and occurring on multiple occasions. These results suggest that, while intrafamilial abuse is less common than abuse by non family members, from a clinical viewpoint intrafamilial abuse is likely to make a major contribution to the number of children and young people exposed to severe damaging abuse experiences.

There have been ongoing debates about the extent to which CSA questioning may be distressing to those who participate in research studies

(Merry and Andrews, 1991). The present study provided an opportunity to examine the extent interviewing concerning CSA in a general population sample had observable effects on the respondents. This suggested that, for most subjects, CSA interviewing did not evoke observable distress reactions or difficulties. However, a minority of subjects showed some distress to CSA questioning but in only one case was the severity of this reaction such that interviewing was terminated. These results suggest that, while CSA interviewing may evoke distress reactions in a minority of subjects, severe distress reactions to this interviewing are uncommon.

The Childhood Correlates of CSA

An important feature of the present study was that it provided an opportunity to examine the extent to which it was possible to predict reports of CSA on the basis of prospectively collected data on childhood, family and associated factors.

The findings of this study support the conclusions drawn by Finkelhor (1993) that risks of CSA are not related to socioeconomic factors. In particular, rates of CSA were not significantly higher in families of low socioeconomic status or in families of Maori or Pacific Island ethnic status. Nonetheless, there was a small but detectable tendency for risks of CSA to be related to maternal education.

There were pervasive relationships between measures of family change and conflict and risks of CSA. Young people reporting CSA had more often experienced parental separation or divorce, had more often been exposed to high levels of marital conflict and had more often been reared in families with step parents. These findings are consistent with previous studies that have suggested that risks of CSA are elevated in families subject to parental divorce, family change or marital conflict (Fergusson et al, submitted; Finkelhor, 1984; Gruber and Jones, 1983; Mullen et al, 1993; Paradise et al, 1994; Russell, 1986; Stern et al, 1995).

There were also consistent associations between CSA and measures of parenting and parent/child relationships. Those reporting CSA more often came from families characterised by adverse childhood circumstances and more often reported lower parental attachment and impaired parental bonding. These results are again consistent with previous findings (Fergusson et al, submitted; Mullen et al, 1993; Madonna et al, 1991; Paradise et al, 1994; Stern et al, 1995) that have suggested linkages between parental behaviours and risks of CSA.

Finally, those reporting CSA were also more often reared in home environments with parents who experienced alcoholism/alcohol problems, reported illicit drug use or engaged in criminal behaviours. These findings are consistent with previous studies that have suggested higher rates of

psychopathology and adjustment problems in the parents of children exposed to CSA (Brown and Anderson, 1991; Fergusson et al, submitted; Mullen et al, 1993; Paradise et al, 1994; Stern et al, 1995).

The analysis was then extended to a regression model that examined the net contribution of the risk factors described above to risks of CSA. This analysis suggested that five factors were predictive of risks of CSA: gender, marital conflict, parental attachment, paternal over protection and parental alcoholism/alcohol problems. Those at highest risk of CSA were females, those exposed to high levels of marital conflict, those reporting low parental attachment, those reporting high levels of paternal over protection and those with parents who reported alcoholism/alcohol problems.

There are two possible explanations for these general linkages between family and childhood factors and risks of abuse. First, it may be suggested that these associations arise because many of the factors identified are symptomatic of environments that contain CSA perpetrators. However, it seems unlikely that this explains the associations between CSA and childhood factors for at least two reasons. First, the majority of CSA incidents (86.8%) did not involve intrafamilial abuse. This was reinforced by the findings that the same set of risk factors predicted risks of CSA not involving family members. On both grounds it seems unlikely that the linkages between childhood factors and risks of CSA arose principally

because these factors were indicators of home environments likely to contain CSA perpetrators.

The alternative explanation is that the associations between CSA and childhood factors arise because the childhood factors identified reflect home environments which in various ways increase childhood exposure to risks of CSA. This could occur through a variety of mechanisms including inadequate parental supervision, inadequate education about the risks of CSA and, more generally, through exposure to a social environment and social context in which risks of exposure to CSA were increased.

There have been suggestions in the literature on child abuse in general that it may be possible to develop at risk indices that identify children who are at high risk of abusive experiences (Bergner et al, 1994; Finkelhor, 1993). The level of prediction that emerges from this prospective study of CSA does not support the view that accurate identification of children exposed to CSA is likely to be achieved on the basis of measures of social background, family environment or associated features. While it is clear that risks of CSA did vary systematically with family and related factors, the level of prediction achieved was not strong and even amongst those with high risk profiles, individuals were more likely not to report abuse than to report abuse.

Limitations of the Present Study

In common with all studies of CSA the present study suffers from a number of unavoidable limitations. The most important of these concerns the accuracy with which respondents were able to report CSA. Inevitably in such studies reliance has to be placed on the reports of a subject about events that have occurred in the past with this disclosure evoking potentially painful or distressing memories. Under these circumstances it would be unrealistic to expect that retrospective reports of CSA give an exact account of the extent of exposure to CSA during childhood (Cahill et al, 1991; Plunket and Oates, 1991). Difficulties in the reporting of CSA have two implications for the analysis reported in the present study. First, it is likely that prevalence estimates may provide lower limit estimates of the true prevalence of childhood CSA. Second, it is likely that imprecision in the reporting of CSA may have reduced the precision of prediction of CSA on the basis of childhood factors.

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Table 1. Relationship of CSA perpetrators to respondents

Relationship of Perpetrator	N	% of Perpetrators
<u>Abuse by Family Member</u>		
Natural Parent	2	1.5
Step-parent	7	5.3
Sibling or Step-sibling	9	6.8
Other Relative	13	9.8
Abuse by Any Family Member	31	23.5%
<u>Abuse by Acquaintances</u>		
Family Friend	24	18.2
Boyfriend/Girlfriend	9	6.8
Other Acquaintance	30	22.7
Abuse by Any Acquaintance	63	47.7
<u>Abuse by Strangers</u>	38	28.8
N	132	

Table 2. Associations between severity of CSA and rates (%) of disadvantageous socio-demographic, family and parental characteristic

	EXTENT OF ABUSE				p
	None	Non-contact	Contact	Intercourse	
Gender (% Female)	46.7	91.7	82.6	80.6	<.001
<u>Socio-demographic Characteristics</u>					
Ethnicity (% Non European)	13.8	4.2	19.6	13.9	>.60
Socio-economic status (% from family of unskilled or semi skilled SES)	25.4	4.2	21.7	33.3	>.90
Maternal Education (% No educational qualifications)	47.5	50.0	67.4	63.9	<.005
<u>Family Stability</u>					
% Experiencing at least one change of parents before 15	33.5	27.8	43.2	60.0	<.005
% Having a step-parent before age 15	15.2	9.5	26.2	45.5	<.001
% In highest quartile of marital conflict score	23.8	22.2	35.9	45.5	<.005
<u>Parenting and Parent-Child Interaction</u>					
Childhood disadvantage (% in most disadvantaged quartile)	23.8	17.4	41.9	58.3	<.001

Table 2. continued

	EXTENT OF ABUSE				p
	None	Non-contact	Contact	Intercourse	
% In lowest quartile of parental attachment score	24.2	45.5	42.5	55.9	<.001
% In highest quartile of paternal (over) protection score	23.1	31.8	30.6	40.0	<.05
% In lowest quartile of paternal care score	22.1	45.5	33.3	50.0	<.001
% In highest quartile of maternal (over) protection score	23.7	36.4	37.5	62.5	<.001
% In lowest quartile of maternal care score	23.9	22.7	35.0	50.0	<.001
<u>Parental Adjustment</u>					
% Parental illicit drug use	22.7	40.9	31.8	41.2	<.005
% Parental alcoholism/alcohol problems	10.8	13.6	19.5	26.5	<.005
% Parental psychiatric illness/suicide attempts	29.8	31.8	24.4	35.3	>.80
% Parental criminal offending	11.8	9.1	19.5	23.5	<.05
N	913	24	46	36	

Table 3. Standardised regression coefficients linking gender, marital conflict, parental attachment, paternal over-protection and parental alcoholism/alcohol problems to risks of CSA

Predictor	Standardised Regression Coefficient	p
Gender	0.164	<.0001
Marital Conflict	0.111	<.005
Parental Attachment	-0.123	<.001
Paternal Over-protection	0.107	<.005
Parental Alcoholism/Alcohol Problems	0.086	<.05
Multiple Correlation	0.323	<.0001

Table 4. Rates (%) of: a) Any CSA and; b) CSA involving attempted or completed intercourse for each quintile of the risk score distribution

Risk Score (Quintiles)	Any Abuse (%)	Abuse Involving Attempted or Completed Intercourse (%)
1 (Low)	1.8	0.0
2	1.8	1.2
3	6.8	2.5
4	11.7	3.1
5 (High)	25.8	11.0
p	<.0001	<.0001