



MINISTRY OF
SOCIAL DEVELOPMENT
Te Manatū Whakahiato Ora

Understanding subgroups of sole parents receiving main benefits

**Centre for Social Research and Evaluation
Te Pokapū Rangahau Arotake Hapori**

July 2010

ISBN 978-0-478-32363-4 (online)

Contents

Executive summary	1
Background.....	3
Key findings	4
A relatively disadvantaged profile overall	4
Four high level groupings.....	4
Summary of high level groups and subgroups	5
Ethnic composition	8
Benefit history	9
Debt to MSD and Special Needs Grant use	9
Special Benefit	10
Section 70A deductions.....	10
Indicators of the health of sole parents on main benefits and of their children	11
Location and local area deprivation	12
Indicators of educational attainment	13
Employment histories	14
Exits from benefit and employment and partnering outcomes	15
Discussion	18
Other challenges in moving towards employment	18
Teenage parenthood and disadvantage	18
Tailoring approaches and interventions.....	19
Bibliography	21
Appendix 1 Research approach	23
Appendix 2 Profile of high level groups and subgroups, at 31 December 2005	28

Executive summary

This research aimed to increase our understanding of the sole parent benefit recipient population and to identify and better understand subgroups within that population, particularly disadvantaged subgroups, to inform policy and service development.

It explored the parenting, partnering, benefit and employment histories and other characteristics of sole parents receiving main benefits at the end of 2005, to the extent that these could be observed through the benefit administration data available.

On average, sole parents receiving main benefits had more disadvantaged backgrounds than might have been expected:

- just over half had spent at least 80% of the history period observed (the previous 10 years in most cases) supported by main benefits
- a third appeared to have become parents in their teenage years.

This reflects the over-representation of sole parents with long stays on benefit among those in receipt at any point in time, and the longer than average stays on benefit for those who become parents as teenagers.

Had the research considered all people granted benefit as a sole parent, or all people who received benefit as a sole parent over a window of time rather than at a point in time, the overall profile of the group would have appeared less disadvantaged.

Clustering techniques were used to identify 12 subgroups which give a rich picture of the diverse backgrounds and circumstances of sole parents receiving main benefits at the end of 2005. These 12 subgroups can be grouped into four high level groups:

- Early Starters
- Later Starters
- Older Long-term Domestic Purposes Benefit (DPB)
- Other Groups.

Early Starters (36% of sole parent benefit recipients, average age 29) tended to be 'early starters' both in terms of the age at which they became parents, and in terms of the age at which they had their first contact with the benefit system. Six in 10 appeared to have had children before age 20, and nine in 10 appeared to have had children before age 25. They were more likely than other sole parent benefit recipients to have spent a large proportion of their time supported by main benefits.

Later Starters (25% of sole parent benefit recipients, average age 30) tended to be older when they had their first child and older when they had their first contact with the benefit system. They were more likely than other sole parent benefit recipients to have only one child, to have a very young child, and to have spent some of their time employed and off benefit.

Older Long-term DPB recipients (22% of sole parent benefit recipients, average age 42) tended to have spent most of the last 10 years on DPB. Most had just one child, in most cases aged 10 or over.

Other Groups (17% of sole parent benefit recipients, average age 43) comprised four subgroups of older sole parents: those who had spent a lot of time receiving Invalid's Benefit; those who had spent time as jobseekers; those who had spent a lot of their time partnered to another benefit recipient; and those who had spent a lot of their time partnered and off benefit.

The Early Starter group appeared to be particularly disadvantaged. Half of them lived in high deprivation areas with a New Zealand Deprivation Index (NZDep) rating of 9 or 10. Levels of debt to the Ministry of Social Development (MSD) and Special Needs Grant use suggest that many struggled to cope financially.

Early Starters were the most likely to appear to have no formal educational qualifications, but a higher proportion of members of this group than any other had used the Training Incentive Allowance in the last year. This suggests that some may have been seeking to improve their qualifications.

Because sole parents in the Early Starter group tended to have more children than average, this group accounted for close to half of the children of sole parent benefit recipients.

Compared to their share of the overall population of sole parents receiving main benefits, Māori were over-represented in the Early Starter group. This partly reflects ethnic differences in age structure and fertility patterns.

In every group, some sole parents were participating in employment while in receipt of benefit. However, the proportion varied from over two-thirds of selected subgroups of Older Long-term DPB recipients and Other Groups to fewer than one in 10 in other subgroups.

The subgroups that had the highest likelihood of being employed while in receipt of benefit at 31 December 2005 were also the most likely to exit to employment in the following six months. This was the period in which the Working for Families in-work tax credit was introduced. Consistent with its design, the response to that tax credit appears to have been strongest among those already working.

For other groups the rate of exit from benefit and into employment was comparatively low, and participation in employment while in receipt of benefit was also low. Many appeared to be some way from being ready to work, with a history of long-term benefit receipt, limited work experience, low qualifications and location in communities of disadvantage.

These findings highlight the variation in backgrounds and in employment outcomes, both between and within groups. They suggest that different approaches are needed for working with different people.

For many, the path to sustained part- or full-time employment may be a long one, requiring a number of different services and interventions and a series of intermediate steps.

For some, employment will not be a realistic outcome in the short term, and the priority may be interventions that improve the quality of life on benefit for both the parents and their children.

Background

This research aimed to increase our understanding of the sole parent benefit recipient population and to identify and better understand subgroups within that population to inform policy and service development.

In the past, information on the sole parent benefit recipient population has been largely restricted to a snap-shot at a point in time, providing limited information about people's backgrounds.

This study constructed a range of measures, including measures of people's backgrounds as well as of their current characteristics. It examined parenting, partnering, benefit receipt and employment backgrounds to the extent that these could be observed through the benefit administration data available.

For each person, the study looked back over a 10-year history period, or a shorter history period in the case of people aged under 28:

- for those aged 20–27, we looked back to the date of their 18th birthday
- for those aged under 20, we looked back to their 18th birthday, or the date they first received benefit if they received benefit as a 16 or 17 year old.

In order to identify and better understand subgroups within the population of sole parents receiving benefits, cluster analysis techniques were applied to the measures assembled.

Cluster analysis is an exploratory data analysis tool which forms groups so that the individuals in each are most similar to other members of the same group, while being as different as possible to members of other groups. It is a method that can be used to discover structures in data without testing any particular hypothesis about why those structures exist.

Any clustering analysis is inherently a subjective exercise, and the groupings arrived at are sensitive to the measures included in the analysis and the weightings they are given.

The present study focused on measures of parenting, partnering, benefit receipt and employment backgrounds, as well as measures of current circumstances and characteristics such as age, number of children, the age of the youngest child, current earnings, and the type of benefit received.

Appendix 1 describes the measures included in the analysis and the approach. The analysis was broadly similar to that applied in the Sickness and Invalid's Benefit Client Clustering research undertaken in 2005 (McLeod and Beynon, 2006).

This report profiles the groups formed as a result of the cluster analysis against a range of measures, including some that were not used in the forming of groups (ethnicity, levels of debt to the MSD, the use of supplementary assistance, location, local area deprivation, and off-benefit outcomes over a six month follow-up, for example).

Key findings

A relatively disadvantaged profile overall

The research considered all sole parents in receipt of a main benefit at 31 December 2005 – around 114,000 people. Of this group:

- just over half had spent at least 80% of the history period supported by main benefits
- a third appeared to have become parents in their teens.¹

This is a more disadvantaged profile than might have been expected. It reflects the over-representation of sole parents with long stays on benefit among those in receipt at any point in time.

Some sole parents who take up benefits require support for only a short period. Others stay in receipt of benefit for a very long time.² Because of their long stays, this second group makes up a larger proportion of those in receipt at a given point in time than the first.

The high proportion of sole parent benefit recipients who became parents in their teens reflects the fact that members of this group, and their children (Barrett et al, 2003), have a high risk of long-term benefit receipt.³

Had the research considered all people granted benefit as a sole parent, or all people who received benefit as a sole parent over a window of time rather than at a point in time, the overall profile of the group would have appeared less disadvantaged.

Four high level groupings

Using clustering techniques, sole parents who received main benefits at the end of 2005 could be grouped into four high level groupings (see Figure 1). These could be characterised as:

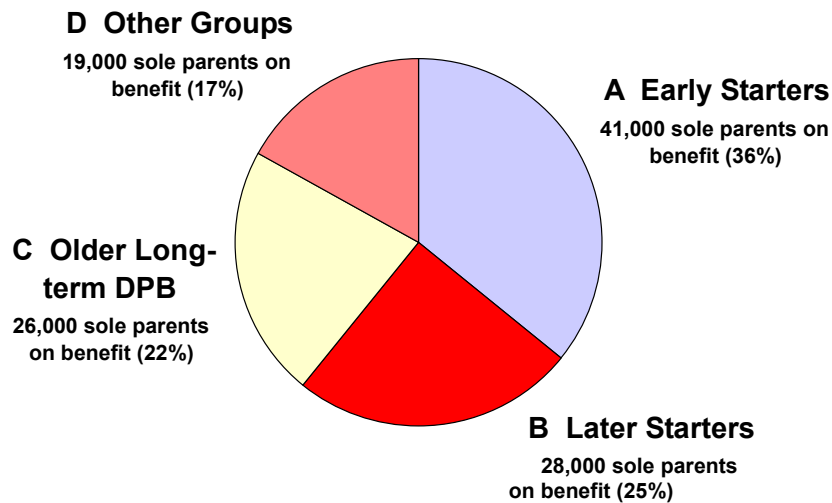
- A Early Starters
- B Later Starters
- C Older Long-term Domestic Purposes Benefit (DPB)
- D Other Groups.

1 Derived by comparing the birthdate of the sole parent with the birthdates of all the children included with them in periods when they received benefit as a sole parent over the previous 10 years. In the case of older sole parents, this will not be as good as an indicator of early parenting because some first-born children may have already turned 18, or may have left the care of the parent, before the beginning of the 10-year window.

2 Of all sole parents who came on to Domestic Purposes Benefit–Sole Parent or the Emergency Maintenance Allowance in the year to June 1996, just over one-quarter received main benefits for less than three years out of the following 10. One in three received main benefits for eight or more years out of the following 10. (Source: unpublished calculations from the MSD's benefit dynamics data set.)

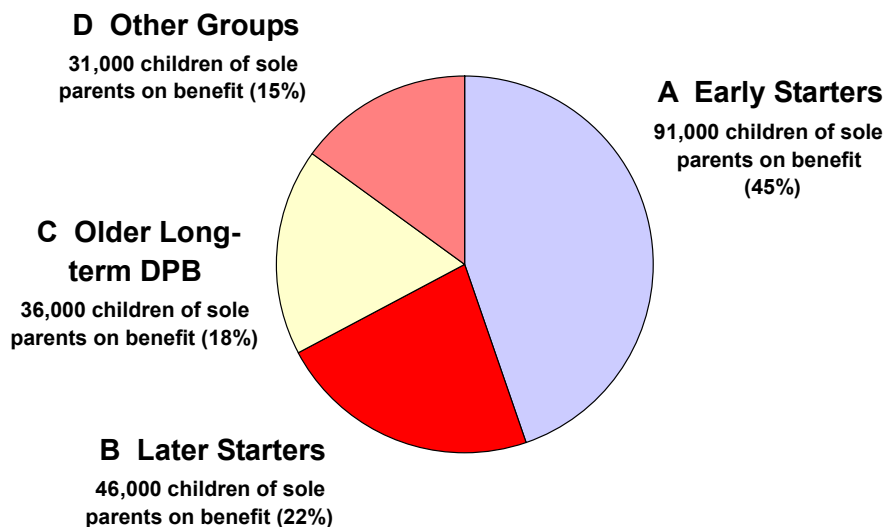
3 Of teenage sole parents who came on to Domestic Purposes Benefit–Sole Parent or the Emergency Maintenance Allowance in the year to June 1996, only one in 10 received main benefits for less than three years out of the following 10 (compared with just over one-quarter of entrants of all ages). Just over half received main benefits for eight or more years out of the following 10 (compared with one-third of entrants of all ages). (Source: unpublished calculations from the MSD's benefit dynamics data set.)

Figure 1: Four high level groups of sole parents on benefit, as at 31 December 2005



Because sole parents in the Early Starter group tended to have more children than average, this group accounted for 45% of the 204,000 children included in the benefits of sole parents at 31 December 2005 (see Figure 2).

Figure 2: Children of sole parents on benefit by high level groupings, as at 31 December 2005



Summary of high level groups and subgroups

Within the four high level groups, 12 subgroups could be identified. The general characteristics of each high level group and the nature of its subgroups are summarised below.

Note that, while the shares of time spent on different benefit types are known with certainty, shares of time spent in different off-benefit states (eg percent of time employed and off benefit) have been estimated for this research by applying assumptions to the available data. The estimates may over- or under-state the true levels (see Appendix 1).

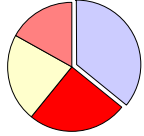
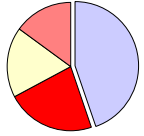
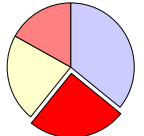
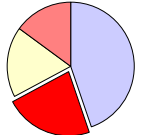
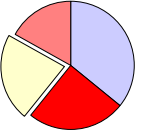
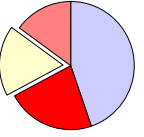
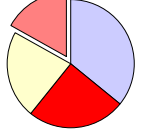
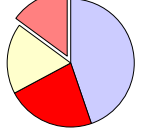
<p>A EARLY STARTER average age 29</p> <ul style="list-style-type: none"> • Young when oldest child born (58% aged under 20). • Young when first received main benefits. • Almost all history spent on benefit on average. • Most have a child aged under 5, most have more than one child. • Three subgroups: <ul style="list-style-type: none"> – A1 Younger, 1–2 children, youngest aged under 5. – A2 Older, 1–2 children, youngest aged 5 or over. – A3 Older, 3 or more children, youngest aged under 5. 	 <p>41,000 sole parent clients (36%)</p>  <p>91,000 children of sole parent clients (45%)</p>
<p>B LATER STARTER average age 30</p> <ul style="list-style-type: none"> • Not as young when oldest child born. • Older when first received main benefits. • Just over half of history spent off benefit, some time in employment. • Most have a child aged under 5, most have only one child. • Three subgroups: <ul style="list-style-type: none"> – B1 Younger, 1 child, half with youngest aged under 2. – B2 Older, 1–3 children, youngest aged 2 or over. – B3 Ex-jobseeker, 1 child, youngest under 5. 	 <p>28,000 sole parent clients (25%)</p>  <p>46,000 children of sole parent clients (22%)</p>
<p>C OLDER LONG-TERM DPB average age 42</p> <ul style="list-style-type: none"> • Don't appear to have parented as teens but this may be because the first born children of some were aged 18 or over. • Most of history spent receiving benefit, mostly DPB. • One-third have earnings in addition to benefit. • Most have a youngest child aged 5+, most have only one child. • Two subgroups: <ul style="list-style-type: none"> – C1 Non-earner, 1 child, youngest aged 10 or over. – C2 Earner, 1 child, youngest aged 10 or over. 	 <p>26,000 sole parent clients (22%)</p>  <p>36,000 children of sole parent clients (18%)</p>
<p>D OTHER GROUPS average age 43</p> <ul style="list-style-type: none"> • Some of history spent off benefit, little time spent on DPB. • More likely than average to have been partnered in last 10 years. • Most have a youngest child aged 5+, most have only one child. • Four subgroups: <ul style="list-style-type: none"> – D1 Invalid's Benefit recipient, 1 child, youngest aged 5 or over. – D2 Ex-jobseeker, 1 child, youngest aged 10 or over. – D3 Ex-off benefit partner, 1–2 children, youngest aged 5 or over. – D4 Ex-on benefit partner, 1–3 children, youngest aged 5 or over. 	 <p>19,000 sole parent clients (17%)</p>  <p>31,000 children of sole parent clients (15%)</p>

Table 1, below, summarises the profiles of the high level groups and their subgroups.

Table 1: Profile of high level groups and subgroups

	A Early Starter				B Later Starter				C Older Long-term DPB			D Other Groups					ALL GROUPS
	A1 Younger, 1–2 children	A2 Older, 1–2 children	Older, 3+ children		B1 Younger, 1 child	B2 Older, 1–3 children	B3 Ex-jobseeker		C1 Non-earner	C2 Earner		D1 IB recipient	D2 Ex-jobseeker	D3 Ex-off benefit partner	D4 Ex-on benefit partner		
	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	
% Sole parent clients	36	15	9	12	25	11	9	5	22	16	6	17	3	8	4	2	100
% Their children	45	12	9	23	22	9	10	4	18	13	5	15	2	6	4	3	100
Female	97	97	98	98	84	93	86	61	89	87	94	75	75	61	92	95	88
Aged 16–19	6	14	0	0	4	6	1	7	0	0	0	0	1	0	0	0	3
Aged 20–24	22	44	6	6	22	34	6	25	0	0	0	2	4	1	3	1	14
Aged 25–29	26	32	24	20	25	35	11	25	1	1	1	3	6	1	5	4	16
Aged 30–34	23	9	37	30	20	18	23	19	11	12	7	11	11	6	16	17	17
Aged 35–39	15	2	22	26	16	6	29	15	24	27	17	21	18	17	27	23	18
Aged 40–44 years	7	0	8	14	9	1	21	6	30	30	29	24	21	24	25	23	15
Aged 45 years or older	2	0	3	5	4	0	9	3	34	29	46	40	40	51	23	32	16
With 1 child	33	57	34	1	60	70	37	76	63	63	63	57	69	66	45	35	50
With 2 children	32	41	54	4	26	26	33	14	33	34	31	30	22	26	40	34	30
With 3 children	22	2	9	57	10	4	20	5	4	3	5	10	7	7	12	20	13
With 4+ children	13	0	3	39	5	0	11	5	0	0	1	3	2	1	2	11	7
With youngest under 2	27	36	10	28	39	48	24	42	1	1	1	5	8	2	8	6	20
With youngest 2–4	35	44	21	34	35	38	33	31	3	3	1	11	13	5	19	12	23
With youngest 5–9	32	20	51	31	22	13	34	23	26	28	20	28	25	23	35	36	27
With youngest 10–13	6	0	17	6	4	0	8	4	38	36	41	29	26	33	22	27	17
With youngest 14+	0	0	1	0	1	0	2	0	33	32	37	28	28	36	16	19	12
Had child before aged 18	26	29	23	24	7	7	4	9	7	8	3	4	6	4	2	8	13
Had child before aged 20	58	64	54	53	22	27	14	25	19	22	11	12	14	10	9	20	33
Had child before aged 25	91	95	91	87	63	74	45	69	52	56	41	37	43	33	34	51	66
Average % of time off benefit as partner	2	1	1	4	8	8	12	1	4	4	4	7	1	3	20	3	5
Average % of time as partner on benefit	3	2	1	5	3	4	2	1	1	2	1	8	1	3	1	46	3
Of those aged <28, % on benefit by 18th birthday	69	65	79	81	40	36	19	63	61	77	39	51	81	63	14	81	57
Average % of time spent on benefit	90	87	94	89	46	45	31	77	85	85	85	60	90	60	26	84	73
Average % of time spent on DPB	77	67	90	79	23	25	23	17	78	76	82	15	11	11	21	28	53
Average % of time spent on Unemployment Benefit	7	12	2	4	16	10	4	53	3	4	1	14	2	26	1	3	9
Average % of time spent on Invalid's Benefit	0	0	0	0	0	0	0	0	1	1	1	11	68	2	0	2	2
Average % of time spent on Sickness Benefit	3	5	1	1	4	5	2	5	1	1	0	6	8	10	1	1	3
Currently on DPB – Sole Parent	98	98	98	97	89	95	89	78	92	90	96	52	5	42	89	76	87
Average % of time employed off benefit	3	4	2	2	16	21	15	9	4	4	5	11	2	13	16	2	8
Currently earning	15	10	28	11	14	20	10	6	32	19	67	27	9	12	69	25	20

Ethnic composition⁴

Ethnicity was not one of the measures included in the cluster analysis used to form groups. Despite this, the groups were quite different in ethnic composition.

Compared to their share of the overall population of sole parents receiving main benefits, Māori were over-represented in the Early Starter group (Table 2).⁵ Almost half of Māori sole parent benefit recipients (47%) were in the Early Starter group (Table 3).

This over-representation will partly reflect ethnic differences in age structure and fertility. Māori have a more youthful age structure, and Māori women are more likely than women in other ethnic groups to have children as teenagers⁶ or in their early 20s. On average, Māori women also have higher fertility rates than New Zealand Europeans and other ethnic groups (and slightly lower rates than Pacific peoples).⁷

Table 2: Ethnic profile of high level groups

Ethnicity	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
New Zealand European	31	40	48	42	39
Māori	53	35	35	32	41
Pacific peoples	10	12	7	8	10
Other	4	11	10	14	9
Missing	1	2	0	3	1
Total	100	100	100	100	100

Table 3: Proportion of sole parent benefit recipients in each ethnic group in each high level group

Ethnicity	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole-parent benefit recipients (%)
New Zealand European	29	25	28	18	100
Māori	47	21	19	13	100
Pacific peoples	39	31	15	15	100
Other	17	30	26	27	100
Missing	16	40	7	37	100
Total	36	25	22	17	100

⁴ Ethnicity in this section is based on the SWIFTT ethnic code recorded for the individual. Where the person has multiple ethnic groups recorded in other MSD databases (the jobseeker register SOLO or UCVII), the SWIFTT ethnic code is prioritised so if a client identifies as Māori and any other ethnic group, they will be recorded as Māori.

⁵ Appendix 2 shows the ethnic profile and other characteristics of the 12 subgroups.

⁶ In 2000–2002, teenage birth rates for Māori were over three times higher than those for European teenagers, and Pacific teenagers were more than twice as likely as Europeans to give birth in their teens. (Source: Statistics New Zealand, 2006, Population Monitor.) Births to women under 20 years represent 4% of births to non-Māori women and 17% of births to Māori women. (Source: percentages and non-Māori figures derived by the MSD from Statistics New Zealand, Births – Tables, Age-specific Fertility Rates for the Total and Māori Populations, www.stats.govt.nz/tables/births-tables.htm.)

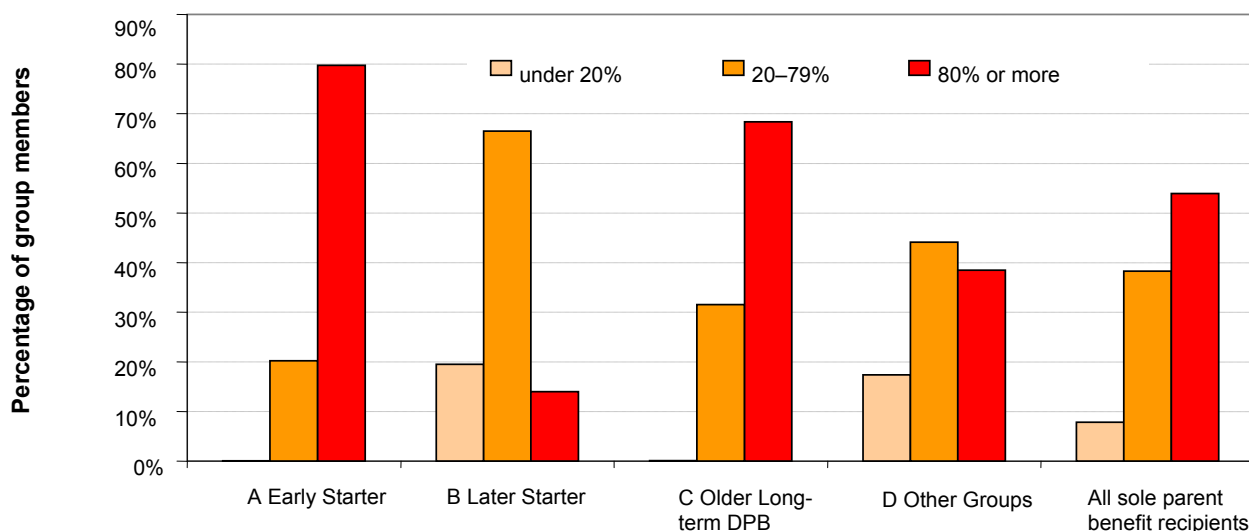
⁷ Total fertility rates by ethnic group in 2000–2002 were: Māori 2.59, Pacific 2.94, Asian 1.67, European 1.77 (total rate for all women 1.96). (Source: Statistics New Zealand, Age-specific Fertility Rates for the Major Ethnic Groups, www.stats.govt.nz/tables/births-tables.htm.)

Benefit history

Overall, just over half of sole parent benefit recipients had spent at least 80% of their history (the previous 10 years, or a shorter history period in the case of people aged under 28) on benefit, and 8% had spent less than 20% of their time supported by main benefits.⁸

The share of time spent on benefit was greatest for Early Starters and the Older Long-term DPB group – 80% of Early Starters and 68% of the Older Long-term DPB group had spent 80% or more of their time on benefit, compared with 14% of Later Starters and 39% of people in the Other Group (Figure 3).

Figure 3: Proportion of history period spent on benefit



Debt to the MSD and Special Needs Grant use

Levels of debt to the MSD and the use of Special Needs Grants suggest that many sole parent benefit recipients, and Early Starters in particular, struggle to cope financially.

Debts to the MSD can arise as a result of:

- benefit advances and the use of recoverable Special Needs Grants
- overpayments that occur due to changed client circumstances that reduce entitlement
- overpayments as a result of fraudulent activity.

Sixty percent of sole parent benefit recipients had debts to the MSD. For one in five overall, the level of debt was in excess of \$1,000. Early Starters were more likely than other groups to have debts, with nearly a quarter of this group having debt levels in excess of \$1,000.

Half of sole parent benefit recipients had received non-recoverable Special Needs Grants for food in 2005. Early Starters were more likely than other groups to use

⁸ We counted both time spent on benefit as a primary benefit recipient and time spent on benefit as a partner.

these payments. Nearly one-quarter received three or more Special Needs Grants for food in 2005.

Table 4: Debt to the MSD and Special Needs Grants

	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Debt to MSD at 31 December 2005					
\$1–\$499	27	24	25	23	25
\$500–\$1,000	17	14	12	12	14
\$1,000–\$5,000	18	14	14	14	16
\$5,000+	5	3	5	5	5
Total % with debt to MSD	67	55	57	54	60
Number of Special Needs Grants for food in last year					
1–2	35	32	30	29	32
3–4	17	11	11	10	13
5+	6	3	3	3	4
Total % with Special Needs Grants for food in year	58	46	45	42	49

Special Benefit

Special Benefit is a discretionary non-taxable benefit intended to provide assistance to clients whose particular circumstances are causing them hardship.

Special Benefit was replaced by Temporary Additional Support on 1 April 2006, but continues to be payable to clients who were receiving it, or had applied for it, immediately before that date so long as they remain qualified.

At 31 December 2005, 23% of sole parents receiving main benefits were also in receipt of Special Benefit (Table 5). Later Starters had the highest proportion in receipt.

Table 5: Special Benefit as at 31 December 2005

	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole-parent benefit recipients (%)
Special Benefit					
Receiving Special Benefit	23	26	21	19	23
Not receiving Special Benefit	77	74	79	81	77
Total	100	100	100	100	100

Section 70A deductions

Sole parents applying for benefit have to name the other parent of the child, apply for a formula assessment of child support, and participate in related court proceedings if required.

If they fail or refuse to meet these obligations they incur a financial penalty under section 70A of the Social Security Act 1964. This penalty reduces their benefit by \$22 per week for each child for whom the person refuses or fails to meet these requirements. A further penalty of \$6 per week per beneficiary applies after 13 weeks.

Exemptions from penalties are available under section 70A.⁹

At 31 December 2005, 12% of sole parents receiving main benefits had a section 70A penalty (Table 6). Early Starters were the most likely to incur deductions (20%). This may partly explain the higher rates of Special Needs Grant usage by this group.

Table 6: Section 70A deductions, as at 31 December 2005

Section 70A	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Met all obligations for all children	77	86	92	95	86
Section 70A deduction in respect of at least one child	20	11	7	4	12
Did not meet obligations for all children but exempted from any deductions	3	3	1	1	2
Total	100	100	100	100	100

Indicators of the health of sole parents on main benefits and of their children

Child Disability Allowance is a non-taxable allowance that is available to the principal caregiver of a dependent child who has a serious disability. It is paid because of the extra care that may be needed by a child who has a physical, sensory, psychiatric or intellectual disability.

Using the receipt of Child Disability Allowance as an indicator of the presence of health problems suggests that one in 10 sole parents receiving benefit had a child with a serious disability (Table 7).

Rates of receipt of this payment were highest among members of the older Early Starter subgroup with three or more children (A3), with almost one in five receiving this payment for at least one of their children (see Appendix 2). This will partly reflect the larger average family size of this group.

Disability Allowance is another payment that provides assistance to people who have ongoing, additional costs because of a disability, either their own or that of their child or children.

The Early Starter and Older Long-term DPB groupings were more likely than average to receive Disability Allowance for their children.

Nearly one in five members of the Older Long-term DPB group and a quarter of the members of Other Groups received Disability Allowance for their own health-related costs. This suggests that these groups had a higher likelihood of disability or ill health compared to others. This will partly reflect the positive association between age and poor health.

⁹ On five grounds: where there is insufficient evidence to establish in law who the liable parent is, where the beneficiary is taking active steps to meet their obligations, where there is a risk of violence, where the child was conceived as a result of incest or sexual violation, or where other compelling circumstances exist and there is no real likelihood of child support being collected.

Table 7: Proportion receiving Disability Allowances, as at 31 December 2005

	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Receiving Child Disability Allowance	12	7	11	10	10
Receiving Disability Allowance for child	7	3	8	6	6
Receiving Disability Allowance for self	9	7	18	25	13

Location and local area deprivation

The groups identified had slightly different geographic spreads (Table 8):

- Early Starters were more likely than average to live in Auckland, the Waikato, the Bay of Plenty, and the East Coast
- Later Starters were more likely than average to live in the main North Island urban areas
- Older Long-term DPB recipients were more likely than average to live in the South Island
- Other Groups were more likely than average to live in Northland or in the South Island.

All groups of sole parent benefit recipients were more likely than the general population to live in highly deprived areas. Forty-two percent overall, and 48% of Early Starters, lived in areas with a New Zealand Deprivation Index (NZDep) of 9 or 10, compared with 20% of the general population.

Table 8: Proportion of sole parent benefit recipients in each region and proportion resident in high deprivation areas

Region	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Northland	5	5	5	6	5
Auckland	33	35	30	30	32
Waikato	9	8	8	8	8
Taranaki	5	5	6	6	5
Bay of Plenty	11	10	10	10	11
East Coast	8	6	7	7	7
Central	6	6	6	6	6
Wellington	7	8	7	6	7
Nelson	3	3	4	4	3
Canterbury	8	8	10	10	9
Southern	5	5	6	6	5
Other	0	1	0	1	1
Total	100	100	100	100	100
% in NZDep 9 or 10 area*	48	40	38	39	42

Note: * Of those for whom NZDep could be obtained (92%).

Table 9: Of sole parent benefit recipients in each region, proportion in each group

Region	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Northland	37	22	22	20	100
Auckland	36	27	21	16	100
Waikato	38	24	21	17	100
Taranaki	35	23	24	17	100
Bay of Plenty	38	23	22	17	100
East Coast	41	22	22	16	100
Central	37	23	24	16	100
Wellington	37	26	22	15	100
Nelson	28	25	27	21	100
Canterbury	32	24	26	19	100
Southern	30	25	26	19	100
Other	18	27	13	42	100
Total	36	25	22	17	100

Indicators of educational attainment

Compared to all other groups, Early Starters were the most likely to appear to have no formal educational qualifications (Table 10).

However, a higher proportion of members of this group (17%) than any other had used the Training Incentive Allowance in the last year. This might suggest that some were seeking to improve their qualifications.

Table 10: Recorded educational attainment* and proportion who received Training Incentive Allowance in year to 31 December 2005

Educational qualifications	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
None	55	39	50	46	48
School qualifications	42	50	43	38	44
Post-school qualification	3	9	7	8	6
Unknown	0	2	1	8	2
Total	100	100	100	100	100
Received Training Incentive Allowance in 2005**	17	14	15	12	15

Notes: * Educational attainment is based on the most recent account of the person's educational attainment recorded in the jobseeker register SOLO. In cases where a person registered as a jobseeker some years ago and has gained additional qualifications since then, the recorded qualifications will understate their attainment.

** Of those receiving Training Incentive Allowance-eligible benefits at 31 December 2005 (Domestic Purposes, Widow's and Invalid's Benefits).

Employment histories

Indicators of employment history were included in the cluster analysis used to form groups.

On average, Later Starters appeared to have spent the greatest proportion of their history period off benefit and in employment. Thirty percent appeared to have been in paid work for more than half their time off benefit (Table 11).

While a third of Early Starters and Older Long-term DPB recipients were known to have spent some time in employment while off benefit, the proportion of their time estimated to have been spent in this state was small.

Table 11: Indicators of employment history

Employment history	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Known to have been employed while off benefit	32	61	35	42	42
Employed off benefit for more than 50% of history period (inferred)	1	30	5	19	12
Of time on benefit, average % of time spent employed	10	10	26	24	16
Employed while in receipt of benefit at 31 December 2005	15	14	32	27	20

Sole parents receiving Domestic Purposes and Widow's Benefits are encouraged to participate in paid employment while in receipt of benefit.

On average, members of the Older Long-term DPB and Other groupings had spent around a quarter of their time on benefit, combining benefit receipt with employment (Table 11).¹⁰ The Older Long-term DPB group was the most likely to be employed while receiving benefit at the end of 2005.¹¹

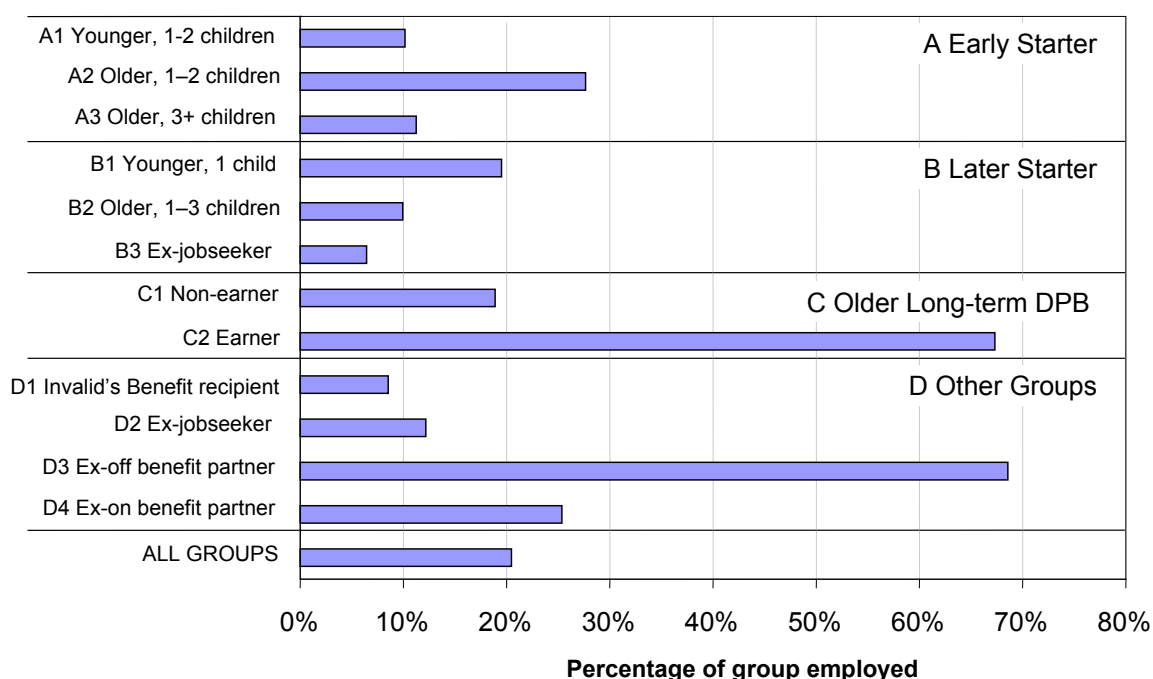
Figure 4 shows that, within the Older Long-term DPB, the majority of subgroup C2 (Earners) were employed. A similar proportion of the Other Groups subgroup D3 (most of whom had formerly been partnered and off benefit) were in employment.

Within the Early Starter group, more than one-quarter of those in A2 (the small older subgroup with 1–2 children) were employed. In most cases the youngest child of sole parents in this subgroup was aged five or over (see Table 1). Only one in ten of those in the remaining subgroups (A1 and A3) were employed. Members of these groups tended to have pre-school children.

¹⁰ Sole parents who receive Domestic Purposes, Widow's or Invalid's Benefits can make annual declarations of their earned income. We are unsure how this income is distributed over the year, but assume that it was earned in all weeks of the relevant year.

¹¹ Because some sole parents make annual declarations of their earned income, the proportions with earned income at any point in time should be viewed as indicative of either current participation in employment or participation in employment over the year.

Figure 4: Proportion employed while in receipt of benefit, 31 December 2005



Exits from benefit and employment and partnering outcomes

We followed each of the sole parents in the study over the six months from 31 December 2005 and examined exits from benefit in that period.

These off-benefit outcomes were not included in the clustering analysis used to form groups.

Table 12 shows the proportion who had at least one exit from benefit for any reason in that period, and the proportions known to have had an employment or a partnering-related exit.¹²

Older Long-term DPB recipients and members of Other Groups were the most likely to exit benefit for employment. Early Starters and Later Starters were the most likely to exit as a result of a partnership.

Overall, Later Starters and members of Other Groups had the highest likelihood of exiting benefit in the follow-up.

Table 12: Proportion who exited benefit in six months from 31 December 2005

	A Early Starter (%)	B Later Starter (%)	C Older Long-term DPB (%)	D Other Groups (%)	All sole parent benefit recipients (%)
Proportion of benefit exits					
Exited benefit for any reason	11	17	14	16	14
Exited benefit to partner	3	4	1	2	3
Exited benefit to employment	5	8	9	9	7

¹² Some may have exited for these reasons but not had this recorded.

Figure 5 shows that, of the Other Groups, subgroup D3 (former off-benefit partners) were the most likely to exit benefit. One-quarter left in the six-month follow-up.

The Later Starter subgroups B1 (younger with one child) and B2 (older with 1–3 children) and the Older Long-term DPB Earner subgroup (C2) also had comparatively high exit rates.

Figure 5: Proportion who exited benefit in six months from 31 December 2005

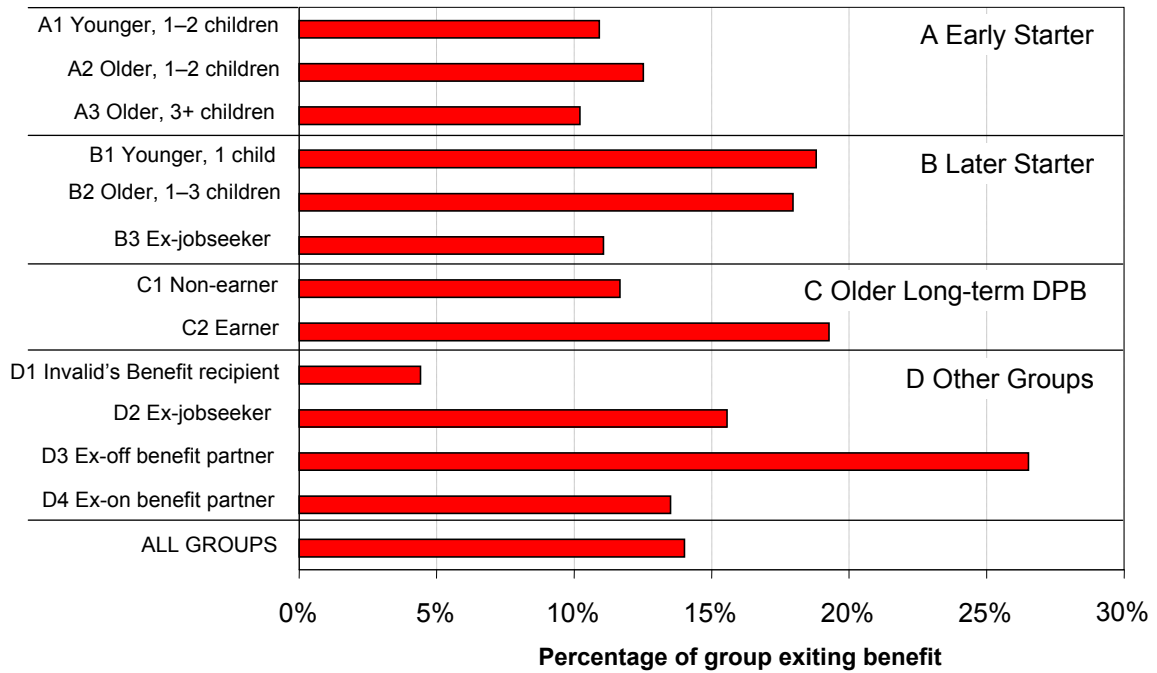
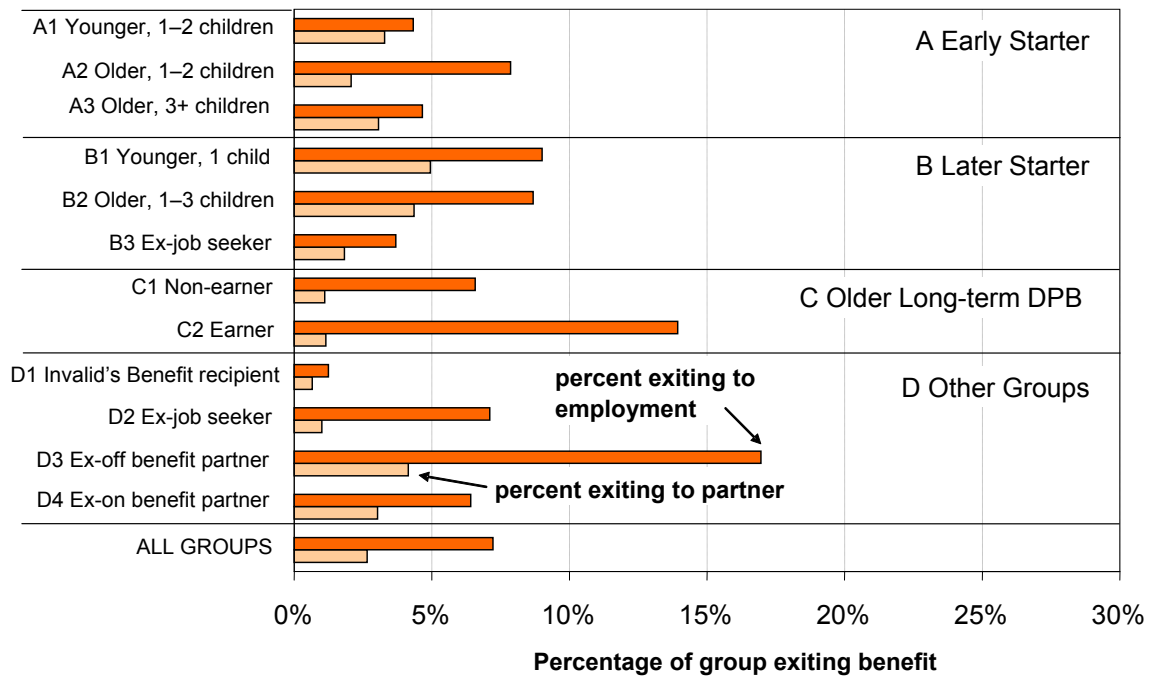


Figure 6 shows the proportions known to have left benefit for employment or a partnership.

Figure 6: Proportion who exited benefit in six months from 31 December 2005, by reason



The subgroups that had the highest likelihood of being employed while in receipt of benefit in Figure 4 (C2 and D3) were also the most likely to exit to employment in the six-month follow-up. This was the period in which the Working for Families in-work tax credit was introduced.

Other analysis suggests that, consistent with the design of the in-work tax credit, the increase in exit rates that accompanied its introduction was strongest among those already in paid work.¹³

Subgroups B1 (younger Later Starters with one child) and B2 (older Later Starters with 1–3 children) and D3 (former off-benefit partners) were the most likely to exit benefit for a partnership.

¹³ It is notable that the ex-jobseeker subgroup D2 had a reasonably high exit rate (more than 15% left in the follow-up), but comparatively few were known to have left for employment or partnerships. It may be that this group was more likely to lapse off benefit without any reason being recorded. The extent to which these exits involved movement into employment is unknown.

Discussion

Other challenges in moving towards employment

The data presented here begins to build a picture of the circumstances of different subgroups within the population of sole parents receiving benefits. It highlights the variation in circumstances, both between and within groups, in terms of a range of measures that are likely to indicate proximity to employment.

Other studies can help fill gaps in areas that the administrative data does not cover.

New Zealand studies show that sole mothers in general have poorer physical and mental health than partnered mothers (Sarfati and Scott, 2001). They also face much greater levels of criminal victimisation, including sexual offences and domestic violence, than other population groups (Mayhew and Reilly, 2007).

Domestic violence can directly affect sole mothers' ability to gain and maintain employment (Bancroft, 2004). It is also associated with poor mental health. In the Christchurch Health and Development Study, exposure to domestic violence was significantly related to an increased risk of depression, after controlling for other factors (Fergusson et al, 2005).

American and Australian research suggests high rates of disadvantage among sole parent benefit recipients (Jayakody et al, 2000; Jayakody and Stauffer, 2000; Gorske et al, 2006; Butterworth, 2003).

In an Australian study of sole mothers receiving social assistance benefits:

- 75% had not completed secondary education
- 47% had mental health difficulties, mainly anxiety (30%), depression (20%) and substantial psychological distress (29%)
- 12% had a substance abuse disorder
- 18% had a moderate to severe physical disability and 40% had common physical conditions
- 47% had experienced physical or sexual violence over their lifetime
- most had difficulties in more than one of these domains (Butterworth, 2003).

Māori sole parent benefit recipients appear likely to have an elevated risk of disadvantage. Māori in general are more likely than other groups to have poor mental health, largely associated with their more youthful age structure and more disadvantaged socio-economic position.¹⁴ They are also more likely than average to experience confrontational offences involving a partner (Mayhew and Reilly, 2007).

Teenage parenthood and disadvantage

Teenage parents and their children are not a homogenous group. Circumstances preceding and following teenage birth vary widely. But New Zealand and overseas studies indicate that young women who already experience disadvantage have a higher than average risk of becoming teenage parents.

¹⁴ Although differences remain between Māori and Pacific peoples in mood disorders and substance use disorders and between Māori and other ethnic groups in substance use disorders after controlling for age, sex and socio-demographic correlates (Oakley Browne et al, 2006).

Early conduct problems (Woodward and Fergusson, 1999; Boden et al, 2008), poor mental health (Barnet et al, 1996; Boden et al, 2008), and disengagement from schooling (Fergusson and Woodward, 2000) are associated with an elevated risk of becoming a teenage parent.

Behaviour that has brought young people to the attention of the police doubles the risk of becoming a teenage parent, compared to those who have had no police contact (Hobcraft, 1998).

Family violence in the form of receiving physical abuse from a parent or being exposed to parental physical violence significantly increases the likelihood of risky sexual activity (Elliott et al, 2002), and coercive sexual activity also places teenagers at greater risk of pregnancy (Elders and Albert, 1998).

Clear associations exist between risky sexual behaviour and diagnosis of substance abuse, with a New Zealand study finding teenagers who abuse alcohol are 23 times more likely to engage in early, risky sexual activity that may result in pregnancy (Fergusson and Lynskey, 1996).

There are significant correlations between high teenage birth rates and low socio-economic status (Wilson et al, 1996). Fifty-six percent of all teenage births in 2005 occurred in areas classified by the New Zealand Deprivation Index as 8, 9 or 10 (areas of highest deprivation), with NZDep10 areas alone accounting for 23% of all teenage births.

The evidence on whether teen parenting itself is associated with further disadvantage for mothers, over and above that associated with their pre-existing disadvantage, is more mixed.¹⁵

Whether due to pre-existing disadvantage, or a combination of pre-existing disadvantage and the effects of teen parenthood itself, those who became parents in their teenage years are likely to be particularly disadvantaged, on average.

This disadvantage helps to explain the high proportion of sole parent benefit recipients in this research who appeared to have parented early. It also suggests that some sole parent benefit recipients who parented early will have difficulties across a number of domains, which may include a long history of poor mental health, substance abuse, and experiences of violence and abuse.

Tailoring approaches and interventions

The variations in the backgrounds and in the employment outcomes we observed for the different groups suggest that different approaches and interventions are needed for working with different people.

It appears likely that many sole parents in some subgroups – principally those who were already in employment while on benefit – responded strongly to the improved incentives provided by Working for Families. Continued efforts to ensure that people are aware of and taking-up their Working for Families entitlements might largely meet the needs of many in these groups.

¹⁵ See Hoffman (2006); Chevalier and Viitanen (2001); Ermisch and Pevalin (2003); Ermisch and Pevalin (2005); Hotz et al (2005); Hotz et al (1997); Hobcraft and Kiernan (1999); Boden et al (2008).

For people in other groups the rate of exit from benefit and into employment was comparatively low, and participation in employment while in receipt of benefit was also low. Many appeared to be some way from being work-ready, with a history of long-term benefit receipt, limited work experience, low qualifications, and location in communities of disadvantage.

In the case of the largest Early Starter subgroups, most had young children. More than one in 10 overall, and almost one in five in the older subgroup with three or more children (A3), appeared to have a child with significant health difficulties. Most became parents in their teenage years, an experience that is known to occur at a much higher than average rate for disadvantaged young women. Assisting this group may require an intersectoral response.

In the case of the Older Long-term DPB group, the children are older, but as many as one in five sole parents in this group appeared to have health difficulties themselves (indicated by Disability Allowance receipt), and more than one in 10 had children with significant health problems.

While the Later Starter and Other Groups are less likely to have a background of long-term benefit receipt overall, and have some subgroups that have high rates of movement off benefit, there are small subgroups that do not have these characteristics:

- The ex-jobseeker group of Later Starters (B3) has a comparatively low rate of exit from benefit. Four in 10 are male, and 12% are known to have been imprisoned.¹⁶ Half are in their 20s, most have one child, usually a pre-schooler.
- The Invalid's Benefit recipient subgroup (D1) has a high likelihood of long-term benefit receipt (see Table 1), a very low rate of exit from benefit and a low likelihood of supplementing benefit income through employment. This group has a high likelihood of having debts to the MSD, and a high likelihood of receiving multiple Special Needs Grants for food.

This research suggests that, for many, the path to part- or full-time employment may be a long one, requiring a number of different services and interventions and a series of intermediate steps.

For some, employment will not be a realistic outcome in the short term, and the priority may be interventions that improve the quality of life on benefit for both parents and children.

¹⁶ Based on recorded reasons for entry to and exit from benefit. This measure was included in the cluster analysis used to form groupings.

Bibliography

Bancroft, W (2004) *Sustaining: Making the Transition from Welfare to Work*, Working Paper 04-03, Social Research and Demonstration Corporation.

Barnet, B, A Joffe, A K Duggan, M D Wilson and J T Repke (1996) Depressive symptoms, stress, and social support in pregnant and postpartum adolescents, *Archives of Pediatrics and Adolescent Medicine*, 150(1):64–70.

Barrett, G, F Krsinich and M Wilson (2003) Young children supported by benefits in New Zealand: A duration analysis, *New Zealand Population Review*, 29(1):131–153.

Boden, J M, D M Fergusson and L J Horwood (2008) Early motherhood and subsequent life outcomes, *Journal of Child Psychology and Psychiatry*, 49(2):151–160.

Butterworth, P (2003) Multiple and severe disadvantage among lone mothers receiving income support, *Family Matters*, 64: 22–29.

Chevalier, A and T K Viitanen (2001) *The Long-run Labour Market Consequences of Teenage Motherhood in Britain*, London: Centre for Economic Performance, London School of Economics and Political Science.

Elders, J and A E Albert (1998) Adolescent pregnancy and sexual abuse, *Journal of the American Medical Association*, 280(7):648–649.

Elliott, G C, R Avery, E Fishman and B Hoshiko (2002) The encounter with family violence and risky sexual activity among young adolescent females, *Victims and Violence*, 17(5):569–592.

Ermisch, J and D J Pevalin (2005) Early motherhood and later partnerships, *Journal of Population Economics*, 18:469–489.

Ermisch, J and D J Pevalin (2003) “Does a ‘teen-birth’ have longer-term impacts on the mother? Evidence from the 1970 British Cohort Study” *ISER Working Paper No. 2003-28*, Institute for Social and Economic Research.

Fergusson, D M, L Horwood and E Ridder (2005) Partner violence and mental health outcomes in a New Zealand birth cohort, *Journal of Marriage and the Family*, 67:1103–1119.

Fergusson, D M and M T Lynskey (1996) Alcohol misuse and adolescent sexual behaviours and risk taking, *Pediatrics*, 98(1):91–96.

Fergusson, D M and L J Woodward (2000) Teenage pregnancy and female educational underachievement: A prospective study of a New Zealand birth cohort, *Journal of Marriage and the Family*, 62(1):147–161.

Gorske, T T, C Larkby, D C Daley, E Yenerall and L A Morrow (2006) Childhood abuse and psychiatric impairment in a sample of welfare to work women, *Children and Youth Services Review*, 28:1528–1541.

Hobcraft, J (1998) *Intergenerational and life course transmission of social exclusion: Influences of childhood poverty, family disruption and contact with the police*, CASE paper 15, Centre for Analysis of Social Exclusion, London School of Economics.

Hobcraft, J and K Kiernan (1999) *Childhood poverty, early motherhood and adult social exclusion*, CASE paper 28, Centre for Analysis of Social Exclusion, London School of Economics.

Hoffman, S D (2006) *By the Numbers: The Public Costs of Teen Childbearing*, Washington DC: The National Campaign to Prevent Teen Pregnancy.

Hotz, V J, S McElroy and S Sanders (2005) Teenage childbearing and its life cycle consequences: Exploiting a natural experiment, *Journal of Human Resources*, 40(3):683–715.

Hotz, V J, C H Mullin and S G Sanders (1997) Bounding causal effects using data from a contaminated natural experiment: Analyzing the effects of teenage childbearing, *Review of Economic Studies*, 64:575–603.

Jayakody, R, S Danziger and H A Pollack (2000) Welfare reform, substance use and mental health, *Journal of Health Politics, Policy and Law*, 25(4):623–651.

Jayakody, R and D Stauffer (2000) Mental health problems among single mothers: Implications for work and welfare reform, *Journal of Social Issues*, 56(4):617–634.

McLeod, K and P Beynon (2006) A profile of health and disability related benefit recipients in New Zealand, *Social Policy Journal of New Zealand*, 29:102–126.

Mayhew, P and J Reilly (2007) *New Zealand Crime and Safety Survey 2006: Key Findings*, Wellington: Ministry of Justice.

Oakley Browne, M A, J E Wells and K M Scott (eds) (2006) *Te Rau Hinengaro The New Zealand Mental Health Survey*, Wellington: Ministry of Health.

Sarfati, D and K Scott (2001) The health of lone mothers in New Zealand, *New Zealand Medical Journal*, 114(1133):257–260.

SAS Institute Inc (1999) *SAS/STAT® User's Guide, Version 8*, Cary, North Carolina: Author.

Ward, J H (1963) Hierarchical grouping to optimize an objective function, *Journal of the American Statistical Association*, 58:236–244.

Wilson, N, M Clements, M Bathgate and S Parkinson (1996) *Using Spatial Analysis to Improve and Protect the Public Health in New Zealand*, Wellington: Ministry of Health.

Woodward, L J and D M Fergusson (1999) Early conduct problems and later risk of teenage pregnancy in girls, *Development and Psychopathology*, 11:127–141.

Appendix 1 Research approach

The research involved:

- describing the history and current characteristics of each individual
- forming groups by grouping together people with similar histories and characteristics.

These steps are described in more detail below.

Step 1 – Describing individuals’ histories and current characteristics

We selected all sole parents in receipt of a main benefit at 31 December 2005¹⁷. – around 114,000 people.

For each of these 114,000 people, we constructed a range of measures of their histories and their current characteristics, to the extent that these could be observed or inferred from the benefit administration data available to us.¹⁸

Information on their histories was assembled looking back over a given ‘history period’. For most people in the study, the history period was the 10-year period from the beginning of 1996 to the end of 2005.

For people aged under 28 at the end of 2005, the history period was shorter:

- for those aged 20–27, we looked back to the date of their 18th birthday
- for those aged under 20, we looked back to their 18th birthday, or the date they first received benefit, if they received benefit as a 16 or 17 year old.

The key measures that were constructed include the following:

- *Benefits* – percentage of time spent receiving benefits of different types and in total, indicators of benefits received, benefit type as at 31 December 2005.
- *Employment* – indicators of whether they had ever exited benefit to employment based on recorded reason codes, whether they had ever entered benefit from employment based on recorded reason codes and record of last weekly earnings prior to benefit, inferred percentage of time spent in employment; whether they were in employment while in receipt of benefit at 31 December 2005, inferred from declared earnings;¹⁹ and the percentage of time on benefit they spent in employment, inferred from declared earnings.
- *Parenting* – indicators of the age at which the person first became a parent, based on a comparison of the birthdate of the sole parent with the birthdate of

¹⁷ We excluded the small group who were only granted their current benefit on that day.

¹⁸ The research was based on the MSD’s benefit dynamics data set, a longitudinal research data set assembled from benefit administration records. Counts taken from this data set may vary slightly from official counts of benefit receipt drawn directly from SWIFTT, the MSD’s benefit processing and payments system.

¹⁹ Sole parents who receive Domestic Purposes, Widow’s or Invalid’s Benefits can make annual declarations of their earned income. In assembling the benefit dynamics data set, we assume that earnings declared as an annual amount are received evenly over the year. This is unlikely to always be the case, however. The resulting proportions with earned income at any point in time should therefore be viewed as indicative of either current participation in employment, or participation in employment over the year.

the oldest child included with them in periods when they received benefit as a sole parent over the previous 10 years,²⁰ the number and ages of children included in the person's benefit at 31 December 2005.

- *Partnerships* – indicators of whether they had ever exited benefit to partner to a person not in receipt of benefit based on recorded reason codes, whether they had ever entered benefit having separated from a partner not in receipt of benefit, whether they had ever entered benefit as a result of their partner's death, inferred percentage of time spent partnered while off benefit, percentage of time spent partnered while on benefits of different types.
- *Education and training* – indicators of highest qualifications recorded in the jobseeker register SOLO,²¹ whether they had ever exited benefit to education or training based on recorded reason codes, whether they had ever entered benefit from education or training based on recorded reason codes, inferred percentage of time spent in education or training based on the time spent off benefit and recorded reason codes, whether they received Training Incentive Allowance for education or training in the year to 31 December 2005.
- *Time spent overseas* – indicators of whether they had ever exited benefit to go overseas based on recorded reason codes, whether they had ever entered benefit having returned from overseas based on recorded reason codes, inferred percentage of time in their history period spent overseas based on the time spent off benefit and recorded reason codes.
- *Health* – indicators of whether they had, in the last six years, ever been granted Sickness or Invalid's Benefits for a mental health related incapacity, a physical health related incapacity, or drug or alcohol addiction.²²
- *Imprisonment* – indicators of whether they had ever exited benefit to go into prison or entered benefit having left prison based on recorded reason codes.²³

The MSD's administrative databases store reliable information about the periods of time in which a person received main benefits in their history period. They have more limited and approximate information on peoples' status before and after each benefit spell. This means that assumptions needed to be made in order to infer the amount of time spent in different off-benefit states.

For a period off benefit that occurred between two benefit spells:

- if the reason for leaving the first spell and the reason for starting the second spell agreed (eg the person left the first benefit spell for employment and started the second benefit spell from employment), we assumed that the entire off-benefit period was spent in the state indicated (in this case employment)

²⁰ For some older sole parent benefit recipients this may overstate the age at which they first became a parent because their oldest child may have turned 18 or left their care before the beginning of the 10-year window. It may understate the age at which people first became a parent in other cases as it assumes that the people cared for their oldest observed dependent child in a parent-child relationship from the date of that child's birth. This may not have occurred in all cases.

²¹ This measure is likely to understate the educational attainment of the group. It is based on the most recent record of their educational attainment recorded in the jobseeker register SOLO. For those who registered as a jobseeker some years ago but have gained qualifications since, this record of current educational attainment will be understated. In comparison, 2001 Census data shows that 37% of people who received Domestic Purposes Benefit at some time in the year prior to the Census had no qualifications and 34% had school qualifications only. (Source: MSD's analysis of customised tables supplied by Statistics New Zealand.)

²² Note that more people may have experienced health difficulties than these indicators suggest.

²³ Note that more people may have experienced imprisonment than these indicators suggest.

- if the reason for leaving the first spell and the reason for starting the second spell did not agree (eg the person left the first benefit spell for employment and started the second benefit spell having separated from a partner), we assumed that half the off-benefit period was spent in each of the states indicated (in this case employment and partnership).²⁴

For a period off benefit that occurred before the first benefit spell in the history period, we assumed that half the time was spent in the state implied by the recorded reason for starting the first benefit spell and half was counted as time in which their status was “other/unknown”.

Using this approach, on average most of the time spent off benefit in the history period falls into a category of “other/unknown” states (ie not able to be assumed to be time spent employed, partnered, in education or training, or overseas). It is possible that in most cases this time was spent employed and/or partnered, but in this analysis we make no assumption about which might dominate.

Step 2 – Forming groups

In Step 1, we effectively created a mathematical picture of an individual’s history on and off benefit and current characteristics.

To form groups, we ran these individual pictures through a mathematical clustering algorithm.²⁵ This grouped people together such that they were most similar in their histories and current characteristics to other individuals in the same group, while being as different as possible to individuals in other groups.

The research involved iteratively examining the results of the analysis, making decisions about the inclusion, exclusion, or weighting of the indicators in the analysis, and making decisions about the appropriate number of groups to create.

Apart from statistical measures relating to distance within and between groups, the most important test of the analysis was a ‘face validity’ check, ie that the groups were sensibly constructed, informative, and linked to the purposes of the research. As any clustering analysis is inherently a subjective exercise, this was essential for the research to produce useful and informative results.

Table A1 lists the variables that were included in the final clustering algorithm, and indicates the three variables were re-weighted to make their weight in the analysis more similar to that of the percentage of time variables (which had a range of 0–100).

The re-weighted variables and the percentage of time variables carried the most weight in the analysis, but the 0 or 1 variables also informed the groupings reported on in this paper.

²⁴ This highlights one of the limitations of the data, and the resulting analysis of the way in which people spent their time. Only a single reason code can be entered at the grant of benefit or at the end of a benefit spell. Where, for example, a person was granted benefit having separated and left their job simultaneously, only one of these events could be recorded as the reason for grant, and depending on which was recorded, we would assume that they had spent their time prior to the benefit spell in one state or the other, but not both.

²⁵ We used the CLUSTER procedure in SAS using the Ward’s minimum variance method (SAS Institute Inc, 1999; Ward, 1963). This is a hierarchical agglomerative method, which attempts to minimise the variance within clusters, and has a tendency to create reasonably even-sized clusters (McLeod and Beynon, 2006). For our purposes, this helps to ensure that groups identified and presented are large enough to be of significant policy interest.

By looking at the characteristics of the individuals within each group, we were able to assign labels to the groups in a way that summarised the defining characteristics of each.

Table A1: Variables included in the clustering algorithm

Variable description	Type
Demographics	
Age of client at 31 December 2005 ** (re-weighted by multiplying by 3) **	Years
Client is male?	0 or 1
Benefits	
Entered current spell transferring from Sickness Benefit as primary?	0 or 1
Entered current spell transferring from Unemployment, Training or a related Benefit?	0 or 1
% history period on DPB–Sole Parent or Emergency Maintenance Allowance	%
% history period on Widow’s Benefit	%
% history period on Sickness Benefit as primary	%
% history period on Invalid’s Benefit as primary	%
% history period on Unemployment, Training or a related Benefit as primary	%
Current benefit DPB–Sole Parent or Emergency Maintenance Allowance?	0 or 1
Current benefit Widow’s Benefit?	0 or 1
Current benefit Unemployment, Training or a related Benefit?	0 or 1
Current benefit Sickness Benefit?	0 or 1
Current benefit Invalid’s Benefit?	0 or 1
Employment	
Entered current spell from employment?	0 or 1
Currently declaring earned income in addition to benefit?	0 or 1
Of time on benefit in history period, % time with declared earnings	%
% time in employment while off benefit in history period (inferred)	%
% time off benefit in history period where status “other/not known” (possibly employed or partnered)	%
Parenting	
At least one child cared for as sole parent in last 10 years born when person a teenager?	0 or 1
At least two children cared for as a sole parent in last 10 years born when person a teenager?	0 or 1
Current number of children cared for at 31 December 2005 ** (re-weighted by multiplying by 20) **	number
Age of youngest child cared for at 31 December 2005 ** (re-weighted by multiplying by 5) **	years
Partnerships	
Entered current spell transferring from benefit as partner	0 or 1
Entered current spell from off benefit because “separated from partner”?	0 or 1
Ever event code at entry of “partnered died” in history period?	0 or 1
% history period on benefit as partner of Sickness Benefit or Invalid’s Benefit primary recipient	%
% history period on benefit as partner of Unemployment, Training or a related Benefit primary recipient	%
% history period on Sickness Benefit or Invalid’s Benefit with a partner included	%
% history period on Unemployment, Training or a related Benefit with a partner included	%
% time partnered while on benefit in history period	%
% time partnered while off benefit in history period (inferred)	%
Education and training	
Entered current spell because “school/tertiary/college/exams finished”?	0 or 1
Any post-school qualifications recoded in SOLO? (set to 0 if missing)	0 or 1
SOLO record indicates “no formal school qualifications”? (set to 0 if missing)	0 or 1
% time in study/training while off benefit in history period (inferred)	%
Health and imprisonment	
Ever granted Sickness Benefit or Invalid’s Benefit with mental health related incapacity in last 6 years?	0 or 1
Ever granted Sickness Benefit or Invalid’s Benefit with physical health related incapacity in last 6 years?	0 or 1
Ever granted Sickness Benefit or Invalid’s Benefit related to pregnancy in last 6 years?	0 or 1
Ever granted Sickness Benefit or Invalid’s Benefit with drug and alcohol related incapacity in last 6 years?	0 or 1
Ever event code at entry “left prison” or reason code at exit indicating imprisoned	0 or 1

Appendix 2 Profile of high level groups and subgroups, at 31 December 2005

	A Early Starter				B Later Starter				C Older Long-term DPB			D Other Groups					ALL GROUPS
	A1 Younger, 1–2 children	A2 Older, 1–2 children	A3 Older, 3+ children		B1 Younger, 1 child	B2 Older, 1–3 children	B3 Ex-jobseeker		C1 Non-earner	C2 Earner		D1 Invalid's Benefit recipient	D2 Ex-jobseeker	D3 Ex-off benefit partner	D4 Ex-on benefit partner		
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Ethnicity																	
New Zealand European	31	32	39	25	40	45	41	23	48	44	61	42	49	30	60	41	39
Māori	53	53	50	55	35	35	21	60	35	38	24	32	37	40	14	32	41
Pacific	10	10	7	14	12	10	16	10	7	8	4	8	5	12	4	9	10
Other	4	4	4	5	11	8	17	6	10	10	11	14	7	16	15	17	9
Unknown	1	1	0	0	2	2	4	0	0	0	0	3	1	2	8	0	1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Debt to MSD																	
\$1–\$499	27	27	26	27	24	24	23	24	25	25	25	23	28	21	23	25	25
\$500–\$1,000	17	18	16	18	14	15	12	16	12	13	11	12	15	12	10	14	14
\$1,000–\$5,000	18	17	17	21	14	13	11	22	14	14	15	14	18	14	9	17	16
\$5,000+	5	3	6	8	3	2	3	6	5	6	5	5	4	6	2	7	5
Total % with debt to MSD	67	64	64	73	55	54	49	67	57	58	55	54	65	53	43	62	60
No. of food Special Needs Grants in last year																	
1–2	35	34	34	35	32	32	31	35	30	32	26	29	33	28	25	35	32
3–4	17	15	16	21	11	11	10	14	11	13	7	10	16	10	6	13	13
5+	6	5	4	9	3	2	2	5	3	4	1	3	6	2	1	4	4
Total % with food Special Needs Grants	58	54	54	65	46	45	43	53	45	48	35	42	55	41	33	52	49

Continued over

	A Early Starter				B Later Starter				C Older Long-term DPB			D Other Groups					ALL GROUPS
	A1 Younger, 1–2 children	A2 Older, 1–2 children	A3 Older, 3+ children		B1 Younger, 1 child	B2 Older, 1–3 children	B3 Ex-jobseeker		C1 Non-earner	C2 Earner		D1 Invalid's Benefit recipient	D2 Ex-jobseeker	D3 Ex-off benefit partner	D4 Ex-on benefit partner		
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Special Benefit																	
Receiving Special Benefit	23	26	22	20	26	26	30	20	21	25	11	19	29	20	13	20	23
Not receiving Special Benefit	77	74	78	80	74	74	70	80	79	75	89	81	71	80	87	80	77
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Section 70A																	
Met all obligations for all children	77	76	81	76	86	84	89	87	92	91	93	95	94	95	93	96	86
Section 70A deduction in respect of at least one child	20	21	17	21	11	13	9	11	7	7	6	4	5	4	6	4	12
Did not meet obligations for all children but exempt from any deductions	3	3	2	3	3	3	2	2	1	1	1	1	2	1	1	1	2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Disability Allowances																	
% with Child Disability Allowance for child	12	8	12	18	7	6	9	5	11	11	9	10	16	7	9	14	10
% with Disability Allowance for self	9	6	11	10	7	6	10	5	18	19	15	25	72	19	11	18	13
% with Disability Allowance for child	7	4	8	10	3	3	5	2	8	8	7	6	15	4	5	8	6

Continued over

	A Early Starter				B Later Starter				C Older Long-term DPB			D Other Groups					ALL GROUPS
	A1 Younger, 1–2 children	A2 Older, 1–2 children	A3 Older, 3+ children		B1 Younger, 1 child	B2 Older, 1–3 children	B3 Ex-jobseeker		C1 Non-earner	C2 Earner		D1 Invalid's Benefit recipient	D2 Ex-jobseeker	D3 Ex-off benefit partner	D4 Ex-on benefit partner		
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Region																	
Northland	5	5	5	6	5	4	4	7	5	6	4	6	6	7	4	9	5
Auckland	33	32	29	36	35	31	44	30	30	32	23	30	24	35	25	27	32
Waikato	9	9	8	9	8	8	7	9	8	7	8	8	9	7	9	8	8
Taranaki	5	5	6	5	5	5	4	7	6	5	7	6	7	5	6	5	5
Bay of Plenty	11	11	12	11	10	10	8	13	10	11	10	10	9	12	8	12	11
East Coast	8	8	9	8	6	7	5	9	7	7	8	7	6	8	6	6	7
Central	6	6	6	6	6	6	5	5	6	6	7	6	7	5	7	6	6
Wellington	7	8	8	7	8	7	8	9	7	8	6	6	6	7	6	6	7
Nelson	3	3	3	2	3	4	3	2	4	4	5	4	6	3	5	5	3
Canterbury	8	8	8	6	8	10	8	5	10	9	12	10	13	7	13	9	9
Southern	5	5	6	3	5	7	4	4	6	5	9	6	8	4	9	7	5
Other	0	0	0	0	1	1	1	1	0	0	0	1	1	2	1	0	1
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% in NZDep 9–10* Area	48	47	44	54	40	37	35	54	38	41	31	39	40	46	22	44	42
Educational qualifications																	
None	55	51	55	60	39	33	35	61	50	53	40	46	46	54	26	53	48
School	42	45	42	37	50	56	51	34	43	40	51	38	26	31	57	40	44
Post-school	3	3	3	2	9	9	10	4	7	6	9	8	3	8	14	5	6
Unknown	0	1	0	0	2	2	4	1	1	1	0	8	25	7	3	3	2
All	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
% with Training Incentive Allowance in last year**	17	19	18	15	14	15	15	8	15	16	14	12	7	11	15	11	14

Notes: * Of those for whom NZDep could be obtained (92%)
** Of those receiving Training Incentive Allowance eligible benefits

Continued over

	A Early Starter				B Later Starter				C Older Long-term DPB			D Other Groups					ALL GROUPS
	A1 Younger, 1-2 children	A2 Older, 1-2 children	A3 Older, 3+ children		B1 Younger, 1 child	B2 Older, 1-3 children	B3 Ex-jobseeker		C1 Non-earner	C2 Earner		D1 Invalid's Benefit recipient	D2 Ex-jobseeker	D3 Ex-off benefit partner	D4 Ex-on benefit partner		
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Employment history																	
% known to have been employed while off benefit in history period	32	39	30	26	61	69	49	66	35	35	34	42	21	52	45	24	42
% employed off benefit for more than 50% of history period	1	1	0	1	30	39	30	9	5	4	5	19	3	22	33	1	12
% employed while in receipt of benefit at 31 December 05	15	10	28	11	14	20	10	6	32	19	67	27	9	12	69	25	20
Of time on benefit, average % of time spent employed	10	5	21	7	10	16	6	6	26	12	63	24	6	8	69	16	16
Proportion exiting benefit in six month follow-up																	
% exited benefit for any reason	11	11	13	10	17	19	18	11	14	12	19	16	4	16	27	14	14
% exited benefit to partner	3	3	2	3	4	5	4	2	1	1	1	2	1	1	4	3	3
% exited benefit to employment	5	4	8	5	8	9	9	4	9	7	14	9	1	7	17	6	7