

Fergusson DM. The Christchurch Health and Development Study: An overview and some key findings. *Social Policy Journal of New Zealand*, 1998; 10: 154-176.

**The Christchurch Health and Development Study: An Overview
and Some Key Findings**

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Introduction

In the last decade there have been growing social, political and public concerns about a series of issues that centre around the well being of children and their families. These issues have spanned such areas as child abuse and neglect, truancy, juvenile crime, substance abuse, mental health problems and youth crime (Education and Science Select Committee, 1995; Drugs Advisory Committee, 1995; Howden-Chapman, Bushnell & Carter, 1994; Ministry of Health 1994; Public Health Group, 1996). In all areas there has been a growing perception that problems amongst children and their families are on the increase. These perceptions are not without foundation. For example, in a recent major review Rutter and Smith (1995) have examined time trends for a series of psychosocial problems of youth (including; crime, substance use, depression, suicide and eating disorders) over the last 50 years in European countries. These findings provided clear evidence to suggest that rates of these conditions had been increasing, with the rate of increase being most marked since the 1970's. Whilst a comparable analysis of New Zealand data has not been conducted, there is evidence of similar time trends in New Zealand data. For example, Deavoll, Mulder & Beautrais, 1993, examined time trends in New Zealand suicide rates over a 100 year period. The result of this analysis suggested clear increases in male youth suicide rates, with this increase becoming apparent during the mid 1970's.

The perception that childhood and family problems are on the increase has led to a search for solutions and, particularly, attempts to identify causative factors that may contribute to childhood and adolescent problems. It has, for example, been variously argued that increasing childhood and youth problems reflect the effects of such factors as single parenthood, rising rates of child abuse and neglect or family violence. Implicit in these

arguments is the assumption that some specific set of circumstances or conditions acts in ways that increase childhood risks. Often these arguments have been speculative and have been based on a combination of strong assumptions and weak evidence. Clearly, to move beyond such argument requires a basis of research and evidence that provides systematic tests of the extent to which the putative causes of childhood and adolescent problems, do in fact, contribute to risks of these problems.

One of the best methods of examining such issues, is through the use of longitudinal research designs which make it possible to examine the ways in which variations in social, family and associated conditions in childhood are related to the individual's longer term adjustment and well being. The purpose of this review is to provide an overview of a large New Zealand longitudinal study (the Christchurch Health and Development Study) that has now been running for a period of 21 years and to present a summary of the research findings relevant to a series of issues that have been of continuing interest in social policy debates in recent decades. These issues include:

1. The extent to which membership of a single parent family is a factor that contributes to the individual's risk of later academic underachievement and problems of social adjustment.
2. The extent to which exposure to sexual abuse in childhood is a factor that influences the individual's longer term social adjustment and mental health.
3. The extent to which exposure to childhood physical abuse is a factor that influences the individual's longer term adjustment and mental health.

4. The extent to which childhood exposure to interparental violence influences the individual's longer term adjustment and mental health.
5. The factors contributing to the development of severe social maladjustment in adolescence.
6. Factors associated with youth suicide.

An Overview of the CHDS

Research Design

The Christchurch Health and Development Study is a longitudinal study of a birth cohort of 1,265 children born in the Christchurch urban region during mid 1977. The cohort was obtained by contacting the mothers of all live born children giving birth in all maternity units, both public and private, in the Christchurch urban region during a four month period and enlisting their participation in the research. Of the 1,310 mothers giving birth at this period, 1,265 (98%) agreed to participate in the research. Members of this birth cohort have now been studied at birth, 4 months, one year, annual intervals to the age of 16 and again at age 18.

Data Collection

Data collection in the study has been based on a multiple informant model in which data has been collected from several sources. The major sources of data include:

1. **Parental Interviews.** These were conducted with the child's mother, or in cases of single parent families with a male head the child's father, at the child's home. Interviews typically lasted for between 1-2 hours and addressed a range of issues relevant to the child's stage of development.
2. **Teacher Reports.** From the age of 6 to 12 years, teacher reports on child academic achievement and social adjustment were obtained by supplying all class teachers of CHDS children with a set of standardised questionnaires. Compliance was very high with completed questionnaires being obtained for over 98% of children in any given year.
3. **Child Assessments and Interviews.** From the age of 8 to 18 years, children were assessed on educational achievement was assessed using standardised tests of intelligence, reading, mathematical and scholastic ability and were also interviewed about a wide range of topics relevant to their developmental stage.
4. Information from parent, self and teacher assessments were supplemented by further information obtained from official records including; police records, hospital notes and information from the school dental service.

The net result of these procedures was that by the age of 18, the database of the CHDS comprised over 30 million characters of data describing the 18 year life history of the cohort.

Subject Confidentiality

A key issue in collecting large amounts of personal data on a population sample is clearly that of protecting the privacy and confidentiality of sample members. The CHDS has three general safeguards aimed at protecting confidentiality.

First, for all aspects of data collection, signed and informed consent for the Study to use and analyse the data has been obtained. In all cases, the Study undertakes that no data associated with any individual or their family will be released without the individual's written consent. All subjects are advised that they can withdraw their consent for the data to be analysed at any time. The extent of consent gathered over the course of the Study can be judged from the fact that the CHDS currently holds over 40,000 signed consent forms indicating agreements to participate in various aspects of the study.

The consent forms signed by sample members, in effect, define a contract between the CHDS and participants in which the CHDS undertakes to safeguard the confidentiality of the information provided. This confidentiality is achieved by a data security system in which all computer records describing subjects are identified by an anonymous code number only, and no information identifying the family or individual appears on this record. The records in the database are linked to the individual's name by a master name code that is held by the CHDS and kept under lock and key. The security of the data is very much protected by the complexity of the database and the complexity of the rules linking the numeric data in the computer records to survey report data. This complexity is such that it would require an indepth working knowledge of the construction of the database for anyone to be able to access

personal information about an individual or their family. This working knowledge is restricted to the professional staff of the CHDS.

Collectively, these three safeguards (signed informed consent; the use of anonymous computer records and the complexity of the database construction) creates a situation in which the only circumstances under which participant confidentiality could be breached would arise from a deliberate breach of the confidentiality agreement by a member of the CHDS staff. The extent of trust that sample members have in the integrity of the CHDS is clearly evidenced by the high rates of participation and cooperation that have continued over the course of the study.

Research Participation Rates and Sample Selection Bias

Research participation in the CHDS has been very high and this may be judged from the fact that at age 18, 1,025 of the original cohort of 1,265 children agreed to participate in the research. This sample represented 81% of the original cohort and 92% of the cohort still alive and resident in New Zealand. Table 1 gives an account of the reasons for non participation for the 240 subjects lost to follow up by the age of 18 years. The major reason for loss to follow up was out migration from New Zealand with 56% of losses occurring for this reason. This was followed by subject refusals to continue participation in the study with 35% of losses arising from this source. Death accounted for 8% of the sample loss. Only two subjects were lost to follow up as a result of being untraced.

INSERT TABLE 1

Over the years, a number of analyses have been conducted to examine the extent to which sample losses were non random and the effects of selective sample attrition on design validity (eg Fergusson & Lloyd, 1991). These analyses have suggested that there are small but detectable tendencies for those lost to follow up, to more frequently come from socially disadvantaged background characterised by single parenthood, limited maternal education and low socio-economic status. However, statistical corrections designed to take into account non random sample losses have invariably suggested that the effects of selective sample attrition on the study validity of conclusions is negligible.

Single Parenthood and Child and Adolescent Academic Achievement and Adjustment

In the last four decades most developed countries, including New Zealand, have experienced an increase in the number of children being reared in single parent families. In turn, the rise of the single parent family has been accompanied by recurrent concerns and claims about the extent to which children in single parent families may be at increased risks of both educational underachievement and social maladjustment (eg Wallerstein, 1991; Dafoe Whitehead, 1993). These themes have recurred in policy debates in New Zealand since at least the 1970's and, interestingly, have more recently re-emerged in a different guise in the form of contemporary concerns about the effects of "fatherless" families on children.

There are two major routes by which children may enter a single parent family. First, children may be born into these families as the result of the decision of a single woman to rear her child alone. More often, however, entry into a single parent family is a consequence of

parental divorce or separation. These trends are clearly evident in the data gathered over the course of the CHDS and Table 2 gives life table estimates of the proportion of the cohort who: a) entered a single parent family at birth; b) had entered a single parent family by ages 5, 10 and 16. The Table shows that over the period of childhood (0-16 years) 36% of the cohort had spent some period of time in a single parent family with the majority (79%) entering single parent families as a result of parental separation and divorce. The figures in this Table clearly reinforce contemporary concerns about the possible effects of single parent or fatherless families on child life opportunities and social adjustment. The longitudinal data gathered during the course of the CHDS made it possible to examine the extent to which children reared in single parent families were at greater risks of educational underachievement and social adjustment problems, when compared with their peers in two parent families. Two studies have been published on this issue with one analysis examining the effects of parental separation and divorce on childhood academic achievement and the other, the effects of parental divorce or separation on social adjustment in adolescence. Both studies yield highly consistent conclusions that appear to mirror more general trends in the literature in this area.

INSERT TABLE 2

The first study (Fergusson, Lynskey & Horwood, 1994) in this series examined the relationships between exposure to parental separation and academic achievement during middle childhood (8-13 years). This study produced three major conclusions. First, that children whose parents separated tended to have consistently poorer academic achievement than those who remained in intact families with these differences being more marked for children whose parents separated after the point of school entry. Children exposed to parental

separation were found to have mean achievement test scores that were up to .5 of a standard deviation lower than children reared in intact two parent families.

However, exposure to parental separation was also found to be associated with other disadvantageous family factors that were present prior to separation. These factors included: younger mothers; less well-educated mothers; low family socio-economic status and less nurturant and more punitive patterns of early mother/child interaction. It is clear from these results that independently of parental separation or divorce, these children were likely to be at greater risk of later academic underachievement.

The view that the association between parental separation and academic achievement reflects social and contextual factors related to parental separation rather than the causal effects of separation on achievement was supported by subsequent analyses in which the associations between parental separation and academic achievement were adjusted for the effects of social and contextual factors related to parental separation. This analysis suggested that when due allowance was made for social and contextual factors associated with separation and divorce, most of the differences in the academic achievement of children in separated families and non-separated families disappeared. Nonetheless, there was evidence to suggest that children whose parents separated after school entry experienced small academic delays. After adjustment for social and contextual factors, children whose parents separated after the point of school entry had mean test scores that were between .17 to .29 standard deviations lower than children who remained in intact families. The principal conclusion of this study was:

“Although exposure to parental has some detectable associations with childhood outcomes, this association is not strong and the higher rates (of academic underachievement) seen

among children whose parents separated appear to be as much, if not more, a reflection of the general social and familial context within which separation and divorce occur.” (p. 1090).

This conclusion was strongly supported by a parallel analysis of the relationship between parental separation and measures of social adjustment at age 15 (Fergusson, Horwood & Lynskey, 1994a). In common with the analysis of parental separation and academic achievement, this analysis suggested that children whose parents separated were at increased risks of a series of adolescent problems or difficulties, including conduct problems, early onset sexual activity, substance abuse, depression and anxiety. Children from divorced or separated families had rates of these outcomes that were between 5 to 10 times higher than the rates found amongst children from intact families. However, further analysis suggested that most of this elevated risk reflected social and contextual factors related to parental divorce, rather than the impacts of parental separation and divorce on child adjustment. After adjustment for social context, children in separated families had rates of adolescent problems that were 1.07 to 3.33 (median = 1.46) times higher than rates for children in intact families. This result is consistent with the view that exposure to parental divorce is associated with small but statistically detectable increases in the risk of adolescent adjustment problems.

The significance of these findings is that they place past and contemporary debates about the deleterious effects of single parent or fatherless families on children in perspective. The evidence certainly does not support strong claims that single parenthood or father absence make a major contribution to the educational achievement or social adjustment of children. At the same time, relatively consistent evidence does exist to suggest that exposure to a single parent family may lead to small increases in rates of academic underachievement and adolescent adjustment difficulties. These considerations clearly suggest that it would be

unwise to elevate single parenthood or father absence to being either a major cause of childhood difficulties or to being a key policy variable in addressing these issues. Rather, parental separation appears to be one of a large number of factors that individually have only small effects on children's academic achievement or personal adjustment, but which in combination may have large effects on the individual's adjustment and life opportunities.

Childhood Sexual Abuse and Adjustment in Adolescence

The emphasis on single parenthood, as a principal cause of childhood difficulties, tended to dominate public thinking and policy debates in the 1970's. However, by the 1980's a rather different threat to children was identified as a result of rising public awareness of the issue of childhood sexual abuse (Olafson, Corwin & Summit, 1993; Green, 1993). These concerns in turn led to a series of claims about both the prevalence of CSA and its damaging circumstances with these concerns predominantly focussing on the CSA in females and paying less attention to CSA in males (Finkelhor & Baron, 1986; Watkins & Bentovim, 1992). Behind these concerns there were two strong assumptions. First, that CSA was a common childhood experience with claims suggesting that up to one in three girls were subject to sexual abuse (Peters, Wyatt & Finkelhor, 1986). Second, that the traumatic nature of CSA was such that it led to the CSA victim being at risk of an increased susceptibility to psychiatric disorder over her life time. Both claims have proved to be contentious (Fergusson & Mullen, 1998).

We have been able to use the CHDS cohort to examine a series of issues relating to both the prevalence of CSA and its consequences for longer term psychological and personal adjustment. For both ethical and practical reasons it proved impossible to assess CSA exposure whilst cohort members were children. However, when the cohort reached the threshold of adulthood at the age of 18, it became ethically feasible to obtain their reports of CSA exposures in childhood. The availability of extensive personal data on the CHDS cohort made it possible to examine the extent to which reported CSA was related to measures of personal adjustment in young adulthood taking into account other social and family and contextual factors that may have been associated with CSA. The results of this study have been summarised in a series of analysis that have variously examined: the prevalence of CSA (Fergusson, Lynskey & Horwood, 1996); the social and family backgrounds of children at risk of CSA (Fergusson, Lynskey & Horwood, 1996); the relationships between CSA and psychiatric adjustment at age 18 (Fergusson, Horwood & Lynskey, 1996); the relationships between CSA and sexual adjustment at age 18 (Fergusson, Horwood, Lynskey, 1997). The principal conclusions of this series of studies may be summarised as follows:

1. CSA during childhood was by no means uncommon with 17% of females and 3.4% of males reporting some exposure to CSA. It was clear, however, that those reporting CSA were not an homogenous population exposed to a common set of childhood experiences. Rather, the severity and extent of reported CSA ranged from, minor exposures of non-contact abuse (eg, indecent exposure) to repeated rape and sexual assault. Classifying children with such diverse childhood experiences into a general group of the sexually abused is clearly both highly imprecise and potentially misleading. For the purpose of our analyses, those reporting CSA were classified into three CSA severity groups: those who reported episodes of non contact abuse only; those

who reported contact CSA that did not involve attempted or completed sexual penetration; and those who reporting CSA that involved attempted or completed sexual penetration. This re-analysis suggested the presence of small minorities of children who reported severe sexual assaults with 5.6% of girls and 1.4% of boys reporting CSA involving sexual penetration. These relatively small numbers should not be used to imply that CSA is an inconsequential childhood problem. For example, the prevalence estimates for girls suggest that in an average school class of 30 sixteen year old girls, between 1 to 2 will have been exposed to episodes of CSA that involved attempts at sexual penetration.

2. The profile of CSA perpetrators suggested that the majority of perpetrators were male, although amongst boys a significant minority of perpetrators were female. Those most likely to engage in CSA were non-family members who were known to the child, for example, family friends, uncles and other relations. CSA by natural parents was very uncommon and only 2 out of 1,0225 young people questioned reported this type of CSA exposure with a further 7 reporting CSA involving a step parent.
3. Exposure to CSA was not related to social class and appeared to occur with equal frequency amongst Maori and non Maori. However, exposure to CSA was generally associated with measures of family dysfunction. Those reporting CSA tended more often to come from families characterised by parental conflict, separation or divorce, parental alcohol and drug problems. In addition, those reporting CSA also reported having more distant relationships with their parents. In general, these results tend to suggest that the family environments associated with CSA are likely to be characterised by a series of dysfunctional features.

4. Those reporting exposure to CSA had elevated risks of psychiatric disorder at age 18 years. These risks increased with increasing severity of CSA, with those reporting CSA involving penetration having rates of disorders that were between 3 to 12 times (median = 5.0) higher than the rates of disorders amongst those not reporting CSA. Statistical adjustment for family, social and childhood factors associated with reported CSA reduced these associations only slightly and, in general, the analysis suggested that independently of confounding factors, exposure to CSA was associated with clear and detectable increases in rates of psychiatric disorder in 18 year olds. It was estimated that exposure to CSA accounted for between 10% to 20% of the disorders experienced by cohort members.

5. The analysis of the linkages between CSA and psychiatric adjustment was extended to examine the linkages between CSA and sexual adjustment in females (Fergusson, Horwood & Lynskey, 1997). That analysis suggested that girls who reported exposure to CSA, and particularly CSA involving penetration, were at increased risks of early onset (prior to 16) sexual intercourse, teenage pregnancy, contraceptive non usage, sexually transmitted diseases and related outcomes. The relationships between CSA and sexual risk taking behaviours were largely explained by the fact that: a) those exposed to CSA reported an earlier onset of intercourse, and; b) earlier onset of intercourse exposed these young women to greater risks of unplanned pregnancy, contraceptive non usage, sexually transmitted diseases, and other outcomes.

Collectively, these findings reinforce many of the concerns that have centred around the issue of CSA and clearly suggest that exposure to CSA in childhood is a not an uncommon experience. Evidence also suggests that CSA appears to be associated with an increased

vulnerability to later psychiatric disorder and sexual risk taking. At the same time, it is important to place these conclusions in perspective. In particular, it is important to note that exposure to CSA was by no means the only childhood factor associated with increased rates of psychiatric disorder and sexual risk taking. The psychosocial profiles of young people with adolescent difficulties suggests the presence of a large number of adverse factors centering around earlier social disadvantage, family dysfunction and personal characteristics that contributed to their later outcomes. It is clear from these findings that exposure to CSA is only one of many factors that act in combination to determine an individual's longer term vulnerability to adjustment problems in adolescence.

Childhood Physical Abuse and Social Adjustment

The focus on childhood sexual abuse that emerged in the 1980s also led to increased attention being paid to the issue of exposure to childhood physical abuse and later adjustment. This issue has also become linked with agendas relating to the extent to which the use of physical punishment may be harmful to the personal adjustment of children (Epoch, 1992; Ritchie & Ritchie, 1993). Parallel to the study of childhood sexual abuse, the CHDS has also conducted an investigation on the relationships between physical punishment or abuse and psychiatric adjustment in the CHDS cohort (Fergusson & Lynskey, 1997). The general methodology used was similar to that used in the study of CSA. At the age of 18, young people were asked to describe the extent to which their parents used physical punishment. In addition, they were also asked to rate their parent's discipline practices on a four point scale which ranged from those who reported that their parents never used physical punishment to those who reported that their parents treated them in a harsh or abusive way. In common with the analysis of CSA, this methodology suggested that there was a spectrum of child discipline/physical abuse

patterns that ranged from none to severe, with 3.9% of the cohort reporting that their parents either used physical punishment too frequently or had treated them in a harsh or abusive way. Parents of this small group of children had a profile of childhood discipline strategies that involved the repeated use of violent methods of punishment. At the other extreme, 10.8% of the cohort reported that their parents never used physical punishment, with the majority (77.7%) reporting that their parents occasionally used physical punishment.

Evaluation of the relationships between reports of physical punishment or abuse during childhood and psychosocial outcomes in early adulthood clearly showed that young people reporting harsh or abusive treatment had increased rates of: conduct problems; substance abuse; depression; anxiety and violent crime. Those describing parental punishment practices as severe or harsh had rates of these problems that were between 1.5 to 4 times (median = 2.2) higher than rates found amongst children whose parents did not use physical punishment. There were, however, no clear differences between the adjustment of young people who reported that their parents never used physical punishment and those who reported that their parents infrequently used physical punishment.

However, further examination revealed that patterns of physical punishment and abuse were also related to a wide range of social and family factors. In general, young people reporting high exposure to physical punishment tended to come from socially disadvantaged family backgrounds that were characterised by multiple sources of adversity that spanned: parental divorce or separation; high levels of parental conflict; parental illicit drug usage; parental alcohol problems; parental criminality; depressed living standards and high levels of exposure to stressful life events.

Statistical control for social and contextual factors associated with child physical punishment or abuse suggested that to a large extent the elevated risks of adjustment problems found in children exposed to harsh or abusive treatment reflected the social context within which the child was reared, rather than the traumatic effects of abusive treatment on later personal adjustment. Nonetheless, there were suggestions that children exposed to harsh or abusive treatment were at slightly increased risk of making suicide attempts and had higher rates of violent crime. These findings may suggest that one of the consequences of physical abuse in childhood may be to increase the likelihood that individuals will react in violent ways to those around them or show increased tendencies to violent behaviours towards themselves. There was no evidence to suggest that those exposed to occasional physical punishment by their parents were at any greater or any lesser risk of adjustment problems than those whose parents did not use physical punishment methods.

Interparental Violence and Adjustment in Adolescence

In recent years there has been increasing interest in the issue of interparental violence and its effects on children. The popular view of interparental violence is that it is an exclusively male problem that has severe and damaging consequences for the social adjustment and development of children. In general, the findings of the CHDS do not support either of these assumptions (Fergusson & Horwood, 1998).

At age 18, we asked our cohort members to describe their perceptions of violent behaviour between their parents using an 8 item version of the Conflict Tactics Scale (Straus,

1979). Separate ratings were obtained for assaults on the mother by the father and assaults on the father by the mother. As with the assessment of CSA and physical abuse, this questioning revealed a spectrum of interparental violence that ranged from none to severe. Whilst 60% of the sample reported that their parents did not engage in either verbal or physical assaults, the remaining 40% describe varying levels of interparental violence, with approximately 5% describing high levels of violence between their parents. The analysis of the relationships between measures of parental violence and adjustment in adolescence revealed the following conclusions.

First, contrary to popular stereotypes, the analysis suggested that rates of assault on females by males were similar to rates of assault on males by females. On the basis of the reports made by their children, mothers were just as likely to assault fathers as fathers were to assault mothers. This result may seem puzzling in the light of strong claims that domestic violence is predominantly a male problem (Dobash & Dobash, 1992; Morley & Mullender, 1994). However, the findings from the CHDS have been replicated in a growing number of survey based studies, all of which have suggested that females assault males at approximately the same rate as males assault females (Archer & Ray, 1989; Henton, Cate, Koval, Lloyd & Christopher, 1993; Magdol, Moffitt, Caspi, Newman, Fagan & Silva, 1997; Stets & Straus, 1990). A possible resolution of these results with the popular perception that domestic violence is predominantly a male problem may rest with the differences in the consequence of assaults on males by females and assaults on females by males. It may be suggested that, because of greater male physical strength and experience with violence, assaults on females by males are both more physically damaging and psychologically threatening than assaults on males by females. This could well lead to a situation in which although males and females assault each other at similar rates, the assaults that come to public attention and give rise to

concerns because of their physical or psychological consequences, involve assaults on females by males. Looked at from this perspective, claims that domestic violence is a male problem are likely to contain an element of truth and an element of distortion. The element of truth in these claims is that severe assaults involving physical harm or psychological threat are likely to be committed predominantly by males. The element of distortion is that there is growing evidence to suggest that males and females are equally likely to assault their partners and that partner assault is by no means practiced exclusively by males.

In common with the studies of sexual abuse and physical abuse, the study findings suggested that children reared in families characterised by high levels of interparental violence were at increased risks of: conduct problems; anxiety disorders; depression; suicide attempts; substance abuse; and juvenile crimes. Young people exposed to high rates of interparental violence had rates of these problems that were between 1.9 to 6.1 times (median = 3.0) higher than rates in young people whose parents did not engage in violent behaviour.

However, similar to the findings for childhood physical abuse, families characterised by high rates of interparental violence were also subject to other disadvantages that spanned socio-economic disadvantage, family difficulties and greater exposure to childhood physical and sexual abuse. Statistical control for these disadvantageous features associated with interparental violence largely explained the elevated rates of problems found in those exposed to high levels of interparental violence. Nonetheless, even after such adjustments, exposure to father initiated violence was associated with increased risks of conduct disorder, anxiety disorders and juvenile crime. Interparental violence initiated by the mother was associated with increased rates of alcohol abuse. In general, these findings suggest that whilst most of the association between interparental violence and psychiatric adjustment reflects the social

and family context within which this violence occurs, exposure to high levels of family violence may be associated with small increases in risks of later conduct problems, alcohol abuse, anxiety and crime.

There are two important implications of these results for social policy. First, in recent years considerable publicity has been given to the issue of domestic violence with the clear implication that such violence has harmful effects on children. Public presentations of this issue have tended to present domestic violence as being an exclusively male problem and have largely ignored the social, family and related context within which family violence occurs. The results of the present study call many of these practices into question. In particular, it is clear from the results above that interventions that focus on family violence in isolation from the social and family context within which this violence occurs are likely to be relatively ineffective in addressing the problems faced by children in families in which violence occurs. Effective intervention in these families is likely to require a more extensive approach that addresses the range of socio-economic and personal problems such families frequently face, rather than focussing solely on violent behaviours between parents. At the same time, to the extent that the evidence suggests that exposure to interparental violence makes a contribution to childhood problems, it is clear that the management of issues relating to family violence is an important component of any policy dealing with at risk families and their children.

The Childhoods' of Multiple Problem Adolescents

The analyses described above all share the common themes of examining the way in which exposure to a particular set of circumstances in childhood (single parenthood; sexual abuse; physical abuse; family violence) influence the individual's long term adjustment and wellbeing. In all cases, studies return the common conclusions that any single risk factor in isolation from social and family context is likely to make only a relatively modest contribution to individual risk. These findings clearly suggest that what distinguishes at risk children and at risk families, is not the presence or absence of a single risk factor or set of circumstances, but rather an accumulation of adverse conditions that combine to increase the likelihood of adverse outcomes that may span academic underachievement, conduct difficulties, juvenile crime, youth suicide and other psychosocial problems.

The accumulative effects of childhood and family adversity were examined in a study of the life histories of a small group of young people who, by the age of 15, had developed severe and persistent problem behaviours (Fergusson, Horwood & Lynskey, 1994b). These young people presented with a behavioural profile characterised by high rates of: conduct problems; police contact; early onset sexual activity and substance abuse with this profile also being associated with elevated rates of low self esteem, depression and suicidal tendencies. Whilst this group comprised only a small fraction (3%) of the CHDS cohort, it was clear from both their history and behavioural profiles that they were representative of the group of high risk young people who are conspicuous for their history of contact with welfare agencies, the police and mental health services.

An important feature of the study was that, for each cohort member, the study held extensive data on their childhood and family circumstances prior to adolescence. Using this information, we set about constructing a comprehensive statistical profile of the childhood history of the group of multiple problem adolescents when compared with other cohort members. In all, these profiles involved 39 comparisons between the two groups with the measures being compared including measures of socio-economic disadvantage, personal history, family functioning and child rearing practices. The striking feature of the analysis was that in all 39 comparisons, clear and significant differences were found between the childhood circumstances of the multiple problem group and other children. As a group, those developing severe multiple problems experienced childhoods characterised by socio-economic disadvantages, family dysfunction and conflict, and impaired parenting. An important conclusion of this analysis was that what appeared to distinguish between children who developed severe multiple problem behaviour was not the presence, or absence, of a specific risk factor but rather an accumulative history of social, family and parental adversity. What these results clearly suggest is that the nature and quality of childhood experiences were important determinants of these young peoples' multiple problem status.

The ways in which family and childhood factors combine to influence risks in this group is illustrated in Table 5. This Table shows the CHDS cohort classified into 5 groups reflecting the general level of exposure to social, family and related advantages in childhood. These groups range from those whose adversity score placed them in the least disadvantaged/dysfunctional 50% of the cohort, to those whose adversity scores placed them in the most disadvantaged/dysfunctional 5%. The Table reports the overall rate (%) of multiple problem young people in each group. The results show a strong gradient of risk depending on levels of exposure to childhood and family adversity. Of the children whose

adversity scores placed them in the most disadvantaged and dysfunctional 50% of the cohort, only 1 (0.2%) became a multiple problem teenager, whereas amongst those in the most disadvantaged/dysfunctional 5% of families over 20% became multiple problem teenagers. To put the matter another way, rates of severe behavioural disturbance were over 100 times more frequent in the most disadvantaged 5% when compared with the least disadvantaged 50%. This strong gradient of risk clearly illustrates the ways in which the accumulative effects of multiple disadvantages may impact on the risks of severe maladjustment in adolescence. What these findings suggest, is that what distinguishes young people who develop serious maladjustment, is not the presence or absence of a single risk factor that determines their life course and behavioural directions, but rather the accumulations of risk factors that all combine to increase the likelihood that the individual will develop significant and severe problems in later adolescence.

INSERT TABLE 3

Youth Suicide

In the last five years there have been increasing public and policy concerns about the issue of youth suicide. These concerns have been stimulated by statistical evidence that has shown that rates of youth suicide (and particularly male youth suicide) have shown clear increases in recent decades (Deavoll, et al, 1993) and international comparisons showing that New Zealand has one of the highest rates of youth suicide in a series of OECD countries (Barwick, 1992). In turn, this evidence has led to increased public debate and concern about the issue of youth suicide and a search for explanations of the causes of this behaviour.

As part of the CHDS, we have gathered information on the frequencies of suicidal behaviours in the cohort from the age of 14. The data suggest that tendencies towards suicidal behaviours in adolescence are by no means uncommon. By the age of 18, over a quarter of the CHDS cohort reported that they had contemplated suicide; just over 5% had made a suicide attempt with most of these attempts being minor and not leading to medically serious consequences. Two cohort members (both male) have died as a result of suicide (Horwood & Fergusson, 1998).

Examination of the backgrounds of young people making suicide attempts or dying by suicide suggested that they were distinguished from other teenagers in two general ways (Fergusson & Lynskey, 1995). First, suicidal teenagers tended to come from disadvantaged/dysfunctional childhood backgrounds and the childhood profile of suicidal teenagers overlapped considerably with the social profile of multiple problem adolescents described above. Second, nearly all (over 90%) had recognisable mental health and adjustment problems that were evident before the suicide attempt, with the most common of these problems being major depression, conduct problems and substance abuse. In addition, over a third of those making suicide attempts, or dying by suicide, had been in contact with psychiatric services in the year prior to the suicide attempt (Horwood & Fergusson, 1998). These results clearly suggest a model of the aetiology of suicide in which suicidal behaviours are the end point of a life history marked by childhood adversity and adolescent adjustment difficulties. These conclusions are highly consistent with the results of a case/control study of youth suicide conducted in Christchurch by the Canterbury Suicide Project. This study contrasted two groups of young people: 129 young people making medically serious suicide attempts and 153 randomly selected community controls. The findings show that those making serious suicide attempts were distinguished from the

community controls by high levels of exposure to childhood and family adversities and by high rates of psychiatric problems or adjustment difficulties with the most common of these being major depression, antisocial behaviours and substance abuse behaviours (Beautrais, Joyce & Mulder, 1996). Thus both longitudinal and case/control research is in strong agreement that the psychosocial profile of the young person at risk of youth suicide, is that of a young person exposed to a disadvantaged and dysfunctional childhood, who develops significant adjustment problems during adolescence.

These findings have important implications for the conceptualisation of the issue of youth suicide and the development of policies in this area. Often accounts of the origins of youth suicide have been based around a “stress model” that assumes that youth suicide can occur in any young person and is a response to the social, environmental and related stresses of adolescence. Neither the Christchurch Health and Development Study data nor the Canterbury Suicide Project data support this view. Rather, both studies suggest a psychosocial adversity model in which youth suicide and suicide attempts are frequently (but not invariably) the endpoints of unsatisfactory life sequences marked by a history of childhood adversity and adolescent adjustment difficulties. There are important differences in the policy implications of the stress model and the adversity models of youth suicide. The stress models implies that all young people are at risk of suicide and as a consequence leads to the promotion of policies designed to address the social and environmental needs of young people in general. In contrast, the psychosocial adversity model implies that youth suicide and suicidal behaviours are largely confined to a small minority of the population who are conspicuous because of their history of exposure to childhood adversity and their history of adjustment problems in adolescence. In contrast to the stress model the psychosocial

adversity model implies the need for suicide prevention policies that are specifically targeted towards at risk youth and at risk families.

Discussion

The findings reviewed above have a number of implications for both policy development and policy emphases in a number of areas relating to the interface between family functioning and childhood wellbeing. These implications are examined below.

1. Single Parenthood and Childhood Well-being: The relatively rapid changes that have occurred in family structures over the last three to four decades have led to continued concerns about the extent to which exposure to a single parent family may have harmful or disadvantaging consequences for children, with a number of authors linking increases in the number of single parent families to increasing rates of child and adolescent problems (eg Dafoe Whitehead, 1993). In general, the findings of the CHDS, and indeed a growing number of studies (eg Amato & Keith, 1991), do not provide strong support for these concerns. Whilst children reared in single parent families emerge as an “at risk” group for health, educational and adjustment difficulties, much of this risk does not reflect the number of parents in the child’s family but rather a series of social and contextual features that are more common in single parent families. As a group, children reared in single parent families have higher levels of exposure to social and economic disadvantage, family dysfunction, stress and impaired or compromised parenting and child rearing. The CHDS studies of parental separation suggest that these factors are often present prior to parental separation rather than being a consequence of separation. It would appear that it is these disadvantages that are correlated with single parenthood that, largely, account for the greater risks of children in single parent families. Nonetheless, findings from the CHDS do suggest that exposure to parental separation or divorce, may be associated with small increases in risks of academic underachievement and adjustment

difficulties. Collectively, these findings suggest that single parenthood in the absence of social or family disadvantage is not a factor that makes a major contribution to childhood risk. This conclusion, clearly suggests the need for social policies to avoid a focus that implies that single parenthood is a primary cause of childhood and adolescent problems and more towards a more in depth examination and exploration of the multiple, family and parental factors that conspire to place children in single parent families at increased risk.

Recently concerns about single parenthood have re-emerged in the guise of concern about fatherless families. Whilst the CHDS has yet to conduct an analysis of this issue it seems very likely that the conclusions of this analysis would be very similar to the conclusions drawn about single parent families: children in fatherless families are at greater risks of problems of educational underachievement and social adjustment but this increased risk does not reflect father absence but rather the social, economic and related context associated with fatherless families.

2. Child Abuse and Family Violence: In recent years, there has been increasing emphasis in social policy about the effects of child abuse and family violence on children. In general, the results of the CHDS provide some support for these claims but also suggest the need for a broader policy focus that views family violence and child abuse in the context of family functioning. In particular, the results of the CHDS suggest that whilst children exposed to both physical maltreatment or interparental violence are at increased risks of mental health problems, substance abuse, youth suicide and juvenile crime as adolescents, most of this increased risk does not appear to reflect the traumatic effects of exposure to abuse or family violence on childhood adjustment but rather the broader social and family

context within which child abuse and parental violence tends to occur. The findings of the CHDS suggest that physical child abuse and family violence is frequently (although not invariably) embedded in a broader social context that is characterised by multiple sources of social disadvantage, family dysfunction and parental adjustment difficulties. To a very large extent, the higher rates of adjustment difficulties found amongst abused children and children from violent families appears to reflect the consequences of a generally compromised and disadvantaged childhood rather than the traumatic effects of abuse or family violence on personal adjustment.

In contrast, the findings on childhood sexual abuse suggest that independently of social context, exposure to sexual abuse, and particularly sexual abuse involving penetration, is associated with clear increases in risk of later mental health and adjustment problems. However, it is by no means the case that all of those exposed to CSA develop these problems and exposure to CSA is by no means the only childhood or family factor that contributes to later psychosocial adjustment.

3. At Risk Children and at Risk Families: The themes that emerge from the analysis of single parenthood and family violence clearly suggest that programmes and policies that attempt to target a single risk factor in isolation from its social and family context are likely to be relatively ineffective. What the CHDS findings clearly suggest is the need for policies that are targeted at meeting the needs of at risk families and at risk children. This theme has clearly emerged in the analyses of multiple problem adolescents and suicidal youth that showed both of these endpoints were determined by combinations of risk factors that conspired over the individual's life course to increase the risks of personal maladjustment or suicidal behaviour. The account of the high risk young person, that

emerges from the CHDS data, will be depressingly familiar to many: this young person has frequently (but not invariably) been raised in a family characterised by multiple social, economic and related disadvantages that are likely to include family instability; parental separation and divorce; poverty or limited material conditions; impaired parenting; family violence; child abuse and related factors. By the point of school entry, this child is likely to be conspicuous by his/her behavioural patterns and will frequently present with early onset conduct problems and difficulties. In early adolescence, the behaviours of these young people will be marked by the early onset of substance use behaviours, truancy, and the formation of associations with delinquent and substance using peers. As adolescents and young adults they emerge as being prone to crime, substance abuse, mental health difficulties and suicidal behaviours.

The problem posed by this group of children and young persons to health, welfare and justice agencies is that of finding constructive ways and means of breaking the escalating cycle of childhood and family difficulties, behavioural maladjustment and entry into an antisocial or non-conventional and often self destructive life style. The findings of the study suggest that it is very unlikely that effective programmes will be found in policies and campaigns that focus on one component of this process. Whilst it is important for family and childhood policies to recognise, and be responsive to, issues raised by single parent families, fatherless families, childhood sexual abuse, childhood physical abuse or family violence, policies that seize on one particular aspect of childhood and family life and identify this as being the primary cause of delinquency, maladjustment and youth difficulties are likely to be misleading and counter productive. All of the evidence in the CHDS, and indeed most current research in the field of developmental psychopathology, clearly suggests that the aetiology of many childhood and youth difficulties is strongly

multicausal and influenced by a series of risk factors that accumulate over the individual's life course.

The implications of this conclusion are clearly that the social programmes and policies that are likely to be most effective in addressing the needs of at risk families and their children are likely to involve multi-compartmental approaches that have sufficient breadth and flexibility to address the wide range of social, economic, family individual and related factors that contribute to the development of childhood problems. A comprehensive review of policy options in this area is well beyond the scope of this paper. However, in a previous review of issues relating to youth mental health (Fergusson, Horwood & Lynskey, 1997), we have examined the mix of possible strategies that may be used to reduce risks of youth mental health problems. These strategies included:

- Macrosocial changes including improved social equality, full employment, the development of positive media environments and greater public awareness of psychosocial disorders in young people.
- Community level interventions that build upon the local strengths of the community and are designed to meet socio-cultural and other features that are specific to a given community may provide an important adjunct to macrosocial change.
- Family based interventions targeted at high risk families are likely to be a very important strand of interventions aimed at reducing risks of disorder. To the extent that the family is likely to provide the strongest socialisation influence, it is clear that interventions that reduce the number of young people exposed to disadvantaged, dysfunctional and difficult

family situations are likely to play an important role in the primary prevention of child and adolescent problems.

- Family based programmes, however, need to be supplemented by school and peer based programmes that focus on the development of school and peer cultures and environments that minimise risks of disorder.
- Childhood and adolescent psychiatric services have a major role. To the extent that individual differences, independently of social context, are likely to play an important role in determining vulnerability to disorder, it is important that other interventions at macrosocial, community, family, school and peer levels are supplemented and strengthened by the availability of adequate, well funded and suitably staffed childhood and adolescent psychiatric services that have the capacity to provide diagnosis and clinical treatment for children showing early onset disorders and, of course, the management of psychosocial disorders throughout the period of childhood and adolescence.

Whilst these policy suggestions were directed at addressing mental health issues in young people, it is clear that a similar mix of policies is likely to be required to address broader welfare and related issues associated with at risk young people and their families.

ACKNOWLEDGEMENTS

This research was funded by grants from the Health Research Council of New Zealand, the National Child Health Research Foundation, the Canterbury Medical Research Foundation and the New Zealand Lottery Grants Board.

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Table 1: Reasons for losses to follow up at age 18

Reason	Number	Percentage of Losses
i) Subject no longer in NZ	135	56.3
ii) Refusal to participate	83	34.6
iii) Died by age 18	20	8.3
iv) Not traced	2	0.8

Table 2: Percentages of CHDS cohort entering a single parent family: a) at birth; b) by ages 5, 10 and 16 years.

Age (i)	Percentage ¹ of cohort entering a single parent family by at age “i”
Birth	7.7
5 years	18.2
10 years	27.3
16 years	36.1

¹ Percentages are based on all available cohort data and are based on life table methods of estimation.

Table 3: Rates of multiple problem teenagers by family difficulties score

Family Difficulties Score	Percentage of sample	Rate ⁽¹⁾ of Multiple Problem Teenagers
0-6	54.5	0.2
7-12	29.8	2.5
13-18	10.3	8.3
19+	5.4	21.6