

**ACCUMULATED ADVERSITY AND HUMAN CAPITAL FORMATION:  
IMPLICATIONS FOR SOCIAL POLICY.**

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**Presented at the Seventh Australian Institute of Family Studies Conference**

**Sydney**

**24-26 July 2000**

**Disclaimer: the views and opinions in this paper are those of the author and not necessarily those of the Department or of the Australian Government**

**Acknowledgements: The assistance of John Horwood of the Christchurch Study on Health and Development is gratefully acknowledged – he extracted and analysed the new data presented in this paper and gave useful comment during the course of its development. The constructive comments of Peter Whiteford (currently with the OECD) and of Kim Bond and James Jordan (of DFACS) are also acknowledged with appreciation. Errors in the paper remain the author's responsibility.**

## Abstract

*Data from a New Zealand longitudinal study (Christchurch Study of Health and Development) show that the risk of welfare receipt in early adulthood rises sharply as the extent of exposure to childhood “adversity” or “risk factors” increases. Cross-sectoral evidence supports the proposition that the formation and maintenance of human capital (defined to include the sum total of an individual’s physical, psychological and economic capabilities) is highly sensitive to the extent of adversity experienced over the life course, and particularly that experienced in early childhood. The implications for social policy which seeks to emphasise prevention, early intervention and investment in human capital formation are explored.*

## Introduction

The philosophical and rational underpinnings of social policy are under challenge in Australia, as in many other OECD countries where welfare and other social spending continues to consume an increasing proportion of GDP. Australia’s spending on social security increased from 2.92% of GDP in 1971 (a half century low) to just over 7.35% in 1999.

Uncertainty about the sustainability of the current arrangements is a major impetus for the current re-examination of income support policy, but just as important is concern that the regime may be having unintended and damaging effects. Evidence of “inter-generational transmission” of welfare dependency (Pech & McCoull 1999)<sup>1</sup> is frequently cited as evidence of collateral damage (Murray 1994) and attributed to a combination of:

- moral hazard – the temptation to take hand-outs in preference to work;
- poor role modeling by the parents and their family members;
- the combined effects of high replacement rates<sup>2</sup> (for a few families), high effective marginal tax rates (for a high proportion of welfare recipients), and fringe benefits (such as health care cards, rent subsidies and transport concessions) which can reduce work incentives, particularly for those only able to obtain low paid work in unskilled or low skilled jobs, or limited part-time work in higher skilled jobs; and
- an institutional environment which fosters a culture of dependency rather than of initiative and self-reliance.

A necessary but not a sufficient condition for the success of a policy in achieving its goals is that it be formulated according to a map of the world which is accurate in its essentials. Applied social policy must be responsive to community values and norms – they are usually reflected in the specific destinations which are chosen and the routes selected for reaching them. However, if the map is wrong, then it is unlikely that an intended policy destination can be reached. If the map is right, but a poor route is chosen,

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<sup>1</sup> There is little Australian data on this question. The paper reports a slightly higher level of welfare receipt amongst teenage children of welfare recipients.

<sup>2</sup> The Australian system is one of safety net social assistance rather than a contributory social insurance model. The latter tend to have much higher replacement rates. However the Australian system can offer quite high replacement rates for some very large families with low earning capacity.

then the destination may be much more costly, hazardous and time-consuming to reach. Moreover, in a world of constant change, a desired destination may effectively be “wiped off the map” before it can be reached.

So an important part of the craft of applied social policy-making is continuous review of the map, the intended destination(s) and the route(s) being traversed so that they can be modified to accommodate new evidence about the world. Desirably, there will be regular and systematic observation of relevant aspects of the world to feed back into the policy-maker’s map.

Over the period which has seen a significant growth in welfare expenditure, there have been many changes which need to be incorporated in the social policy-maker’s map. For example: there have been significant shifts<sup>3</sup> in:

- the distribution of work across households (although the overall proportion of the population in work has remained relatively stable since 1945);
- the composition of households, with many more single person households and single-parent families;
- the pattern of employment and asset accumulation over the life-course for both men and women;
- the relative demand and wage level for skilled versus unskilled labour;
- the earnings gap between the top and bottom income groups in Australian society;
- the geographical concentration of disadvantage;
- the proximity of parents to their adult children and grandchildren<sup>4</sup>; and
- the proportion and average age of children in childcare.

In recent years the social policy destination which has been most actively pursued in conjunction with reforms to the Welfare State in English speaking countries, is one in which individuals are resourceful, self-reliant and economically active, families are strong and resilient and both communities and businesses recognise that they need to take an active role in seeking solutions to social problems both on their own initiative and in partnership with government.

There are ample signs that the road to this policy destination is likely to be challenging. The real questions are: do we have the right map and what is the best way to get there?

If the welfare state has failed to prevent poverty, family breakdown, mental illness, child abuse and other domestic violence, child behavioural problems and learning difficulties, is it possible that it has inadvertently contributed to them by, for example, facilitating family break-up, voluntary unemployment and the decline of community? If this be so, then consideration would need to be given to addressing perverse incentives in the welfare system. If, on the other hand, the evidence is that perverse incentives are not the

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<sup>3</sup> Not all of these changes are intrinsically negative. In some cases, such as growth in the number of workless households there are immediate adverse effects. The impact of some others, such as the increased use of childcare, may need to be assessed.

<sup>4</sup> Personal observation

only or even the most important factors, then the best route to the desired policy destination may lie in complementing income support measures with strategies to prevent or ameliorate the conditions which most contribute to these problems.

This paper argues that long term social welfare receipt amongst people of working age should be addressed through cross-sectoral cooperation in strategies which promote human capital formation. Such a strategy would be expected to produce other social and economic benefits.

### **Evidence from longitudinal studies**

The fact that not all individuals from disadvantaged, or even abusive, families and depressed neighborhoods grow up to lead lives at odds with social policy ideals, may be taken as evidence that their less successful peers were simply not trying hard enough and should be induced to do so. However, when the pathways leading to good and poor outcomes are traced with the aid of data from longitudinal studies, patterns emerge which make sense of the apparent contradictions.

Four important publications appeared last year which among them synthesize research across sectors on the circumstances or factors which individually or in combination increase the likelihood of poor outcomes (risk factors), or good outcomes (protection or resilience factors) in health, behaviour and economic activity (Marshall & Watt 1999; Homel et al. 1999; Marmot & Williamson 1999; Keating & Herzman 1999). The research described in these four publications suggests a possible answer to the conundrums posed by “successful” slum dwellers on the one hand and middle class “failures” on the other. They also explain why both these outcomes are relatively uncommon.

The socio-economic gradient across all learning, health and behavioural outcomes appears substantially to reflect differences in the degree to which families are able to meet the developmental needs of young children (McCain & Mustard 1999, Wadsworth 1999; Sherman 1999; Power & Herzman 1999) Growing up in an impoverished family is an important risk factor for a variety of developmental problems (Marsh & Watt 1999, pp107-114) and is often associated with economic, social and health difficulties in later life<sup>5</sup>. However, a strong parent-child bond<sup>6</sup> can help overcome some of the ill-effects of economic disadvantage (Ibid. pp120-122). Conversely, a child growing up in a middle class family, who may have access to a high standard of living, may suffer serious developmental problems if the parent-child relationship is characterised by abuse or indifference (Wisdom & White, 1997).

Some risk factors which seem to be common to poor outcomes across social policy sectors include low birth weights, prenatal difficulties, teen pregnancy, large family size and short spacing between children, parental conflict, substance abuse, mental illness,

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<sup>5</sup> Montgomery et al (1997) show that short stature at age 7 is a risk factor for adult unemployment. Bartley et al (1999) conclude that in a society such as great Britain the effect is still present when material and cultural factors are taken into account. They attribute it to psychosocial stress (op. cit. p 93).

<sup>6</sup> Or with another adult care-giver.

poverty or unemployment, single parent<sup>7</sup>, step or blended family, family isolation, abuse, neglect, or parental indifference.<sup>8</sup> These risk factors are exacerbated by difficult temperament, disabilities or chronic health problems in the child. (Homel et al, 1999, p.136) However, resilience factors, particularly strong attachment between the child and a parent or care-giver, but also including: authoritative parenting; high intelligence; easy temperament; problem solving skills; a sense of self-efficacy; and emotional regulation, together with strong attachment to school or community in older children, appear to lessen the adverse impact of risk factors which are present.(Homel et al, 1999, p.138, Marsh & Watt 1999 p120 et seq.).

As children develop, negative outcomes arising from earlier risk factors can themselves function as additional risk factors for subsequent problems. Sometimes this is represented as a pathways paradigm, with critical transition points throughout the life-cycle presenting both risks and intervention opportunities.

### **Risk, resilience and the development of human capital**

Although some authors distinguish between "psychological capital", "human capital and "social capital" (Zubrick et al. 2000), it can be useful to think of "human capital" as the sum of attributes which an individual brings to interactions with others and to the critical task of regulating him/her self. The dimensions of human capital thus comprise physical characteristics, health status, mental health and mood control, self-image and sense of self-efficacy, resilience to stress (which can be expressed physiologically and psychologically), labour market skills, knowledge, cultural awareness, and capacity for responsive personal relationships. It may also be useful to consider networks of personal support as a factor in human capital rather than just as social capital.

Estimates of the contribution of genetic factors to human capital vary (a range of twin studies cited in Marshall and Watts 1999, pp 40-44 reported heritability ranging from 21% to 100% on selected measures of attention and behavioural problems). However, the data on risk factors and the effects of accumulated lifetime adversity suggest that it is unlikely that molecular biologists will one day locate genes for resilience or welfare dependency. The resilient, resourceful, responsible and interdependent individual idealised in social policy goals can only develop in a real world which enables the development of human capital.

Influences on the early formation of human capital can be pictured as being located within a series of nested spheres which centre on the developing child. During the months from conception to birth all outside influences are mediated through the mother; at birth the delivery room, medical staff, medical technologies, and other family members have their first direct impact; during the early years before childcare or school, the family

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<sup>7</sup> Kelly (2000) provides a review of research on the risks associated with sole parent families and concludes that sole parent family structure is not in itself a risk factor, but is frequently associated with risk factors such as exposure to conflict or poverty.

<sup>8</sup> In adolescence association with an antisocial peer group is an important risk factor, but strong attachment to attachment to the community (eg.school) acts is protective (Homel et al. 1999);

and its network of intimates are the proximate influences, followed by successively greater exposure to the local community and the broad social environment.

Eisenberg (1999) advocates a paradigm in which nature, niche<sup>9</sup> and nurture are considered to affect child development. “Niche” refers to the location of a family within the community, its economic and its social status relative to others. This approach seems to be well supported by the research on risk and protection factors. (cf Marmot & Wilkinson, 1999; Keating & Herzman, 1999).

Special risks to the formation of human capital arise when developmental needs in early childhood are not met Possible causal mechanisms are now considered to lie in the biological “embedding” of deprivation or environmental “insults”. Deprivation might occur in the form of inadequate nutrition or stimulation or lack of the warm, responsive care that all children need; “insults” could include exposure to conflict or trauma.

Recent neurophysiological research gives support for the concept of critical periods not only for sensory development but also for the foundations of major psycho-social capabilities (Cynadu & Frost, in Keating & Herzman 1999). Children whose needs are not met during these periods may suffer absolute and irreversible deficits (McCain & Mustard 1999).

“Relative” deficits in human capital arise where knowledge, skills or cultural background are not matched with the demands of the environment. In principle such deficits could be addressed.

### **Data from the Christchurch Health and Development Study**

The few birth cohort studies now underway in Australia are too recent to permit the study of effects of childhood risk factors on outcomes in adulthood. A longitudinal study announced by the Commonwealth Government as part of the National Family Strategy will provide a major source of data in the future. The birth cohort of the Christchurch study, which commenced in 1978 with a sample size of over 1000, has now matured. Data from the study were extracted and analysed to answer the question “Is there any association between accumulated risk factors in childhood and welfare receipt in early adulthood?”

Table 1 shows a list of characteristics significantly correlated with increased likelihood of unemployment between 16 and 21 years. The variables are grouped under major headings: social/perinatal, family economic circumstances, family stability/family functioning; child adolescent behaviours; and cognitive educational outcomes. Many of the factors associated with increased risk of unemployment in early adulthood are the “usual suspects”. This exercise illustrates the importance of constructing a rich longitudinal data set – it is difficult to obtain accurate data on new variables retrospectively.

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<sup>9</sup> From “ontogenetic niche” coined by West & King (1984).

Table 2 gives rates of unemployment by childhood adversity score. The latter is constructed simply by summing the number of risk factors present. It should be noted that this is not a sophisticated instrument – some of the variables are not strictly independent, and there has been no weighting of factors. A more sophisticated scale with well-constructed and weighted risk factors would have greater predictive value. (Similar considerations apply in relation to tables 4 and 6). Nevertheless, the table illustrates how steeply the probability of unemployment rises as the adversity score, represented by the number of risk variables present, increases.

This pattern is repeated in tables 3 and 4. Table 3 shows the factors which increase the chance of having dependent children at age 21. Table 4 shows the relationship between adversity score and probability of having a dependent child at 21, having a dependent child and being on welfare at 21, and being a sole mother at 21, respectively. Here again the probabilities rise sharply as adversity score increases. Note that having a teenage parent is a developmental risk factor in this and other studies (Hardy et al.1997). Having a parent aged 21 was not identified as a risk factor in this study, but having lived in a sole parent family between the ages of 0-15 was.

Tables 5 and 6 show risk factors for being in receipt of welfare at age 21 and the relationship between adversity score and probability of welfare receipt. Once again, likelihood increases steeply with increasing adversity score.

### **Implications for social policy**

Data from the Christchurch study may be of greater relevance to Australia than data from countries geographically and culturally more remote, particularly as Australia and New Zealand have similar welfare systems. However, caution still needs to be applied in extrapolating findings such as these which may be sensitive to social and institutional differences. The data are consistent with the findings of longitudinal studies conducted in other OECD countries, which show how persistent the ill-effects of early adverse experience can be (for a wide range of such studies cf Marsh & Watt 1999, Ch.2, Marmot & Wilkinson 1999, Ch. 3; Keating & Hertzman 1999, Ch. 3).

Most of the individuals in the sample had low to "moderate" levels of risk exposure – but although the proportional contribution to welfare receipt was lowest for this group, the numerical contribution was the highest. Growth in unemployment levels has been a major source of growth in social security spending over the three decades. Some of the growth in unemployment may be due to an increase in the level of frictional unemployment, as companies have adopted more flexible hiring policies. Some may be deficits of human capital relative to the high-skilled requirements of emerging industries. Some may be associated with the growing geographical concentration of disadvantage<sup>10</sup> in areas where growth of employment opportunity is inhibited by the low concentrations of social and human capital. These areas may spiral downwards as those able to leave in search of opportunity do so.

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<sup>10</sup> Vinson 1999.

The developmental risk factors identified in the Christchurch study are similar to those identified in other longitudinal studies as major influences on health and well-being – ie on human capital. One could predict that, in the absence of intervention, the Christchurch sample will also demonstrate over time the previously observed connections between increased adversity exposure and harmful behaviour, relationship problems, long term welfare receipt, chronic health problems in early middle age and lower life expectancy.

Even if welfare systems have contributed indirectly to the problems of growth in welfare expenditure, many of the people who are most expensive in terms of their use of health, criminal justice and welfare services, are individuals on whom adverse circumstances have literally left their mark in the form of human capital deficits including a vulnerability to stress.

It is not clear that poor individuals would fare better in terms of risk and resilience exposure without a strong social welfare system. However, long term benefit receipt is itself a risk factor for all family members. This may result from factors such as financial strain, low relative income, and/or the loss of self-esteem and social status associated with unemployment. Regardless of background, people who are unemployed and on benefits for a long time show a decline in physiological and psychological functioning, and those whose prior experience has been most adverse (in terms of risk exposure) do worst (Wadsworth et al. 1999).

Interventions to give greater access to life-long learning could assist with human capital mismatch problems. Community or social capital development may boost economic activity and employment opportunity in areas in decline. However, those individuals whose life-time exposure to adversity has been highest may only respond to intensive interventions involving teams of professionals from a range of disciplines.

High levels of socio-economic inequality, to which unemployment is a major contributor, seem to have an adverse effect on human capital formation across a whole society<sup>11</sup>. It is a moot point whether interventions to address human capital deficits associated with inequality could or should be developed in preference to measures for tackling inequality directly. Government action to reduce inequality through higher levels of taxation and spending has not enjoyed great popularity in western democracies for some decades. It remains to be seen whether and at what point a perceived link between lower taxation, lower spending, and social problems might turn public sentiment around.

“Human capital” is a relatively new concept in mainstream public economic policy – the OECD is only now undertaking work on the development of a conceptual framework and measurement tools for assessing human and social capital and their application to the “knowledge economy”. In some ways the concept may seem to add little to what is normally understood as the personal capability of an individual. Its advantage lies in trying to provide a better analytical framework for appreciating the dimensions of

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<sup>11</sup> The impact of inequality is one of the main messages in Keating & Herzman 1999, Marmot & Wilkinson 1999, and Mc Cain & Mustard 1999.

individual differences and how they reflect or embody the vicissitudes of life. However, there are dangers – similar to those involved with genetic testing (which could form a component of human capital assessment) - that individuals with known high levels of adversity exposure may be unfairly denied opportunity<sup>12</sup>. Risk/adversity is, after all, about probability or susceptibility not destiny.

What the longitudinal data does confirm is that social policy which treats individuals as identical in terms of the assistance they should receive or the contribution which should be expected of them is likely to be ineffective as well as unfair. The Australian social security system, like many others in recent times, is attempting to pay more attention to the family circumstances of welfare recipients and to identify individuals who might benefit from complementary forms of assistance.

The data from longitudinal studies suggest the potential benefit of interventions which help prevent developmental problems in childhood: for example: wider promotion of maternal health and well-being; developmental screening of children especially between the ages of 0 and 5; widespread parenting programs, particularly for parents with multiple risk exposure, enriched child-care for children identified as being at risk; teaching of coping skills/problem solving to both young children and adults at risk, particularly where the adults are also parents; and wider spread access to well-validated relationship skill programs (to reduce damaging family conflict).

There are budgetary and other constraints on the large-scale introduction of such interventions. It may be preferable to trial smaller scale interventions and build up the evidence base on best-practice before moving to larger scale programs. Moreover, government intervention in matters concerning family functioning must also balance public interest, community values and respect for individual privacy. The widespread acceptance of a public interest in being informed about and taking action against domestic violence and child abuse is of comparatively recent origin. Attempted inroads into other areas of family functioning may meet with resistance unless a strong public interest case is mounted and accepted.<sup>13</sup>

Further work is required to elucidate the causal mechanisms behind risk and resilience and the formation of human capital. Potentially cost-effective interventions across social policy sectors need to be developed and evaluated. The National Families Strategy announced earlier this year includes a range of initiatives to strengthen families and communities. The evaluation of new initiatives such as these will provide useful feedback for our map and help identify the best route for achieving further progress toward our desired social policy destination.

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<sup>12</sup> Would this be simply another form of class discrimination?

<sup>13</sup> The sensitivity of privacy issues around the family in part prompted Gilbert Steiner to title his 1981 Monograph “*The Futility of Family Policy*” Brookings Institute. The other major consideration was the seemingly infinite variation of families.

**Table 1. Profile of social, family, individual and related characteristics for varying durations of unemployment experience (16-21 years)**

Measure	Duration of Unemployment (Months)				p
	0	<12 Mths	12-23 Mths	24+ Mths	
<u>Social/Perinatal Background</u>					
% Mother aged <20 years at birth of survey child	6.6	8.8	11.6	13.0	<.005
% Mother lacked formal educational qualifications	45.1	47.1	53.5	59.4	<.0001
% Family of semi skilled, unskilled SES	20.1	21.8	30.2	39.9	<.001
% Child entered single parent family at birth	4.4	2.9	9.3	13.8	<.001
% Low birthweight (<2500 g)	5.0	3.6	6.4	9.4	<.10
<u>Family Economic Circumstances</u>					
% Family in lowest quartile of averaged family income (0-10 years)	18.8	18.5	28.8	44.1	<.001
% Below average family living standards	17.8	17.9	24.7	46.0	<.001
% Family in receipt of welfare benefits - ever	28.8	32.5	44.4	62.9	<.001
- 3 years or longer	19.5	14.5	33.1	47.0	<.001
<u>Family Stability/Family Functioning</u>					
% Child ever lived in single parent family (0-15 years)	25.3	26.0	44.0	54.3	<.001
% 3+ changes of parents (0-15 years)	13.7	13.5	21.0	37.6	<.001
% 5+ changes of residence (0-15 years)	27.8	35.3	29.0	42.4	<.01
% Exposed to regular or severe physical punishment in childhood	8.3	10.3	10.6	26.0	<.001
% Exposed to childhood sexual abuse	7.9	10.9	8.8	22.9	<.001
% Parental history of alcohol problems	9.2	10.0	11.0	27.0	<.001

**Table 1. Profile of social, family, individual and related characteristics for varying durations of unemployment experience (16-21 years)**

Measure	Duration of Unemployment (Months)				p
	0	<12 Mths	12-23 Mths	24+ Mths	
% Parental criminality	8.4	9.4	14.0	34.1	<.0001
% Lowest quartile on parental attachment score (15 years)	23.4	23.4	28.0	39.7	<.001
<u>Child Adolescent Behaviours</u>					
% In highest decile of childhood conduct problems score (8 years)	5.9	8.0	11.5	18.6	<.001
% In highest quartile novelty seeking score (16 years)	20.4	27.3	38.9	24.2	<.001
% Frequent truanting (10 + occasions 14-16 years)	8.4	11.5	13.4	35.5	<.001
% Suspended/expelled from school	4.5	4.3	6.6	26.0	<.001
% Frequent offending (5+ offences 14-16 years)	6.6	9.8	9.4	24.6	<.001
% Alcohol/illicit drug abuse (14-16 years)	6.9	12.5	14.5	25.2	<.001
% Conduct disorder (14-16 years)	5.3	7.6	9.2	21.0	<.001
% High levels of affiliation with deviant peers (16 years)	5.9	7.1	8.6	18.0	<.001
<u>Cognitive/Educational Outcomes</u>					
% Lowest quartile IQ (8 years)	22.3	20.6	23.3	41.4	<.001
% School drop out (<16 years)	2.8	1.8	3.5	13.0	<.001
% Left school without qualifications	11.4	14.1	20.5	43.5	<.001



**Table 3. Profile of social, family, individual and related characteristics of young women with and without dependent children at age 21**

Measure	Dependent Child(ren) at Age 21		P
	No (N = 443)	Yes (N = 72)	
<u>Social/Perinatal Background</u>			
% Mother aged <20 years at birth of survey child	6.8	22.2	<.001
% Mother lacked formal educational qualifications	45.4	76.4	<.001
% Family of semi skilled, unskilled SES	18.7	47.2	<.001
% Child entered single parent family at birth	3.6	23.6	<.001
<u>Family Economic Circumstances</u>			
% Family in lowest quartile of averaged family income (0-10 years)	17.7	50.0	<.001
% Below average family living standards	16.8	50.0	<.001
% Family in receipt of welfare benefits - ever	31.6	70.6	<.001
- 3 years or longer	18.5	58.8	<.001
<u>Family Stability/Family Functioning</u>			
% Child ever lived in single parent family (0-15 years)	27.1	68.2	<.001
% 3+ changes of parents (0-15 years)	15.2	45.3	<.001
% 5+ changes of residence (0-15 years)	29.5	54.7	<.001
% Exposed to regular or severe physical punishment in childhood	7.8	23.5	<.001
% Exposed to childhood sexual abuse	16.8	22.1	>.25
% Parental history of alcohol problems	11.1	22.7	<.01

**Table 3. Profile of social, family, individual and related characteristics of young women with and without dependent children at age 21**

Measure	Dependent Child(ren) at Age 21		P
	No (N = 443)	Yes (N = 72)	
% Parental criminality	9.4	31.8	<.001
% Lowest quartile on parental attachment score (15 years)	26.5	28.4	>.70
<u>Child/Adolescent Behaviours</u>			
% In highest decile of childhood conduct problems score (8 years)	3.8	14.7	<.001
% First sexual intercourse <16 years	20.5	57.4	<.001
% Frequent truanting (10 + occasions 14-16 years)	10.0	36.9	<.001
% Suspended/expelled from school	3.0	9.0	<.05
% Conduct disorder (14-16 years)	4.7	15.2	<.001
% High levels of affiliation with deviant peers (16 years)	6.0	20.0	<.001
<u>Cognitive/Educational Outcomes</u>			
% Lowest quartile IQ (8 years)	22.1	38.3	<.01
% School drop out (<16 years)	1.8	10.3	<.001
% Left school without qualifications	9.5	43.1	<.001

**Table 4. Percentage of young women with dependent children at age 21 by childhood adversity score**

<b>Adversity Score</b>	<b>% of Sample</b>	<b>% With Dependent Child at Age 21</b>	<b>% With Dependent Child and Welfare Dependent at Age 21</b>	<b>% Single Mother at Age 21</b>
0-2	45.1	3.9	2.6	1.7
3-5	27.4	9.9	6.4	4.3
6-9	15.9	23.2	14.6	7.3
10-13	9.1	48.9	36.2	12.8
14+	2.5	53.9	46.2	30.8
		p<.0001	p<.0001	p<.0001

**Table5. Profile of social, family, individual and related characteristics associated with welfare dependence at age 21**

Measure	Welfare Dependence		p
	No (N = 825)	Yes (N = 186)	
<u>Social/Perinatal Background</u>			
% Mother aged <20 years at birth of survey child	6.6	17.2	<.001
% Mother lacked formal educational qualifications	45.8	63.4	<.001
% Family of semi skilled, unskilled SES	20.5	41.9	<.001
% Child entered single parent family at birth	4.1	15.6	<.001
<u>Family Economic Circumstances</u>			
% Family in lowest quartile of averaged family income (0-10 years)	18.6	44.6	<.001
% Below average family living standards	18.7	40.0	<.001
% Family in receipt of welfare benefits - ever	31.9	59.9	<.001
- 3 years or longer	19.5	48.0	<.001
<u>Family Stability/Family Functioning</u>			
% Child ever lived in single parent family (0-15 years)	27.3	57.4	<.001
% 3+ changes of parents (0-15 years)	15.0	32.7	<.001
% 5+ changes of residence (0-15 years)	28.6	43.0	<.001
% Exposed to regular or severe physical punishment in childhood	9.6	19.1	<.001
% Exposed to childhood sexual abuse	8.0	21.9	<.001
% Parental history of alcohol problems	10.0	21.9	<.001

**Table5. Profile of social, family, individual and related characteristics associated with welfare dependence at age 21**

Measure	Welfare Dependence		p
	No (N = 825)	Yes (N = 186)	
% Parental criminality	10.4	26.6	<.001
% Lowest quartile on parental attachment score (15 years)	24.5	34.0	<.05
<u>Child/Adolescent Behaviours</u>			
% In highest decile of childhood conduct problems score (8 years)	7.1	18.0	<.001
% Frequent truanting (10 + occasions 14-16 years)	10.3	27.7	<.001
% Suspended/expelled from school	6.2	14.8	<.001
% Frequent offending (5+ offences 14-16 years)	9.0	14.5	<.05
% Alcohol/illicit drug abuse (14-16 years)	9.9	19.4	<.001
% Conduct disorder (14-16 years)	6.6	17.3	<.001
% High levels of affiliation with deviant peers (16 years)	6.8	15.5	<.001
<u>Cognitive/Educational Outcomes</u>			
% Lowest quartile IQ (8 years)	20.8	41.8	<.001
% School drop out (<16 years)	2.7	9.0	<.001
% Left school without qualifications	13.0	40.3	<.001

<b>Table 6. Rates (%) of welfare dependence at age 21 years by childhood adversity score</b>		
<b>Adversity Score</b>	<b>% of Sample</b>	<b>% Welfare Dependent at Age 2</b>
0-2	43.4	8.2
3-5	27.6	16.1
6-9	17.6	28.1
10-13	8.2	44.6
14+	3.2	56.3

p<.0001

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