ETHNICITY AND INTERPERSONAL VIOLENCE IN A NEW ZEALAND BIRTH COHORT

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HISTORICAL PROLOGUE

Present day New Zealand society was formed as a result of an agreement (The Treaty of Waitangi) signed in 1840 between the British Crown and representatives of the indigenous Maori people. In essence with this agreement, Maori agreed to accept the sovereignty of the Crown in return for full rights of British citizenship whilst the Crown undertook to preserve the traditional rights and ownership of the Maori people. Following the signing of the Treaty of Waitangi, the indigenous Maori people were exposed to a progressive process of colonisation which led to an increasing alienation of Maori from their traditional lands, waters and resources, an increasing urbanisation of Maori, and a general decline of Maori culture and language in New Zealand.
INTRODUCTION

It has been well documented that individuals of Maori descent and/or cultural identification are at higher risk of a range of disadvantageous outcomes including poorer educational achievement, higher rates of poverty and housing difficulties, higher risks of health problems, greater involvement in criminal offending and higher rates of psychiatric disorder. These persistent and consistent linkages between ethnicity and individual or social wellbeing have led to a search for explanations of the origins of social disadvantage amongst Maori. One aspect of this concern has focused on the issue of interpersonal violence amongst Maori. These issues were highlighted both locally and internationally by the graphic scenes of family and interpersonal violence portrayed in the New Zealand film *Once Were Warriors* which portrayed the life style of a contemporary dysfunctional Maori family. At a more abstract level, official statistics recording rates of interpersonal violence clearly suggest that Maori are at greater risk of involvement in violent behaviours including physical child abuse (Fergusson, Fleming & O’Neill 1972; Kotch, Chalmers, Fanslow, Marshall & Langley 1993) and violent offending (Lovell & Norris 1990). These comparisons suggest that officially reported rates of violent behaviours amongst Maori are between 2 to 4 times higher than the corresponding rates in Europeans (Pakeha).

At the same time, both fictional portrayals and official statistics may provide a misleading perspective on the linkages between interpersonal violence and ethnicity. Clearly, in fictional portrayals the demands of plot may highlight issues in an attempt to produce an interesting story. Similarly, official statistics may be biased as a result of the social and legal processes by which individuals come of official attention (Duncan 1970; Hampton 1974; Jackson 1988a, 1988b; Newbold 1992; Pratt 1990; Sutherland, Hippolite, Smith & Galbreath 1973). There is, therefore, clearly a need to examine the extent to which rates of interpersonal
violence amongst Maori differ from rates amongst Europeans (Pakeha) in a way which avoids
the potential biases of fictional portrayal or official statistics.

In addition, the observation that a particular ethnic group has a higher or lower rate of
interpersonal violence, by itself, does not provide an explanation of why rates of violent
behaviours differ across cultures. Whilst there have been few analyses of the origins of ethnic
differences in interpersonal violence in New Zealand there has been continued analysis and
debates about the more general tendency for ethnicity to be related to rates of crime in New
Zealand. Broadly speaking, there have been three perspectives on the linkages between
ethnicity and antisocial or criminal behaviours.

The Labelling/Conflict Perspective

One explanation of the differentials in rates of offending is that these differences are due to
biases in the ways in which offending behaviours are measured. In most studies, comparisons
of offending rates by Maori and non-Maori have been based on rates of officially recorded
offending. However, official offending statistics measure not only the rate at which offences
occur but also the legal and other processes which lead children and young persons to be
classified as offenders. It has been suggested by a number of authors that the apparently
higher rates of offending among Maori are due to a bias in the way in which offending is
measured (Duncan 1970; Jackson 1988a, 1988b; Hampton 1974; Newbold 1992; Pratt 1990;
Sutherland, Hippolite, Smith & Galbreath 1973). In particular, it has been suggested that
Maori offenders are more likely to be detected and classified as offenders by New Zealand’s
justice system (Duncan 1970; Jackson 1988a, 1988b; Sutherland et al 1973).

Whilst there have been attempts to explain differences in offending from a labelling theory
perspective, the evidence on the extent to which Maori and non-Maori differences in
offending rates can be attributed to biases in the ways in which offending has been measured
is very limited and, further, it has been pointed out that any bias in official statistics is
unlikely to be large enough to explain the large differentials in rates of offending between
Maori and non-Maori (Fifield & Donnell 1980). Thus, whilst it is possible that the use of
official offending statistics inflates the differences in rates of Maori and non-Maori offending,
it is unlikely that all of these differences can be explained as an artefact of the way in which
offending has been measured and classified.

The Socio-economic Disadvantage Perspective

An alternative explanation is that differences in rates of offending reflect socio-economic
differences between the Maori and non-Maori populations. This explanation is based on two
sets of observations. Firstly, it has been well established that on a range of indicators
including educational achievement (Benton 1988; New Zealand Council for Educational
Research 1988), unemployment (Hill & Brosnan 1984), income (Brosnan 1982), socio-
economic status (Davies 1982), housing (Bathgate 1988) and health (Pomare & de Boer
1988), Maori children tend to be reared in home environments subject to relative social and
economic disadvantage. It has also been well established that such disadvantages are
associated with an increased vulnerability to young offending (Thornberry and Farnworth
1982; Van Dussen, Mednick, Gabrielli & Hutchings 1983; Wadsworth 1979; West &
Farrington 1973). Therefore, it may be argued that the higher rate of offending among Maori
is a reflection of the differences in the socio-economic and related distributions of Maori and
non-Maori in New Zealand. The socio-economic hypothesis predicts that when due
allowance is made for socio-economic factors, Maori children are at no greater risk of
offending than non-Maori.

This explanation was studied by Fergusson, Donnell and Slater (1975) who examined the
extent to which apparent differences in Maori and non-Maori rates of offending could be
explained by the effects of socio-economic factors. Their analysis suggested that adjustment for socio-economic status was sufficient to explain some component of the apparent correlation between ethnicity and offending, but even after adjustment there were still tendencies for Maori to offend at higher rates than non-Maori. Before adjustment Maori children offended at 3.1 times the rate of non-Maori whereas after adjustment this difference reduced to 2.4 times.

There are, however, a number of limitations in the analysis reported by Fergusson et al (1975). Firstly, offending was measured on the basis of official offending statistics and as noted previously it is possible that these statistics lead to an inflated estimate of the difference in rates of offending by Maori and non-Maori. Secondly, control for social factors was limited to the use of a single measure of socio-economic status based on parental occupation. It is possible that this measure was not sufficiently sensitive to measure all of the variation in the social and economic differences between the Maori and non-Maori populations. As a result of both of the above factors, the adjusted rates reported by Fergusson et al (1975) are likely to produce an over-estimate of the true differences in rates of offending between Maori and non-Maori after adjustment for socio-economic factors.

More recently Fergusson and his associates have examined the relationships between both self reported and officially recorded offending in a birth cohort of New Zealand children studied into adolescence (Fergusson, Horwood & Lynskey 1993a, 1993b). These studies have produced two general conclusions about the origins of linkages between ethnicity and crime in New Zealand. First, the associations between self reported crime and ethnicity were adequately explained by a range of social and familial disadvantages that were more prevalent in Maori families (Fergusson et al 1993a). However, linkages between ethnicity and officially recorded offending could not be explained entirely in these terms and Maori children were found to be at increased risks of arrest even when due allowance was made for offence
severity and social factors (Fergusson et al 1993b). These results clearly suggest that officially recorded statistics may be influenced by labelling biases in which Maori children are more likely to come to official attention than non-Maori children with a similar offending history and social background.

The Maori Perspective (He Whaipaanga Hou)

In recent years an alternative perspective on Maori offending and other Maori disadvantages has been emerging. This perspective emphasises the role of cultural factors rather than social or economic factors as determinants of rates of offending amongst Maori and has been most clearly articulated by Jackson (1988a, 1988b). Jackson (1988) proposed both a theory of Maori crime and a methodology for testing this theory. The kernel of this theory is that the higher rates of offending amongst Maori are due to factors which are unique to Maori and place Maori at greater risk of both offending and being classified as offenders. These factors can be divided into system-based factors, such as the police, courts and Justice Department, and offender-based factors. Jackson (1988a, 1988b) identifies a series of offender related factors which he suggests are unique to Maori. These include cultural factors, family factors, community factors and individual factors relating to the disadvantaged status of the Maori community that conspire to place young Maori at greater risk of involvement in criminal behaviour. He argues that these factors are unique to Maori and place young Maori at greater risk.

To test and develop this theory, Jackson (1988a, 1988b) proposed a research methodology based upon a Maori perspective. In this methodology, explanation of the sources of offending amongst Maori is based upon the experiences of Maori people rather than upon the comparative analysis of statistical data. To implement this methodology Jackson (1988a, 1988b) attended hui (meetings) with over 6,000 Maori participants throughout New Zealand.
and, on the basis of these hui, a consensual account of the perceived sources of Maori offending was constructed. Jackson (1988a, 1988b) emphasises that this methodology is consistent with traditional Maori culture and values which emphasise the role of consensual decision making and problem solving.

Against this general background this paper reports on a study of the relationships between ethnicity and interpersonal violence in a cohort of New Zealand born children that has been studied from birth to young adulthood. In general terms the aims of this analysis are to address the following issues.

First, the analysis aims to document ethnic differences in rates of both self reported and officially recorded involvement in interpersonal violence at the age 18. The central question addressed in this analysis is to what extent are young Maori at greater risk of being both victims of and perpetrators of violent offences.

Second, the analysis aims to provide a profile of social and family differences between Maori and non Maori during childhood and adolescence to examine the extent to which there were ethnic differences in a series of social, economic and family factors that may have contributed to later patterns of interpersonal violence in young adulthood.

Finally, the analysis examines the extent to which ethnic differences in interpersonal violence can be explained by ethnic differences in social, economic and family factors. More generally the analysis seeks to answer the question: To what extent are Maori at higher risk of involvement in interpersonal violence and to what extent can ethnic differences in involvement in violent behaviours be explained by ethnic differences in social, economic and family conditions?
METHOD

The analysis reported here is based on data gathered over the course of the Christchurch Health and Development Study (CHDS). The CHDS is a longitudinal study of a birth cohort of 1265 children born in all maternity units in the Christchurch (New Zealand) urban region during a four month period during mid 1977. The cohort has now been studied at birth, four months, one year and annual intervals to the age of 16 and again at age 18 using a combination of methods including interviews with parents, testing and interviewing of children and young people, teacher questionnaires and data from official records. In general terms the aims of the study have been to build up a running record of the life history, social circumstances, health and wellbeing of a relatively large cohort of New Zealand children growing up over the period from 1977 to the present time. The analysis reported here examines the following measures gathered over the course of the study.

Measures of Involvement in Interpersonal Violence at the Age of 18 Years

Data on involvement in interpersonal violence at around the age of 18 was gathered from two sources:

Self report. At age 18 cohort members were interviewed by trained and experienced survey interviewers using an extensive personal and mental health questionnaire that took approximately 1.5 hours to administer. Part of this questionnaire included questioning on the individual’s involvement in interpersonal violence. In the present analysis three self report measures of involvement in interpersonal violence are reported.

i) Whether the individual reported committing at least one violent offence during the period from 16-18 years. This questioning was based on items from the Self Report Delinquency Inventory (Elliot & Huizinga 1989).
ii) Whether the individual reported committing recurrent (3 or more) violent offences over the period from 17-18.

iii) Whether the individual reported being the victim of a violent assault over the period from 17-18 years.

*Police record data.* On the basis of signed consent provided by the cohort members and their parents it was possible for the research group to obtain official record data from the records held by the Youth Aid section of the New Zealand Police. These records showed that just over 3% of the cohort had come to police attention for violent offences by the age of 18 years.

The Measurement of Ethnic Identification

There are three different ways by which individuals may be classified as being of Maori descent. First, individuals may be classified as Maori on the basis of descent with individuals having some Maori ancestry being classed as Maori. Second, ethnicity may be defined on the basis of self identification with those individuals reporting identification with Maori culture being classified as Maori. Finally, in recent years Maori have frequently stressed the view that ethnic identification should be defined on the basis of whakapapa (lineage). In contrast to definition based on descent which requires that the individual has at least one Maori ancestor, definition on the basis of whakapapa requires that the individual can trace his lineage back to specific Maori ancestors and can identify the tribal affiliation of these ancestors.

In this study two bases for defining ethnicity were available:

i) Descent. Of the cohort of 1265 children entering the Christchurch Health and Development Study, 11.2% were of some Maori descent. In 80% of cases, children of Maori descent came from bi-ethnic families in which one parent was of Pakeha (European) ethnicity and the other of Maori ethnicity.
ii) Parental definition. At age 14 years parents were asked to describe the young person’s ethnic status.

In practice, analyses using definitions of ethnicity based on descent or parental definition of ethnicity yielded very similar conclusions. In the present analysis the definition used is based on parental report of the young person’s ethnic identification. Of the 1,025 young people studied at the age of 18 years, 96 (9.4%) were classified as Maori using this definition.

Social and Family Background

Over the course of the CHDS, extensive information has been collected on the social, childhood, family and parental characteristics of the cohort. A number of these measures are included in the analysis to characterise the differences between Maori and non Maori in terms of these factors. The measures considered included:

i) Measures of socio-economic background: These included measures of socio-economic status based on the Elley/Irving Scale of Socio-Economic Status for New Zealand (Elley & Irving 1976); measures of parental educational achievement and measures of self reported family income.

ii) Measures of childhood family circumstances: These included measures of exposure to parental separation and/or divorce (Fergusson, Horwood & Lynskey 1994a); measures of exposure to family conflict (Fergusson, Horwood & Lynskey 1992); measures of the extent of parental use of physical punishment (Fergusson & Lynskey 1997) measures of parental bonding based on the parental bonding instrument (PBI) developed by Parker and his associates (Parker, Tupling & Brown 1979). In addition, the analysis included a global index of family problem behaviours based on the measures described by Fergusson, Horwood and Lynskey (1994b). This index provides a simple account of the number of family
disadvantages and difficulties that each cohort member was exposed to over the period from birth to the age of 15 years.

iii) Measures of parental characteristics: Measures of socio-demographic background and family circumstances were supplemented by a number of measures of self reported parental difficulties including: a) problems with alcohol; b) usage of illicit drugs; c) involvement in criminal offending.

Sample Sizes and Sample Attrition

The analysis reported below is based on a sample of 1025 young people for whom data on involvement in interpersonal violent at the age of 18 years was available. This sample represented 81% of the original cohort and 92.3% of all cohort members who were alive and resident in New Zealand at the age of 18. The sources of sample loss arose from outmigration from New Zealand (56.3% of sample loss); refusal to participate in the research by age 18 (35.4% of sample loss) and death (8.3% of sample loss). Comparisons of the 1025 participants in the research with the 240 non participants suggested that these groups were similar with respect to a number of socio-demographic variables including maternal age, family size, child ethnicity and gender. There were, however, small but detectable tendencies (p<.01) for the sample to under-represent children from families of lower socio-economic status, children whose parents lacked formal educational qualifications, and children who entered single parent families at birth. However, these biases were small and previous analyses in which corrections have been made for selective sample losses have suggested that the effects of non-random losses on the validity of the analysis are negligible (Fergusson, Fergusson, Horwood & Kinzett 1988; Fergusson & Lloyd 1991).

Whilst there is good reason to believe that internal validity was not influenced adversely by selective sample losses, there were however, other sources of sample selection that place
constraints on the conclusions that may be drawn from this analysis. In particular, the sample was drawn from a regional sample in the South Island of New Zealand. Since the Maori population is not uniformly distributed throughout New Zealand and has greater representation in the North Island, it is possible that a sample derived from the South Island may not be fully representative of Maori within New Zealand. Given this sample limitation, the results are likely to provide an adequate account of the linkages between ethnicity and interpersonal violence within a South Island based sample of Maori but should be applied cautiously in making inferences about North Island Maori populations. Nonetheless, it is not unreasonable to assume that the trends evident within a South Island based sample will broadly reflect those present within a North Island population.

RESULTS

Rates of Interpersonal Violence Amongst Maori and Non Maori

Table 1 compares the rates of: self reported violent offending; recurrent self reported violent offending; officially recorded police contact for crimes of violence and reports of being a victim of violent assault amongst Maori and non Maori participants in the Christchurch Health and Development Study at the age of 18. Each comparison is tested for statistical significance using the chi squared test of independence and the strength of the association between ethnicity and rates of interpersonal violence is described by the relative risk statistic.

INSERT TABLE 1 HERE

The table shows pervasive evidence to suggest greater involvement in interpersonal violence by Maori. At age 18, young Maori were more likely to report involvement in any violent offences and to report repeated violent offending over the past year, they were more likely to have an official police record for violent offending and reported higher rates of being a victim
of assault over the period from age 16 to 18 years. The relative risk estimates suggest that young Maori were approximately 1.5 to 3 times more likely to be involved in violent offending or to report being a victim of violence than non Maori.

Childhood and Family Antecedents of Violent Behaviours

The results in Table 1 clearly suggest that young people of Maori ethnicity were at greater risk of being both perpetrators and victims of violent crimes. Furthermore, since these results use both self report and official record data it seems likely that the ethnic differences in violent behaviours in Table 1 are unlikely to reflect reporting biases or artefacts that may be present with official record data. However, the presence of a correlation between ethnic status and reported involvement in violence does not provide an explanation of why young Maori were at greater risk of involvement in violent behaviours. As has been noted earlier, one explanation of this tendency may be that young Maori are exposed to different social, economic and childhood factors that may place them at greater risk of later involvement in interpersonal violence. This issue is examined in Table 2 which compares Maori and non Maori on a number of prospectively measured descriptors of childhood family, economic and related circumstances. For ease of presentation, these measures have been expressed in dichotomous form and the association between ethnicity and the dichotomously scored social, economic and family factors is tested for statistical significance using the chi squared test of independence.

INSERT TABLE 2 HERE

Inspection of the table shows the presence of pervasive differences in the social, economic and family circumstances encountered by Maori and non Maori cohort members. In general, children of Maori ethnicity tended to come from less socially and economically advantaged homes characterised by lower levels of parental educational achievement; lower family socio-
economic status and lower family income levels. During childhood they had greater exposure
to a series of potentially disadvantageous features including more frequent use of physical
punishment by parents, greater levels of parental conflict, more frequent changes of parents,
and experienced lower levels of parental care and higher parental over-protection than non
Maori. In addition, there were higher rates of personal problems amongst Maori parents
including alcohol abuse, illicit drug use and criminal offending.

The social profile that emerges of the Maori sample is clearly of a group of young people who
were more frequently reared in home environments that were characterised by sources of
material disadvantage, family dysfunction and parental difficulties that were likely to
contribute to future problems of adjustment. To place this matter in perspective it is
important to note that not all children in Maori families were reared in conditions of
disadvantage or family dysfunction and that not all non Maori avoided these conditions.
Rather there were, often small, but nonetheless consistent tendencies for the rates of family
disadvantage and dysfunction to be higher amongst Maori.

The Role of Social, Economic and Family Factors in Ethnic Differences in Interpersonal
Violence

Consideration of the results in Table 2 clearly leads to the conjecture that the higher rates of
involvement in interpersonal violence by young Maori may reflect their general social
background and childhood circumstances. It was possible to test this hypothesis by
examining the relationships between ethnicity and involvement in interpersonal violence
when due allowance was made for the differences in the family and social background
characteristics shown in Table 2. To achieve this, risks of violent behaviours were modelled
using logistic regression methods by fitting the model:

\[
\text{Logit Pr } (Y_i = 1) = \beta_0 + \beta_1 X_1 + \sum \beta_j Z_j
\]
where Logit Pr (Y_i = 1) was the log odds that a given individual would display a given form of interpersonal violence, X_1 was the dichotomous variable representing the individual’s ethnicity and Z_j were the set of family social and related factors described in Table 2. The critical test provided by this model involves estimation of the association between ethnicity and violence when the main effects of the confounding factors Z_j are taken into account. In particular, if the confounding factors Z_j explain the association between ethnicity and risks of interpersonal violence it would follow that the regression coefficient β_1 would be not significantly different from zero. On the other hand, evidence of a significant non zero coefficient β_1 would imply that, independently of family social and related factors, ethnicity was associated with risks of involvement in interpersonal violence.

The results of the logistic regression analysis are summarised in Tables 3 and 4. Table 3 shows log likelihood ratio chi square test of the null hypothesis β_1 = 0 from the regression model for each outcome. This analysis shows that in all cases ethnicity was not significantly related to risks of interpersonal violence when due allowance was made for social, family and related factors. These hypothesis tests are elaborated in Table 4 which shows estimates of the associations between ethnicity and measures of violent offending adjusted for family, social and related circumstances. These estimates may be interpreted as being the rates of interpersonal violence that would have been observed amongst Maori and non Maori had both populations been exposed to a similar mix of childhood family and economic factors. The Table also shows for each comparison the covariate factors that were significant in the regression equation.

**INSERT TABLES 3 AND 4 HERE**

The results in Table 4 elaborate and clarify the conclusions drawn from Table 3. It may be seen that when ethnic differences in violent offending and involvement in violence were
adjusted for social, economic and family factors, all differences in rates of interpersonal violence amongst Maori and non Maori were small and statistically non significant. The key variables that explained associations between ethnicity and risks of violence span a series of measures relating to family circumstances and parenting behaviours including: parental use of physical punishment, the level of parental care, parental history of alcohol problems, family history of offending and multiple family problems. More generally, the results in both Tables 3 and 4 conveyed the clear impression that the higher rates of interpersonal violence amongst young Maori were largely a reflection of the greater exposure of this population to family and social conditions that encouraged the development of violent behaviours and that once due allowance was made for the contextual variables, there was little evidence to suggest that young Maori were any more, or any less, prone to involvement in interpersonal violence than children of non Maori descent.

DISCUSSION

The preceding analysis has examined linkages between ethnicity and interpersonal violence in a New Zealand sample. The major findings and their implications are reviewed below.

First, it is clear that by the age of 18 years young Maori in this birth cohort were at greater risks of involvement in interpersonal violence. This increased risk of involvement in interpersonal violence was manifest in higher rates of self reported violent behaviours, increased rates of police contact for violence and higher rates of reports of being a victim of violent assault. To the extent that these measures spanned self report and official record data, there can be little doubt that Maori in this cohort had higher rates of involvement in, and exposure to, interpersonal violence as young adults.

Subsequent analysis suggested that the higher rate of involvement in interpersonal violence amongst young Maori could be predicted from, and explained by, prospectively measured
childhood and family circumstances. In particular, examination of the social, economic and family profiles of Maori and non Maori showed that during childhood Maori had greater exposure to a series of disadvantageous conditions including socio-economic disadvantage, higher rates of exposure of adversity during childhood and higher rates of parental problems and difficulties. When these childhood factors were taken into account the associations between ethnicity and interpersonal violence became statistically non significant. The principal factors that explained the correlations between ethnicity and interpersonal violence centred around a series of measures describing childhood and parenting variables. Young Maori had higher rates of exposure to physical punishment during childhood, reported lower maternal care scores, more often came from families characterised by parental alcohol problems and criminal offending and more often came from families facing multiple social and related problems. It would appear to be this configuration of family related factors that largely explained the higher rates of involvement in interpersonal violence amongst young Maori. The results of this study suggest that when due allowance was made for these family related factors rates of involvement in interpersonal violence were not significantly higher than amongst non Maori reared in similar childhood environments.

The explanation of the origins of higher rates of interpersonal violence amongst young Maori that emerges from this analysis appears to reflect an account that is a hybrid of socio-economic and cultural explanations of the origins of ethnic differences in interpersonal violence. At first sight, the findings that measures of family disadvantage and family functioning largely explain the higher involvement of young Maori in interpersonal violence appears to be consistent with a socio-economic explanation of the origins of ethnic differences. However, whilst measures of family functioning and disadvantage overlap with socio-economic factors it is quite clear that these factors are not simply a reflection of social and economic disadvantage but relate more to intra-family behaviours and practices. What
the results clearly suggest is that within Maori families in this cohort, levels of family functioning and parenting practices were such that young Maori were exposed to home environments more likely to encourage future involvement in interpersonal violence. The major question that requires resolution concerns the factors and processes that have led to higher levels of family dysfunction and difficulties in contemporary Maori families. It is likely that a precise answer to this question will be difficult to obtain since such an answer requires adequate historical data characterising the ways in which Maori social and family disadvantage has developed in New Zealand. However, in broad outline it seems likely that the difficulties and disadvantages faced by contemporary Maori families are likely to represent the end point of a long term historical process that has involved many components including: the pressures faced by, and change in Maori culture and language following colonisation, the loss of land and economic power base experienced by Maori, increasing urbanisation of Maori and the general reduction of status and prestige (mana) of Maori people within the context of New Zealand society (Duff 1993; Jackson 1988a, 1988b; Kelsey 1984; Walker 1996). It is likely that each of these changes has conspired to increase the likelihood that present day Maori families are faced with stresses, pressures and a history that increases the likelihood of family difficulties and dysfunctions which in turn are reflected in a large number of statistics showing relative Maori disadvantage in New Zealand.

At the same time it is important to place such findings in a clear statistical context. Findings showing ethnic differences in rates of violence and other forms of personal difficulty often become transformed in social debates to imply that these problems are the exclusive domain of one ethnic group. This stereotype is often highly misleading since elevated rates of difficulties in one social group may obscure the fact that most members of this group are not involved in the difficulty. One useful way of looking at the role of ethnicity in rates of interpersonal violence is to examine the population attributable risk (PAR) for ethnicity. The
population attributable risk gives an estimate of the percentage reduction in interpersonal violence that would occur if rates of this involvement were the same in Maori as they are in non Maori. This estimate suggests that even before adjustment for family factors, ethnicity played only a relatively modest role in involvement in interpersonal violence in this cohort. Estimates of the PAR suggest that if Maori had the same rate of interpersonal violence as non Maori, rates of involvement in interpersonal violence within this cohort would have been reduced by only 9% to 25% depending on the outcome assessed. The modest contribution of ethnicity to rates of interpersonal violence highlights the fact that whilst Maori were at higher relative risk of involvement in interpersonal violence the majority of those involved in violent behaviours were non Maori owing to the large number of non Maori within the cohort.

In recent years New Zealand has been involved in a painful reanalysis of the role of Maori within New Zealand society and a search for solutions for both past injustices and present day inequities between Maori and non Maori (Duff 1993; Spoonley 1990; Walker 1996). In the course of this debate, considerable emphasis has been placed on providing Maori with increased power and control over their social, personal and economic destinies (Duff 1993; Jackson 1988a, 1988b; Walker 1996). The present analysis highlights two issues that are relevant to this debate. First, the comparisons on interpersonal violence and, indeed, of Maori/non Maori comparisons in general, highlight the need for greater social equity and particularly the need for a society in which ethnicity is unrelated to individual life opportunities and life risks. Second, the findings suggest that within the area of interpersonal violence and, probably, many other areas of personal functioning, the major priority is that of developing social, economic and related policies that strengthen Maori family functioning and empower Maori families in ways that reduce the number of young Maori who are exposed to the mix of family disadvantage and family dysfunction that appears to be associated with increased risks of psychosocial problems during childhood and into later life.
There are two important caveats that should be placed on this analysis. First, the analysis has been based on a particular birth cohort of New Zealand children studied in a particular region in New Zealand. The extent to which the findings for this cohort hold for other contemporary cohorts or other parts of New Zealand is open to debate. In particular, as noted previously, because of the South Island base of the study the cohort under-represents children of Maori descent and it may be that the factors influencing involvement in interpersonal violence may differ regionally and may vary across different birth cohorts. Thus, whilst the present analysis provides an account of the prevalence of interpersonal violence and potential origins of ethnic differences in this birth cohort, further research is needed to examine the extent to which these trends and conclusions apply to cohorts in different regions of New Zealand and from those born subsequent to this cohort.

Secondly, the results have been based on a combination of self report and official record data to provide a profile of ethnic differences in interpersonal violence in the CHDS cohort. It is likely that both sources of measurement will be subject to errors of measurement and this could influence findings. In general the validity of the analysis above rests on the assumption that errors of measurement in the reporting of interpersonal violence for Maori and non-Maori are statistically independent of the individual’s ethnic status.

A further issue relating to measurement concerns the extent to which it is realistic to use survey based measures to describe rates of interpersonal violence amongst Maori. In particular, in recent years there have been claims that research into Maori should be conducted by Maori researchers using a Maori methodology (Jackson 1988a, 1988b; Pomare et al 1995; Rolleston 1989). It may be argued from this perspective that the present interview based study using a standardised questionnaire that was applied to both Maori and non-Maori could produce misleading results. At the same time the findings of this study generally support claims made by Maori researchers about the disadvantages and difficulties faced by
young Maori (Duff 1993; Jackson 1988a, 1988b; Pomare et al 1995). To the extent there is a convergence of conclusions reached by different methodologies this suggests that the results of the present study are likely to be robust and are unlikely to simply reflect bias arising from the choice of a particular research methodology.
ACKNOWLEDGEMENTS

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REFERENCES


Table 1: Rates (%) of violent offending and involvement in violence amongst Maori and non-Maori participants in the Christchurch Health and Development Study at age 18

<table>
<thead>
<tr>
<th>Measure</th>
<th>Maori (N = 96)</th>
<th>Non-Maori (N = 929)</th>
<th>Relative Risk (95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any violent offence (17-18 years)</td>
<td>33.3</td>
<td>17.6</td>
<td>1.9 (1.4, 2.6)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Repeated (3+) violent offences (17-18 years)</td>
<td>19.8</td>
<td>8.4</td>
<td>2.4 (1.5, 3.7)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Police record for violence (ever)</td>
<td>7.9</td>
<td>2.8</td>
<td>2.9 (1.1, 7.4)</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Victim of assault (16-18 years)</td>
<td>28.4</td>
<td>17.3</td>
<td>1.6 (1.2, 2.3)</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>
Table 2: Comparison of social, family and related characteristics of Maori and non Maori participants

<table>
<thead>
<tr>
<th>Measure</th>
<th>Maori %</th>
<th>Non-Maori %</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-Demographic Factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother lacked formal educational qualifications</td>
<td>68.8</td>
<td>49.2</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Family of semi-skilled/unskilled socio-economic status</td>
<td>42.4</td>
<td>25.4</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Family income in lowest quartile of income distribution</td>
<td>43.8</td>
<td>23.3</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td><strong>Childhood Experiences</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parents regularly used physical punishment during childhood</td>
<td>22.9</td>
<td>10.3</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>In highest quartile on parental conflict scale</td>
<td>41.8</td>
<td>21.7</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Experienced 3+ changes of parents during childhood</td>
<td>37.8</td>
<td>16.3</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>In lowest quartile of maternal care score</td>
<td>40.5</td>
<td>24.0</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>In lowest quartile of paternal care score</td>
<td>34.5</td>
<td>23.7</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>In highest quartile of maternal over protection score</td>
<td>34.8</td>
<td>25.5</td>
<td>&lt;.10</td>
</tr>
<tr>
<td>In highest quartile of paternal over protection score</td>
<td>33.3</td>
<td>23.2</td>
<td>&lt;.05</td>
</tr>
<tr>
<td><strong>Parent/Family Characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental history of alcohol problems</td>
<td>24.5</td>
<td>10.8</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Parental history of illicit drug use</td>
<td>41.8</td>
<td>23.2</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Family history of criminal offending</td>
<td>21.3</td>
<td>9.4</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>In highest decile on family problems scale</td>
<td>23.6</td>
<td>7.8</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Table 3: Log likelihood ratio (LR) chi square tests of effect of ethnicity on outcome measures after adjustment for covariates

<table>
<thead>
<tr>
<th>Outcome</th>
<th>LR Chi Square for Ethnicity (1 d.f.)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any violent offence (17-18 years)</td>
<td>1.48</td>
<td>&gt;.20</td>
</tr>
<tr>
<td>Repeated (3+) violent offences (17-18 years)</td>
<td>1.97</td>
<td>&gt;.15</td>
</tr>
<tr>
<td>Police record for violence (ever)</td>
<td>1.37</td>
<td>&gt;.20</td>
</tr>
<tr>
<td>Victim of assault (16-18 years)</td>
<td>2.63</td>
<td>&gt;.10</td>
</tr>
</tbody>
</table>
Table 4: Rates (%) of violent offending or involvement in violence amongst Maori and non Maori after adjustment for covariates

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Maori</th>
<th>Non-Maori</th>
<th>Adjusted Relative Risk</th>
<th>Significant Covariates a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any violent offence (17-18 years)</td>
<td>23.6</td>
<td>18.4</td>
<td>1.3</td>
<td>1,2,4,5</td>
</tr>
<tr>
<td>Repeated (3+) violent offences (17-18 years)</td>
<td>13.0</td>
<td>8.6</td>
<td>1.5</td>
<td>5</td>
</tr>
<tr>
<td>Police record for violence (ever)</td>
<td>5.3</td>
<td>2.9</td>
<td>1.8</td>
<td>5</td>
</tr>
<tr>
<td>Victim of assault (16-18 years)</td>
<td>24.5</td>
<td>17.8</td>
<td>1.4</td>
<td>1,3,4</td>
</tr>
</tbody>
</table>

a Covariates:

1 = parental use of physical punishment; 2 = maternal care score; 3 = parental history of alcohol problems; 4 = family history of offending; 5 = multiple family problems score