

Watch them Grow

Unmarried-cohabitant and Solo
parenthood in Ireland

An analysis of the **Growing Up in Ireland** infant cohort data
Waves 1 and 2

Dr. Owen Corrigan for Treoir

2014

Watch them Grow:

Unmarried-cohabitant and Solo parenthood in Ireland

An Analysis of the Growing Up in Ireland infant cohort data Waves 1 and 2

by

Dr Owen Corrigan

Published by Treoir (2014)



The National Federation of Services for
Unmarried Parents and their Children

© Treoir 2014

Published by Treoir. All rights reserved.

ISBN 978-0-9513120-1-8

Disclaimer: Any errors or omissions are the responsibility of the author. The views expressed in this report are those of the author and do not necessarily reflect the views of Treoir or the HSE Crisis Pregnancy Programme.

About the Author

Dr Owen Corrigan is a research consultant specialising in analysis of large survey datasets with expertise in social policy and immigration. He undertook his PhD research in Trinity College Dublin at the School of Social Work and Social Policy, completing his thesis on migrant poverty across western Europe in 2012. Results from that research are published this year in the *Journal of European Social Policy* and in *Policy & Politics*. Prior to that he was engaged in postgraduate research in comparative social policy at Oxford University, results from which were published in the *Journal of Social Policy*. He has worked previously with Treoir on a preliminary analysis of the first wave of the Growing Up in Ireland data. He has also worked with a policy thinktank based in Westminster in London and has been engaged as a Research Associate at Trinity College Dublin.

He invites contact from parties with any questions or requests for further information or technical details concerning this report.

Email: **corrigoj@tcd.ie**

Acknowledgments: The author would like to thank the HSE Crisis Pregnancy Programme for the funding which made the research possible, and Margaret Dromey and Margot Doherty at Treoir for their valued support, feedback and input at all stages of this project. He would also like to thank Peter Fingleton for his cover design work.



Founded in 1976, Treoir is a membership organisation that promotes the rights and best interests of unmarried parents and their children.

Treoir

- Operates the free, confidential **National Specialist Information and Referral Service** on all aspects of unmarried parenthood for
 - ✓ unmarried expectant parents
 - ✓ unmarried parents living apart
 - ✓ unmarried parents living together
 - ✓ teen parents
 - ✓ opposite and same sex parents
 - ✓ grandparents and other relatives
 - ✓ those working with unmarried parents and their families.
- Advocates on behalf of unmarried parents and their children.
- Co-ordinates the 11 local **Teen Parent Support Programmes** at national level.

Treoir Principles

1. Treoir recognises the diversity of family life in Ireland
2. Treoir recognises that all families, including unmarried families have the same rights to respect, care, support, protection and recognition
3. Treoir supports and promotes the rights of all children as outlined in the United Nations Convention on the Rights of the Child
4. Treoir believes that all children have a right to know, be loved and cared for by both parents



The HSE Crisis Pregnancy Programme is a national programme tasked with developing and implementing a national strategy to address the issue of crisis pregnancy in Ireland. The Programme is situated in the Health and Wellbeing Directorate of the HSE.

The Programme works towards the achievement of three mandates:

1. A reduction in the number of crisis pregnancies by the provision of education, advice and contraceptive services.
2. A reduction in the number of women with crisis pregnancies who opt for abortion by offering services and supports which make other options more attractive.
3. The provision of counselling services, medical services and such other health services for the purpose of providing support after crisis pregnancy, as may be deemed appropriate by the Crisis Pregnancy Programme.

The purpose of the Programme is to bring strategic focus to the issue of crisis pregnancy and to add further value to the work of existing service providers. A key function is strategic investment in research as a means of understanding the context in which crisis pregnancy is happening. Research and evidence are used to build cases policy change and to stimulate public debate and to implement evidence-informed approaches to communications and information campaigns and service improvements.

Foreword

Treoir is pleased to publish this report, **Watch them Grow: Unmarried Cohabitant and Solo Parenthood in Ireland** as a contribution to a greater understanding of the lives of parents and children in unmarried families in Ireland today. The research was possible thanks to the **Growing Up in Ireland** study, a major longitudinal study of children undertaken by the Economic and Social Research Institute and Trinity College Dublin with government funding. The study, which commenced in 2006, collected information on 11,134 children and their parents when the children were nine months and three years of age.

Treoir, which campaigned for many years for such a longitudinal study, commissioned Dr. Owen Corrigan to analyse the data collected by **Growing up in Ireland** from the perspective of marital status, and in particular to explore the experience of parenting and childhood in unmarried families.

Treoir has long been interested in understanding the reasons why children of unmarried parents are over represented in state care; how the children raised in one parent families fare in terms of general health and emotional wellbeing compared to children in other family types; what are the social and financial circumstances of unmarried mothers raising children alone and whether there is movement in and out of different family types. Dr. Corrigan's analysis of the information collected by **Growing Up in Ireland** answers these questions.

Dr. Corrigan has developed a typology of solo parents that is helpful in understanding the experience of single parenting. He identifies five characteristic subgroups - the Strivers, the Thrivers, the High Fliers, the Strugglers and Poor Single Mothers. The Thrivers and Strivers (37%) are in employment but with low to middling earnings; the High Flyers (5%) are very well educated and have high levels of income; the Strugglers and Poor Single Mothers (58%) are not generally active in the labour market, have a high reliance on welfare benefits, tend to have larger families and have a greater reliance on social housing. They are relatively young with poor education levels and earnings. This typology will be helpful in the more precise targeting of interventions aimed at Solo parents and the formulation of policy relevant to Solo parents.

The value of longitudinal data can be seen even as a result of outcomes from just two waves of data, when the children were nine months old and three years.

For example, we can see that the negative impact of crisis pregnancy on women was still evident when their children were three years, as was the negative impact on the children. The primary caregivers (mothers) experienced higher stress scores, higher depression scores and higher levels of conflict with their children than other mothers; their children had a higher likelihood of the child's current health being poor; higher frequency of visits by the child to the GP or A & E Department; the children also had higher scores on the Strengths and Difficulties Questionnaire.

On a more positive note, the experience of a crisis pregnancy was associated with a higher likelihood of improving one's level of education. It may be that the unexpected pregnancy was highly stressful for the women involved precisely because it interrupted their studies, to which they later returned.

The findings of this study regarding the health of the children of Solo parents are disturbing. Solo parents appear more likely than other parents to report that their child is unwell; Solo parents are more likely than Married parents to report a decline in their child's health over time; injury requiring hospitalisation occurred significantly more frequently for children of Solo parents. These findings can be partly accounted for by the higher scores of the parents on indices of stress and depression.

Another finding, that 26% of families overall were 'at risk of income poverty' which rose to 54% for Solo parent families, is a cause of major concern. The current policy of the Department of Social Protection is to move One Parent Family Payment (OFP) recipients into employment but Treoir questions if some recent decisions are contrary to this policy; for example over the last number of years the earnings disregard for OFP recipients was reduced from €146 to €90 per week and will be reduced to €60 by 2016. Training allowances for those on Solas Programmes have been discontinued and it is no longer possible to claim OFP while on a Community Employment scheme. All of these changes have reduced the number of OFP recipients in employment – down from 48% to 36% of recipients. Given the lower level of education of Solo parents generally, and of those in receipt of welfare benefits in particular, provision of support for parents to avail of education and training is essential.

A core principle of Treoir is that children have a right to know and be cared for by both their parents. Two out of three children in the study were in contact with their non-resident father at age three. However, only 35% of non-resident fathers made regular financial contributions towards the care of their children. It is important to ascertain why so many non-resident fathers do not support their children financially.

Public opinion has been shocked by the revelations of the conditions endured by single mothers and their children in the past in Ireland. This study demonstrates that many unmarried parents and their children still live in unacceptable conditions. We have as a society a responsibility and a challenge to ensure that every child in today's Ireland is given the opportunity to thrive and achieve his or her full potential.

I would like to congratulate Dr. Owen Corrigan on an excellent report and thank the HSE Crisis Pregnancy Programme for funding the study. I would like to acknowledge the contribution of Treoir staff to the study, particularly Margaret Dromey and Margot Doherty, who supported Dr. Corrigan through the study and Bella Maher who proof read the report.

Ruth Barrington PhD

Chair of Treoir

July 2014

Table of Contents

About the Author	3
Foreword	6
Table of Contents	9
Glossary	14
Summary of Findings	15
1. Marital Status, Family transitions and Solo parents	17
2. Childcare	24
3. Parents' health and parenting	27
4. Child health and wellbeing	31
5. Work and Welfare	37
Introduction	45
1. Aims and Purpose of the Study	45
Background to the Growing Up in Ireland Study	46
2. Methodology	47
Growing up in Ireland Study & Methodology	47
Analytic Approach	48
Weighting	49
Variables: Controls	49
Variables: Outcomes	52
Descriptive Statistics	54
I. Marital Status, Family transitions and Solo parents	58
I.1. Literature on Marital status and family transitions	58
Policy context in Ireland	61
I.2. Results	64
Part I	64
Marital Status at wave 2	64
Accounting for transitions between marital status: Unmarried-cohabitant to Married	68
Accounting for transitions between marital status types: Unmarried-cohabitant to Solo	69

Accounting for transitions between marital status types: Solo to UC or Marriage	70
I.3. Impacts of Family Type Transitions: Parental Stress and Depression scores	70
Transition from Unmarried-cohabitant → Solo parenthood	70
Transition from Unmarried-cohabitant → Married parenthood	72
Transition from Solo → Married/Unmarried-cohabitant parenthood	73
I.4. Impacts of Family Type Transitions: Children	74
I.5. Exploring the group structure of Solo parents in Ireland	76
Cluster analysis	76
Subgroups of Solo parents	81
1. Strivers	82
2. Thrivers	82
3. High Fliers	83
4. Strugglers	84
5. Poor Single Mothers	85
Summary	86
I.6. Summary & Implications: Marital Status, Family transitions and Solo parents	87
Part II	91
I.7. Solo Parents & Non-resident Fathers	91
Contact with Fathers	91
SDQ scores and involvement of non-resident father in child's life	94
Child's physical abilities at 3 years	96
Parental stress and depression at wave 2	96
Transition into work, unemployment or improved education: Non-resident father effects	97
Taking or not taking Maternity leave: Non-resident father effects	99
I.8. Summary & Implications: Solo parents & Non-resident Fathers	100
2. Childcare	103
2.1. Literature on the import of childcare arrangements	103
Impact on mothers' work and education	103
Impact on children	104
Policy context in Ireland	105
2.2. Results	108
Difficulties arising due to childcare arrangements, wave 1	108

Models of characteristics of people having difficulty arranging childcare.....	109
Childcare usage at wave 2.....	111
Change in childcare usage from wave 1 to 2 among those using non-parental care.....	114
Centre-based childcare: Costs and usage.....	115
Childcare costs: wave 1	116
Non-centre based care at wave 2	117
Relatives in relative's home.....	117
Non-relative in non-relative's home.....	118
Quality of centre-based childcare and correlation with weekly cost of centre-based care	118
Correlation of cost and select quality indicators.....	119
2.3. Impacts of childcare arrangements.....	121
Positive educational change over time & childcare	121
Transition into Unemployment over time & association with childcare	122
Free preschool year	123
Registration for Primary School at wave 2.....	124
2.4. Summary & Implications: Childcare.....	125
3. Parents' Health and Parenting.....	129
3.1. Literature on Stress, Depression, Parenting styles.....	129
3.2. Results	131
Change in Depression score over time	131
Change in Stress score over time	133
Stress and Depression scores of PCG at wave 2	134
Pianta scales of parent-child relationship.....	135
Accounting for differences in extent of parent-child conflict (Pianta subscale)	137
Parenting style	138
Accounting for differences in consistency of parenting style.....	139
Accounting for differences in hostility of parenting style	139
Dealing with misbehaviour	140
3.3. Parent-child activities and learning	142
Reading.....	143
Alphabet.....	143
Counting.....	143

Physical Games	144
Books that child has access to at home.....	144
Time spent watching TV.....	145
TV or computer (incl. games console) in the child's bedroom	146
3.4. Summary and Implications: Parent's Health and Parenting	147
4. Child Health and Wellbeing.....	152
4.1. Literature on Child Health, Wellbeing and Development	152
Policy context in Ireland.....	154
4.2. Results.....	156
4.3. Child's Health.....	156
Current Health.....	156
Changes in child's health over time	157
Longstanding illness or disability for study child.....	159
MMR vaccination	159
Injury requiring hospitalisation.....	159
Reasons child did not receive needed medical care in last year.....	161
Use of medical services and variation by medical card.....	161
Change in frequency of use of medical services over time	164
4.4. Child Wellbeing & Development.....	166
Child's physical abilities at 3 years	166
Child emotional development: Strengths and Difficulties Questionnaire (SDQ).....	167
Predicting children's SDQ Total Difficulty scores	170
4.5. Dietary Habits	172
Obesity	172
Healthy and unhealthy foods.....	174
Eating habits: eating between meals or eating when bored.....	177
4.6. Summary and Implications: Child Health and Wellbeing.....	179
5. Work and Welfare.....	184
5.1. Women at work.....	184
Policy context in Ireland.....	185
5.2. Results.....	189
Education.....	189
Positive educational change over time, W1 → W2.....	190

Current Economic Status and change over time	192
Transition into unemployment.....	194
Transition into work.....	195
Transition into work from home duties.....	195
Impacts: Work transitions and SDQ scores.....	196
Household income by marital status	196
5.3. Maternity Leave.....	198
Maternity leave and impacts on parents and children	198
Maternity leave association with SDQ scores.....	199
Maternity leave association with Child's physical abilities at 3 years.....	201
Maternity leave association with parental Stress and Depression.....	201
Maternity leave association with Parent-child relationship & with Parenting style	202
Length of leave	202
5.4. Welfare	203
Greater difficulty making ends meet (change over time)	203
Poverty.....	204
Change over time in welfare usage	204
Transition into welfare receipt.....	205
5.5. OPFP: One Parent Family Payment.....	206
Receipt of OPFP	206
Labour market readiness of those on OPFP.....	207
Model of being a non-working (non-active) OPFP recipient	210
Transition into work & OPFP reciprocity	210
5.6. Summary and Policy Implications: Work and Welfare	211
References	219
Technical Appendix.....	227
A1. Marital Status, Family transitions and Solo parents	227
A2. Childcare.....	231
A3. Parents' health and parenting style	236
A4. Child health and wellbeing.....	245
A5. Work and Welfare	259

Glossary

<i>Term</i>	<i>Explanation</i>
Binary variable	A variable taking two values, e.g. 0, 1 or Yes/No etc.
Dependent variable	The outcome to be explained
DK	Respondent answered 'Don't Know' to the GUI survey item
GUI	The <i>Growing Up in Ireland</i> study
Interaction effect	Where the effect of one variable on the outcome depends on the value of a third, intervening, variable
NRF	Non-resident Father
$p < .05$	Finding is statistically significant at the 5% level
$p < .10$	Finding is statistically significant at the 10% level
PCG	primary caregiver (in almost all cases the mother)
Reference category	A category of a variable to which all other categories for that variable are compared
S_UM	Variable indicating transition from Solo to Unmarried-cohabitant parenthood
SDQ	Scores on Goodman's (1997) index of social and behavioural difficulties
Solo	A non-cohabiting parent, one of never-married/divorced/widowed/separated
Standard Deviation (SD)	A measure of the variation in a set of data where a low SD indicates that the data points are close to the mean and a higher SD indicates that the data are more widely dispersed. Assuming a normal distribution, about 95% of all observations in a set of data will fall within 2 standard deviations of the mean
Standard Error (SE)	The standard deviation of the sampling distribution of a statistic. For survey sample data the SE of the mean is the SD divided by the square root of the sample size
UC	Unmarried-cohabitant parent
UC_M	Variable indicating transition from Unmarried-cohabitant to Married parenthood
UC_S	Variable indicating transition from Unmarried-cohabitant to Solo parenthood

Summary of Findings

This report looks at the current state of Unmarried-cohabitant and Solo parenthood in Ireland using the first two waves of the Growing Up in Ireland data for the infant cohort, collected from infants' families at 9 months and again at 3 years of age. The availability of this high quality longitudinal data allows for examination of parent and child outcomes at both waves and for exploration of change over time in key areas. The focus here is on Primary Caregivers (PCGs) which, in nearly all cases, is the mother.

The results show continued disadvantage for non-Married family types across a range of indicators.

Solo parents face distinct challenges. While 1 in 4 families overall were classified as being at risk of poverty this rose to over 1 in 2 among Solo parent families. Recent changes to the One-Parent Family Tax Credit and the reduction in the age threshold and the income disregard for One Parent Family Payment recipients are unlikely to improve this situation. More than half of Solo mothers receive no financial contribution from the non-resident father of their 3 year old child.

Solo parents are employed by wave 2 of the GUI study at significantly lower rates than either Married or Unmarried-cohabitant parents. At the same time, the data show that labour market entry for Solo parents, as well as their potential to undertake study or training, has been restricted by difficulties arranging childcare. Difficulties arising due to childcare arrangements affect Solo parents disproportionately. These difficulties occur despite the existence of subsidised childcare schemes aimed at disadvantaged families, raising questions about the adequacy and coverage of childcare arrangements. Inadequate childcare is an issue affecting all parents, however, regardless of family type: results show that prevention of study or training due to childcare difficulties at wave 1 was associated with an increased likelihood of transition into unemployment by wave 2 for both Unmarried-cohabitant parents and Married parents. Affordable and available childcare is an essential precondition for successful labour market integration and for human capital acquisition through education.

For Solo parents, questions also arise about the likely impact of changes effected to welfare benefits, such as the One Parent Family Payment (OPFP). The recent discontinuation of the training allowance that was previously permitted to OPFP claimants may impact on the ability of Solo parents to make adequate childcare arrangements, with implications for labour market engagement. This has clear consequences for later labour market engagement. Preparation for work is especially relevant given that planned reductions in the age threshold for OPFP will move tens of thousands of claimants to work-contingent benefits like Job Seekers' Allowance when their children turn 14 years of age. Education levels of OPFP claimants are seen here to be relatively poor. At the same time almost one in three claimants has never worked before. However, results here show that parents who were in receipt of OPFP were more likely to have improved their level of education over time.

There is much variation within the Solo parent category, however, and analysis here identifies a number of potential subgroups of Solo parents distinguished by their earnings, education levels, labour market attachments, living arrangements and other characteristics. The subgroups also demonstrate statistically significant differences in terms of outcomes relevant to the wellbeing of mothers and children: for instance, certain subgroups show a significantly higher frequency of children being overweight than is the case in other groups; mothers in certain subgroups show significantly higher scores than mothers in other groups on health-related indicators such as an index of depression available in the GUI data. Identification of similarities within groups and distinctions between groups adds nuance to our understanding of the challenges facing Solo parents in Ireland and should inform policymakers' and service providers' thinking around the distinctive needs of these populations.

Unmarried-cohabitant (UC) parents are also seen to experience disadvantage in a number of areas relative to parents in Married families. Unmarried-cohabitants were more likely than Married parents to report constraints on their hours available for work or study due to childcare difficulties. They were also more likely than Married parents to have transitioned out of work and into unemployment between waves of the study and they were less likely to have improved their level of education over time. For Unmarried-cohabitants, average household income levels were significantly lower than for Married parents, and UC families were more likely to have transitioned into receipt of welfare benefits between waves of the study.

Beyond the nexus of work-welfare-childcare, the results here address other domains including the health and wellbeing of mothers and their children. Transition into different family types over time, such as from Unmarried-cohabitancy into Married status, is seen to be associated with higher levels of maternal stress. Stress and other indicators of maternal health at the time the infant was 3 years old were also seen to be patterned by marital status. Stress itself is related in a complex manner with other parental health issues, with parenting styles, and with child outcomes. The results presented here explore the impact of these and other factors on infant outcomes in terms of physical development, socio-behavioural development, health, and dietary habits, with findings indicating disadvantages for children in non-Married family types in each of these areas.

Many of the findings presented here have implications for the targeting of advice, support and information at those parents – and children – most likely to benefit. The findings will be of interest and relevance to service providers such as the new Child and Family Agency, Tusla, established in 2014 and charged with improving wellbeing and outcomes for children, as well as to healthcare and other professionals with responsibilities for mothers and their infant children. Specific findings, such as the role of crisis pregnancy in a range of adverse outcomes for families, will also be of interest to academics, health professionals, and policymakers.

The report addresses, in order, the areas of: Marital status, Family type transitions and Solo parenthood; Childcare; Parents' health and parenting; Child health and wellbeing; and Work and Welfare. Policy implications are presented at the end of each chapter and are also collected here alongside a summary of findings arising from the analysis.

I. Marital Status, Family transitions and Solo parents

Part I

Transitions

General

- The marital status type showing most movement between waves was Unmarried-cohabitant

- 23% of respondents transitioned out of UC status and into Married status over time
- 11% of UC primary caregivers (PCGs) transitioned into Solo parenthood between waves
- For Solo parents at wave 1, 13% transitioned into Unmarried-cohabitant status by wave 2, while 5% transitioned into Married status

Transition into Married family type from Unmarried-cohabitant status

- Economic factors were most associated with transition into marriage
- Being in a lower income quintile or finding it difficult to make ends meet made transition into marriage less likely

Transition into Solo parenthood from Unmarried-cohabitant status

- Being relatively young or in an unhappy relationship at wave 1 or living in an urban area were associated with transition into Solo parenthood by wave 2
- Where families got bigger over time the likelihood of transition into Solo parenthood was lower

Transition into cohabiting (married/unmarried) arrangement from Solo parenthood

- Where the number of children in household increased between waves Solo parents were more likely to have also transitioned to a cohabiting arrangement by wave 2
- There was a weak association of experience of crisis pregnancy with a lower likelihood of transition into a cohabiting arrangement by wave 2

Impacts of family transitions on parents and children

Parents

- Transition into Solo parenthood from UC parenthood is weakly associated ($p < .10$) with a change in depression scores (higher scores) over time
- Transition into Married parenthood from UC parenthood is associated with a change in depression scores (higher scores) over time
- Transition into cohabitancy from Solo parenthood is not associated with either increased or decreased levels of stress or depression

Children

- There were no significant associations between indicators or family type transition and measures of: child socio-behavioural, quality of parent-child relationship (positive, conflictual), or parenting style (warm, consistent, hostile)

Exploring the structure of the Solo parent grouping

- Cluster analysis performed on the basis of a basic set of variables capturing differences in income, education, employment status, cohabitation history, family size and age of parent allows us to identify distinct subgroups of Solo parents
- We identify 5 characteristic subgroups which we label, for the purposes of this analysis as follows: 1. Strivers, 2. Thrivers, 3. High fliers, 4. Strugglers, 5. Poor Single Mothers
- The Strivers and Thrivers are generally labour market active with low to middling earnings, and they differ in terms of their education, earnings, frequency of home ownership, and use of welfare benefits and other social supports; combined, these groups account for 38% of the population of Solo parents with infant children
- The High Fliers are very well educated and have high levels of income, with generally single-child families and majority home-ownership, though they are small in absolute numbers in the wave 2 GUI data (N<50) comprising less than 5% of the population of Solo parents with infant children
- The Strugglers and Poor Single Mothers (PSM) are not generally active in the labour market, have a high reliance on welfare benefits, tend to have larger families and a greater reliance on social housing or, in the case of the PSM group, to live at home with their parents; they are relatively young with poor education levels and low earnings; combined, these two groups account for 58% of the population of Solo parents with infant children (PSM group accounts for 8%)
- There are significant differences between subgroups of Solo parents on numerous indicators to do with working patterns, child development, parenting styles/habits, welfare usage, demographics, health and other indicators

Policy implications

- The identification of subgroups within the Solo parent category, and the detection of statistically significant differences between subgroups on key socio-demographic and wellbeing indicators for parents and children, is a finding that should inform the future research agenda in this area
- The 5-way typology advanced here may be helpful in the more precise targeting of interventions aimed at Solo-parent families and in the formulation of policy relevant to Solo parents. For example, the finding that children in the PSM group are more likely to be overweight than children in other groups of Solo parents may be useful in the provision of dietary advice and support by health professionals, who may identify Poor Single Mothers on the basis of characteristics identified in this analysis, e.g. being relatively young and being more likely to live at home with their parents. Other groups, specifically the reference category group of Strugglers, were seen to be more likely on average to score higher on an index of depression, which may be useful information for relevant support services given that we also know the characteristics associated with being a 'Struggler', e.g. having a relatively large family while being relatively young and being unlikely to have a labour market attachment, perhaps due to childcare-related difficulties. These are merely illustrative examples, but the identification of group differences may be useful in other ways as regards the development of potential interventions
- The identification of potential impacts of marital status and family type transitions on depression outcomes for parents suggests a role for readily available advice and support to parents who may be undergoing such difficult and challenging life transitions. Findings such as these are timely, following the recent establishment of *Tusla* the Child and Family Agency in January 2014. This agency is responsible for improving wellbeing and outcomes for children and represents a major reform of child protection, early intervention and family support services, also incorporating some psychological services and a range of services responding to domestic, sexual and gender based violence. The agency should be supported in addressing not just the challenges raised by different types of family but also those posed by transitions between family types

Part II

Solo parents and Non-resident Fathers

Contact with fathers

General

- About 1 in 3 Solo parents had no contact with the non-resident father (NRF) by wave 2
- Of those who reported that the father lived elsewhere at W1, 16% reported that they were cohabiting with the biological father at W2
- Of those Solo parents whose child had daily contact with the father at wave 1, about half (55%) still had daily contact at wave 2
- Of those who had no contact at wave 1, 74% still had no contact by wave 2
- About 1 in 3 Solo parents reported an improvement in the quality of their relationship with the non-resident father between waves of the study, with a similar proportion reporting a decline

Financial contribution

- Over half (54%) of NRFs made no financial contribution to the upkeep of their child at W2
- About 1 in 3 NRFs (35%) made a regular financial contribution at W2
- Overall, 8% of Solo parents experienced a reduction in the frequency of financial contribution from the NRF
- Less than 1 in 5 non-resident fathers who never made a contribution at wave 1 had begun to make a contribution by wave 2
- Of those who were making a regular contribution at W1 the majority (65%) continued to do so at wave 2
- One fifth of those making a regular contribution and over one quarter of those making payments as required at W1 were making no financial contribution whatsoever by W2
- For those who transitioned into Solo parenthood between waves a greater proportion received a regular contribution than those who had been Solo from W1

Impacts on children and mothers

Children's SDQ scores

- There was no impact of frequency of non-resident father contact, or of change in quality of the mother-father relationship or of financial contribution of non-resident fathers on infant socio-behavioural difficulties (SDQ scores) at age 3

Children's physical abilities

- Improvement in the quality of the mother-father relationship over time was associated with better outcomes in terms of child physical development by age 3
- Children at age 3 were 2.2 times more likely to be able to throw a ball overhand and 1.6 times more likely to be able to grip a pencil in the correct fashion where the quality of the mother-father relationship improved over time

Mother's stress and depression

- There was no association of any indicator of non-resident father engagement and maternal depression index scores
- Frequency of child contact with father was associated with mothers' stress at wave 2, where more contact predicted lower stress scores (relative to those who had no contact)

Work and education effects of NRF contact

Transition into unemployment

- In families where the *frequency of father-child contact increased over time* there was a greatly reduced risk that a previously employed Solo mother would transition into unemployment
- There was no effect of NRF contact on likelihood of transitioning into work or into improved education

Unpaid Maternity leave

- For Solo mothers who had been working before birth, a reduction between waves in the frequency of financial contribution from the NRF significantly predicted an unpaid maternity leave *9.6 weeks shorter in duration* than for those who experienced no such reduction

Policy Implications

- The finding that increased father-child contact and improved quality of parents' relationship may be beneficial to both child development and maternal health underscores the relevance of facilitating the involvement of NRFs in their family's lives where practicable and removing barriers to shared parenting wherever they might be found. In this regard, recent changes to tax credits may be viewed as a barrier to shared parenting where they limit the ability of NRFs to contribute maintenance payments (see Policy Context section for this chapter and see next point below)
- Strengthening women's and children's entitlements as regards securing a financial contribution from a non-resident father – as well as improving awareness and knowledge of the legal rights and protections already in place and ensuring that such rights are adequately enforced – may help to remedy the infrequent or absent contributions that appear to be characteristic of the Solo parent group. At the same time it must be acknowledged that many NRFs may simply have been unable to pay, given the challenging economic climate at time of data collection (early 2011). In the current context the One-Parent Family Credit – a tax credit – was abolished on January 1st 2014. A new tax credit, the Single Person Child Carer Credit, which imposed more demanding eligibility conditions and operational rules was introduced. These changes seem likely to have made it very difficult for primary carer single parents to surrender their entitlement to the credit to a secondary claimant, e.g. the non-resident father of their child. The new requirement that the child live with the secondary claimant for more than 100 days in a year presents a serious obstacle to sharing the entitlement. This in turn has material implications for NRF earnings and thus for maintenance payments. In light of the results presented here, serious questions must be asked about any policy which makes it even less likely that NRFs will meet their maintenance payment obligations. Future research should attempt to establish empirically the impact of these tax credit changes on NRF maintenance payments
- The finding that NRF financial contributions impact on the duration of unpaid maternity leave taken should feed into policymakers' considerations around maternity leave for working Solo parents

2. Childcare

General

- Difficulties with arranging childcare placed restrictions on entering into work or study/training, or restricted the hours available for same, for substantial minorities of parents at wave 1
- The most widespread difficulty was a restriction on the hours available for work/study, affecting one-fifth of all parents (W1)
- These difficulties affected Solo parents disproportionately, even accounting for income and other socio-demographic differences (W1)
- Unmarried-cohabitant parents were more likely than Married parents to report that their hours available for work/study were restricted due to childcare difficulties (W1)
- Married parents at wave 2 were more likely to be more proactive than other types of parent in terms of registering their 3 year old for a primary school

Change over time

- Most parents using non-parental care at wave 1 were still doing so at wave 2; most children who were in parental care at wave 1 remained so at wave 2
- Most movement between types of non-parental care over time was from relatives into centre-based care

Centre-based care

- Looking at main type of care, over half of all non-parental care at wave 2 took place in centre-based care for all marital status types
- 58% of Married parents, 65% of Unmarried-cohabitant parents and 66% of Solo parents used centre-based care at wave 2 to some degree
- Costs of centre-based care varied significantly by marital status: median spend was €85 per week for Married parents, €55 for UC parents and €42 for Solo parents
- Cost of centre-based care was negatively correlated with indicators of quality; where children were in low-cost childcare parents were less likely to agree that the centre was making adequate provision for them in terms of stimulation and activities

- Non-married parents were significantly more likely than Married parents to have a negative impression of their childcare centre on some subjective indicators of childcare quality

Impacts of difficulties arranging childcare

- Restricted hours, prevention of study, or being forced to leave/reject a job due to childcare difficulties at wave 1 were all factors correlated with an increased likelihood of improving one's human capital through acquiring a higher level of education between waves; this may be due to selection effects
- Difficulties arranging childcare were seen to impact on the likelihood of parents transitioning into unemployment between waves of the study, but this varied depending on marital status
- Restrictions on hours available for work or study were significantly associated with a higher probability of moving into unemployment for Married parents; this restriction did not impact Unmarried-cohabitant parents in the same way, but it must be borne in mind that UC parents have a higher probability of moving into unemployment generally compared to Married parents, and this is not entirely accounted for by socio-demographic differences
- Prevention of study or training affected both Married and Unmarried-cohabitant parents, being associated with a higher probability of transitioning into unemployment in each case for those faced with this difficulty¹

¹ It should be remembered that the absolute number of respondents transitioning into unemployment between waves was small, affecting about 200 respondents in total.

Policy implications

- Labour market entry for Solo parents is being restricted by difficulties arranging childcare as is potential for study or training: targeted childcare subsidies for Solo parents seeking to improve their education or actively seeking work will assist with labour market integration and with human capital acquisition. The fact that subsidised schemes already exist in Ireland, like the Community Childcare Subvention scheme (CCS), but that such problems are still encountered by parents is an issue of concern. While the latest available GUI data are a couple of years old now, questions must nonetheless be raised about the adequacy of subvention arrangements. Childcare providers participating in the CCS scheme do so voluntarily and this has implications for the adequacy of coverage with some parents potentially losing out for simple reasons of proximity if there are no participating providers nearby or within feasible travelling distance. Barriers to participation by childcare providers – for example, backdated payments to providers could cause difficulties if operating at a significant lag – should be assessed and removed where feasible. The free pre-school year (ECCE) is used by almost all parents, yet it only provides 3 hours of free pre-school per day, with parents liable for all extra costs incurred beyond this limit; there are perhaps questions to be raised here about the adequacy and resource efficiency of these arrangements
- Wide disparities exist in spending on centre-based care, with Solo parents spending far less than other groups per week and this can most likely be explained in terms of Solo parents receiving the highest levels of subsidy (and thus paying the lowest cash amounts). There is some evidence to suggest a negative correlation between cost and quality of centre-based childcare. Even though Solo parents are likely to be receiving subsidy, they are more likely to express reservations about the quality of their childcare. As poor quality care may be detrimental to children's development, especially among the already disadvantaged (Melhuish, 2003; Phillips and Lowenstein, 2011), it may be worth considering childcare subsidies targeted specifically at Solo parents of very young children. Likewise, ongoing efforts should be made to ensure that minimum quality standards are fit for purpose and enforced across all types of childcare whether subsidised or not

- Prevention of study or training by childcare difficulties, or restriction of the hours available to parents for work/study, were implicated in parental transition into unemployment over time. This may suggest a need for more creative thinking about the provision of childcare arrangements, perhaps in the form of childcare subsidies targeted at women in work and at specific education or training programmes deemed likely to be beneficial to employment outcomes. This is quite separate to childcare schemes such as the CETS scheme which helps women who are unemployed but wish to undertake a vocational training course or enter into a Community Employment scheme. The withdrawal in 2014 of the SOLAS (formerly FÁS) training allowance for those on One-Parent Family Payment may also be relevant here, if parents had been reliant on this to subsidise childcare arrangements while undertaking training

3. Parents' health and parenting

Parents' health

Change in parents' depression scores from wave 1 to wave 2

- Solo and Unmarried-cohabitant parents were more likely to register a change in their depression score over time than Married parents, whether positive or negative
- These differences by marital status remained when controlling for other factors
- Transitions between family status types from wave 1 to wave 2 were seen to be associated with higher depression scores, whether transitioning from UC parenthood into marriage or from UC parenthood into Solo parenthood
- Increased stress, parent-child conflict and hostile parenting styles were all associated with a higher likelihood of experiencing increased depression scores as opposed to no change between waves of the GUI study

Change in parents' stress scores

- The majority of parents, whatever their marital status (59-66%), recorded a decrease in their recorded self-report stress scores from wave 1 to wave 2
- However, Solo parents were significantly more likely to report an increase in stress than other marital status types, controlling for other factors

- Higher scores on the depression index and/or higher levels of parent-child conflict were also associated with higher stress levels, indicating the complex interrelationship of these factors

Parenting

Parent-child relationship: Conflict (Pianta) scale

- There were no significant differences by marital status on scales of parent-child positive relationships or conflictual relationships when controlling for other factors
- Similarly, transition into any new type of family/marital status between waves was not associated with the quality of the parent-child relationship
- Increase in reported parental stress over time was associated with higher levels of parent-child conflict
- Any change in reported depression scores over time – either positive or negative – was associated with higher levels of parent-child conflict ($p < .10$), however the magnitude of these effects was about half that of an increase in parental stress
- Those who experienced a crisis pregnancy also had higher levels of conflict with their child ($p < .10$)
- Parental disability and a perceived lack of help from outside the home also predicted higher levels of parent-child conflict

Parenting style: warmth, consistency, hostility

- There were some small though significant differences in parenting style by marital status even controlling for other factors: Solo parents exhibited slightly less parenting hostility than Married parents; Unmarried-cohabitant parents exhibited slightly less consistency than Married parents
- Change in depression scores over time, either an increase or a decrease, was associated with a more hostile parenting style

Dealing with misbehaviour

- Different methods of dealing with misbehaviour – ignoring, shouting at, telling off, or bribing one's child, along with removing treats or placing the child on the naughty step – are patterned by family type
- Solo and Unmarried-cohabitant parents are less likely than Married parents to engage in certain practices, e.g. less likely to 'bribe', shout at, or ignore their misbehaving child
- Different methods of dealing with misbehaviour are associated with child socio-behavioural outcomes at three years; where parents never employ these methods children have better behavioural outcomes
- Children of parents who 'never employ' these methods have better socio-behavioural outcomes (lower SDQ scores) than children of parents who use these methods, even controlling for other factors

Parent-child activities and learning

- There are no differences by family type (when controlling for other factors) across a number of indicators of activities that parents might engage in with their infant, including reading, practicing the alphabet, and counting
- However, Solo parents are significantly less likely to engage in physical games than Marries
- Working outside the home, feeling they do not get enough help from outside the home, and having a larger family were all factors frequently associated with a lower likelihood of parents engaging in these kinds of learning activities
- Books: The availability of books for children in the home was associated with marital status; Solo parents tended to have fewer books than Married or Unmarried-cohabitant parents, and UC parents tended to have fewer books than Married parents
- Television: there were no differences by marital status in time spent watching TV
- Any differences in hours of television were explained instead by differences in income and education, with factors such as the mother's age (young mothers let their children watch more TV), mother being in poor health, or working outside the home also being relevant

- Television or video games in child's room: Unmarried-cohabitant parents and Solo parents were significantly more likely to allow this than Married parents, controlling for other factors
- TV or video games in child's room: having a larger family, being a younger parent, or a family history of poverty were other relevant factors associated with allowing this

Policy implications

- Increased stress, parent-child conflict and hostile parenting styles were all associated with a higher likelihood of experiencing increased depression as opposed to no change between waves of the GUI study. These factors are all inter-related in a complex manner, making it difficult to pinpoint causation with certainty. Interventions aimed at helping parents cope with stress and the problems caused by stress should take account of the complex connections between these areas. Holistic strategies seem likely to be more effective than piecemeal approaches
- The finding that family type transitions – whether into marriage or out of cohabitancy into Solo parenthood – are associated with higher depression scores may suggest the utility of targeting information at those making such transitions and at those working with them. Raising awareness about available mental health or other (e.g. financial, advice, support, mediation) services may help to ameliorate emotional or practical challenges presented by making such transitions²
- An increase in parental stress over time is associated with a higher degree of parent-child conflict; this finding should inform any information, advice or other interventions directed at parents who may be experiencing, or at risk for, a high degree of stress and should likewise inform the practices of those working with such parents. This issue may also be linked to the issue of **childcare** insofar as difficulties arranging childcare at wave 1 have been shown to be associated with higher levels of reported parental stress levels at wave 2

² It should be noted here that the results do not indicate that those making such transitions are more likely to be 'depressed' in a clinical sense, merely that they register higher scores on an index of depression scores.

- Similarly, the finding that experience of crisis pregnancy is associated with higher levels of parent-child conflict may be an issue worthy of the attention of healthcare and other specialists, such as public health nurses or pregnancy counselling agencies, involved in the post-pregnancy care of those women whose pregnancies were stressful and unintended
- Likewise, the somewhat weaker finding that an increase in depression scores is associated with more hostile parenting styles is in line with previous research and should be taken into account in the planning or preparation of information, advice or other interventions concerned with parents who may be at an elevated risk for depression
- Excess exposure to television at a very young age may be detrimental to children; raising awareness about this with the types of parents more likely to expose their children to TV at a young age – younger mothers, those working outside the home, those in poor health, those with low income or education – may have benefits for children over the long duration
- Mothers working outside the home, while being more likely to allow more television, were also less likely to engage in learning activities with their infant. This issue may also be linked to childcare, highlighting both the importance of flexible childcare – and work – options for mothers so as to facilitate greater mother-child interaction, while also underscoring the importance that working mothers have access to *quality* childcare which provides stimulation and learning opportunities for their infants

4. Child health and wellbeing

Child's health

Child's current health

- Solo parents appear more likely to report that their child is unwell than Married parents or UC parents, however this can be accounted for in terms of Solo parents higher scores on indexes of stress and/or depression
- Parental stress and depression as well as younger gestational age at birth are all implicated in poorer health outcomes for children

Change in child's health over time

- Solo parents are significantly more likely than Married parents to report a decline in their child's health over time ($p < .10$)
- Again, higher scores on indexes of stress and depression were associated with a decline in the child's health over time
- Other factors such as poor general health of the PCG, parental disability, complications in pregnancy, or premature birth were also associated with a decline in child health

Injury requiring hospitalisation

- This occurred significantly more frequently for children of Solo parents than for children of UC and Married parents. This finding is in line with previous research; as is the finding that injury occurs more frequently for children in larger families
- Where mothers had experienced crisis pregnancy this was associated with a higher likelihood of the child sustaining an injury requiring hospitalisation, and this effect could not be explained away in terms of differences in parenting style or in stress or depression scores

Use of medical services

- Unmarried-cohabitant parents visited the GP less frequently than Married parents, controlling for a range of factors; Solo parents visited with no greater or lesser frequency once other explanations (e.g. income, education) had been accounted for
- Where UC parents had transitioned between waves of the study into Married status they continued to visit the GP less than those who had made no such transition
- Low education, low income, being a younger mother, mother's poor health, complications in pregnancy, or experiencing a crisis pregnancy were all associated with more intensive usage of a range of different medical service providers
- Complications in pregnancy, as well as parental disability likewise meant more intensive use of services, i.e GP, Public health nurses, or A&E
- Higher parental stress was associated with more intensive use of services for 6 of 7 service types examined (except Practice Nurses)

- Premature birth predicted significantly more intensive usage of all medical services (except social workers)
- The vast majority of Solo parents are registered medical card holders, though the relevant factor here is income and not marital status per se

Change in frequency of use of GP services over time

- Transition from UC parenthood into marriage, or transition out of Solo parenthood, meant a lower likelihood of parents having increased their usage of GP services over time
- Parents whose score on the index of depression increased over time were predicted to have also increased the frequency of their use of GP services ($p < .10$)

Child Wellbeing

Physical abilities

- The only association of marital status with indicators of child's physical development was the finding that children of Solo parents are less likely to be able to throw a ball overhand than children of Married or UC parents. This could not be explained by differences in terms of birth weight, gestational age at birth, parenting style, or parental stress
- Consistent parenting and a positive parent-child relationship were strongly associated with an ability to perform other physical tasks, i.e. standing on one leg, throwing a ball overhand, drawing/copying a vertical line, holding a pencil with the correct grip
- Complications in pregnancy, low birth weight, and premature birth were all associated with poorer developmental outcomes (all reduced the likelihood of being able to hold a pencil correctly; complications and prematurity also reduced the likelihood the study child would be able to stand on one leg)
- Higher levels of parental stress at wave 2 were associated with some poorer outcomes (lower likelihood of being able to copy a line or hold a pencil)
- Transition between different types of family status was associated with one negative developmental outcome (moving from UC to Married parenthood; ability to copy a line

reduced) and one positive developmental outcome (moving out of Solo parenthood; ability to correctly hold a pencil increased). Why transition into marriage from UC parenthood should impact negatively is unclear

Socio-behavioural development (SDQ scores)

- There was a clear patterning of socio-behavioural difficulties by marital status
- Solo parents' children were seen to have significantly higher levels of social difficulties even controlling for a range of factors
- Children of Solo parents who transitioned into marriage/cohabitancy were also predicted to have higher levels of social difficulties
- Smoking while pregnant, the baby being male, and the mother being relatively young or in poor health all predicted higher levels of difficulties
- Parenting styles were strongly predictive of higher levels of socio-behavioural difficulties when parents exhibited hostile or inconsistent parenting behaviours
- Change in depression or stress scores (increases in scores over time) significantly predicted higher levels of socio-behavioural difficulties for 3 year old infants

Obesity

- There were gender differences in the determinants of being obese among 3-year old infants
- Female infants of Solo parents were less likely to be obese than female infants of Married parents
- Parental behaviours such as smoking during pregnancy or parenting style (inconsistency) predicted higher risk of obesity amongst female infants
- Higher PCG scores on an index of depression also predicted a higher risk of female infant obesity
- For male infants, income was a major predictor, and there was no effect of marital status or family type when controlling for this and other factors; education level of the parent was also seen to matter
- Male infants from larger families were significantly less likely to be obese than those from smaller families

Overweight

- There were also gender differences in the determinants of infants being overweight
- Female infants from Unmarried-cohabitant families were more likely to be overweight than female infants of Married parents, though the association was somewhat weak. This difference could not be explained in terms of differences in education, income or a range of other factors
- Inconsistent parenting styles, a family history of poverty, and being born prematurely all predicted a higher likelihood of being overweight for *both* male and female infants
- Higher PCG depression scores were weakly associated with a higher risk of male infants being overweight

Dietary habits

- There were indications that Solo parent family types were more likely to engage in unhealthy dietary habits or to allow unhealthy eating practices
- Solo parents were more likely to give their child unhealthy foods, as were Unmarried-cohabitant parents who transitioned into Solo parenthood
- UC parents were less likely to give their children healthy foods, and those who transitioned into marriage over time were also less likely to do so
- These differences remained even accounting for differences in income, education, and parenting styles that may have explained them, however some of the associations were weak in a statistical sense and so further research may be needed; higher levels of education and consistent and positive parenting styles predicted healthy dietary habits and eating practices
- Regular contact with grandparents was (for some indicators) associated with more healthy dietary practices and habits
- Experience of Crisis Pregnancy was implicated in some unhealthy dietary habits, and this could not be explained by differences in income, stress or other factors
- Parental stress – and to a lesser extent higher scores on the depression index – was associated with unhealthy practices

Policy implications

- Policies aimed at helping parents who are at higher risk for stress and/or depression seem likely to have positive consequences for child health, physical development, socio-behavioural development and diet. Targeting of any such policies at Solo parents, a group at higher risk for these difficulties, may be justified
- The implication of prematurity in poor health outcomes is well established in the literature and the findings here support this. Advice, information, support and guidance to all parents to highlight the linkages of certain behaviours such as smoking with the risk of premature delivery and/or other development impacts on the child will continue to be important in light of this. Targeting of messages aimed at those more likely to engage in such behaviours, e.g. Solo parents' higher likelihood of smoking while pregnant, may be warranted
- Children of crisis pregnancy were more likely to encounter undesirable outcomes such as sustaining an injury requiring hospitalisation, or having poorer dietary habits, and these effects could not be explained away in terms of differences in parenting style, stress or other background characteristics. While no clear policy implication as such arises from these findings it may be that further research to clarify the linkages between crisis pregnancy and undesirable health outcomes is needed
- Educational programmes may help to improve the dietary habits of certain groups of parents, and low education in general was correlated negatively with dietary outcomes.
- Those undergoing transitions to new family types appear to be at some risk of negative outcomes including engaging in or allowing less healthy dietary habits, and higher levels of socio-behavioural difficulties for their children. The availability of advice or support at such a potentially disruptive time may be beneficial
- The issue of childhood obesity is a pressing issue for policymakers, with 1 in 20 Irish 3-year olds now classified as obese. The issue was seen to cut across family types in this analysis, with the results underscoring the importance of education and income as well as parental behaviours and parenting styles

5. Work and Welfare

Employment and employment transitions

General

- A greater proportion of Solo parents improved their level of education over time than parents from other marital status groups
- However this difference was accounted for by pre-existing differences in income and education
- Almost one-quarter of those with Secondary education as their highest level at W1 reported a higher level of education (almost entirely Vocational/Non-degree) by W2

Positive educational change over time

- Unmarried-cohabitant and Solo parents were significantly less likely than Married parents to improve their level of education over time if they had been working at wave 1, controlling for other factors
- Solo parents who transitioned into cohabitancy and had been previously labour market inactive were more than twice as likely as other parents to improve their level of education and this effect was highly significant
- Those in higher income brackets were more likely to have improved their education
- Women with larger families at wave 2 were less likely to have improved their education level over time ($p < .10$), highlighting perhaps the importance of appropriate and affordable childcare services for women with large families who may wish to improve their education over time
- Labour market-inactive women at wave 1 who were in bad health were significantly less likely to have improved their education over time
- Having experienced crisis pregnancy was associated with a higher likelihood of improving one's level of education. Why this might be so is unclear but qualitative research with women who experienced CP may help to understand the processes behind this finding. It may be that this unexpected pregnancy was highly stressful for the women involved precisely because it interrupted their studies, to which they later returned

Positive educational change over time & OPFP

- Entering into receipt of the One Parent Family Payment (OPFP) between waves 1 and 2 of the GUI study was associated with a higher likelihood of improving one's level of education
- Those who were employed at W1 and who entered into receipt of OPFP were more than twice as likely to have also improved their educational level over time
- There was a higher incidence of part-time work among those on OPFP (at W2) who improved their education

Current economic status and change over time

- Over 70% of those who were Homemakers at wave 1 were still Homemakers by wave 2
- Over 80% of those who were Working at wave 1 were still Working by wave 2, while 13% had become Homemakers and 3% were unemployed

Transition into unemployment

- Unmarried-cohabitant PCGs were more likely than Married PCGs to transition into unemployment by wave 2, having been previously employed at wave 1
- This difference could not be accounted for in terms of pre-existing differences in education or other background characteristics
- However this was related to the greater propensity of Married parents to hold 'better' jobs than UC parents; the job profile and income profile of UC parents is poorer relative to Married parents
- Education generally was not associated with likelihood of transitioning into unemployment; Income was however associated, with transition into unemployment more likely to affect the less well-off

Transition into work

- The likelihood of transition into labour market activity did not vary by marital status
- Having a higher level of education or being in a higher household income bracket were associated with a higher likelihood of moving from non-work into work over time
- Improving one's level of education between waves of the study was also associated with a higher likelihood of transitioning into work
- Having a relatively large family or having more children between waves was associated with a lower likelihood of transition into work

Household income by marital status

- Mean equivalised household income declined by almost €4,000 for Married parents between waves 1 and 2
- Mean equivalised household income declined by almost €4,300 for Unmarried-cohabitant parents between waves 1 and 2
- Decline in mean household income for Solo parents was much smaller at about €900 between waves 1 and 2
- The gap in mean equivalised household income between Married and UC parents increased slightly between waves 1 and 2 and amounted to €4,615 by wave 2
- The gap in mean equivalised household income between Married parents and Solo parents narrowed over time but still amounted to €7,829 by wave 2
- Differences in education accounted for 44-45% of the gap between UC and Married parents mean household income
- Differences in education accounted for 34-38% of the gap between Solo parents and Married parents mean household income

Maternity Leave: incidence and impacts

General

- Wave 1 data showed that there were significant associations between marital status and the type or extent of maternity leave taken
- Solo parents who had been employed were less likely to take any form of post-birth leave, even including their statutory entitlement
- Taking unpaid maternity leave varied by marital status: One fifth (21%) of Solo parents took this leave, compared to about half of Married parents (47%), and 37% of UC parents
- Most people took their paid maternity leave entitlements. Less than half of women (37%) who took paid maternity leave also took their unpaid maternity leave entitlement

Impacts on children: socio-behavioural outcomes

- There was no association of not taking paid maternity leave with infant socio-behavioural outcomes as measured by SDQ scores

- Not taking unpaid maternity leave was associated with worse outcomes for children, i.e. higher SDQ scores
- This effect varied by marital status and was seen to be greater for Unmarried-cohabitant parents. Children of UC parents who had not taken unpaid maternity leave had higher levels of difficulties than children of Married parents who had likewise not taken such leave
- There was no impact of not taking annual leave post-birth on infant behavioural outcomes
- Taking or not taking maternity leave (paid or unpaid) or annual leave showed no association with children's physical development, or with PCG stress, depression, or parenting style or parent-child conflict

Welfare

- 43% of respondents reported that 'making ends meet' was more difficult at wave 2 than they had indicated at wave 1. This did not vary by marital status
- Having higher levels of education and having external support from family and friends outside the home were 'protective factors' against this
- Those in lower income quintiles were less likely to have reported encountering greater difficulty by wave 2
- About 26% of families overall were classified as 'at risk of income poverty' rising to 54% among Solo parent families

Change over time in welfare usage

- One-in-five Married parents entered into receipt of social welfare benefits of some sort between waves 1 and 2 of the study. The corresponding figure for UC parents was almost one-in-two (47%), while for Solo parents it was two-in-three (68%)
- These differences remained when accounting for pre-existing differences in terms of income, education and other background characteristics: Solo parents were more likely than either cohabitant group to have entered into receipt of welfare benefits, and UC parents were significantly more likely than Married parents to have done so
- Poor health, low income, low education and class factors such as a family history of low income were associated with a higher likelihood of entering into benefit receipt

One Parent Family Payment (OPFP)

General

- 60% of all Solo parents are in receipt of OPFP at wave 2
- Of those Solo parents in receipt of OPFP, 27% are recorded as working at wave 2
- Of those Solo parents not in receipt of OPFP, about half (47%) are working at wave 2

Labour market readiness of those on OPFP

- Education levels generally are poor amongst recipients of OPFP
- The educational profile of the group of Solo parents who are not working at wave 2 is similar, regardless of whether they are in receipt of OPFP
- However the educational profile of non-working Solo parents on OPFP is poor in comparison to working OPFP-recipients and poorer again when compared to Solo parents who are working and not in receipt of OPFP
- Solo parent OPFP recipients hold a Degree-level education with only one-third the frequency of non-OPFP recipient Solo parents
- Of those in receipt of OPFP who are not currently working, 30% have 'never worked'
- Among those not currently working who had previously worked, OPFP recipients had been out of the labour market for longer

Transition into OPFP receipt over time

- Transition into OPFP receipt was associated with positive educational change over time, i.e transitioning to a higher level of education
- Recipients of OPFP at wave 2 were more likely to have transitioned into employment over time from a prior position of non-work ($p < .10$)

Non-labour market active OPFP recipients, characteristics

- Unmarried-cohabitant parents who transition into Solo parenthood are almost four times more likely than other respondents to be non-working recipients of OPFP
- Being less well-off, poorly educated, relatively young, in bad health, or having experienced a crisis pregnancy were all characteristics of non-active OPFP recipients

Policy implications

- Educational improvement between GUI waves has been shown here to be associated with a higher likelihood of transition into work. Where improving the labour market readiness of non-labour market active women through education is an ongoing policy concern, support should be directed towards those groups less likely to seek improved education and most in need of such support. At the same time, in the context of scarce resources, policymakers may have more initial success targeting those whose 'resource-need' is lower given their closer proximity to the labour market, i.e. those who have been out of the labour market for a shorter period of time will face lower barriers to re-entry than those who have been non-active for a longer period. Adequate childcare arrangements will be an important consideration in securing human capital gains for non-labour market active parents through education. Existing schemes such as the CETS (Childcare Education and Training Support) tie childcare provision to specific types of vocational training course. Targeting supports at courses of greatest labour market relevance and at individuals facing lower labour market barriers seems likely to bring the greatest gains
- Changes were effected in Budget 2013 in rates of maternity leave paid but not in the number of weeks of maternity leave to which women are statutorily entitled. As women's leave-taking habits are highly policy responsive with regard to paid statutory entitlements it seems unlikely that these changes will impact on whether women take the full extent of their paid maternity leave; most will continue to do so. However, if the reduction in rates creates financial difficulties for some women it may result in an earlier return to work or it may reduce the amount of unpaid maternity leave women take after their paid statutory entitlement. These findings show much variation by marital and cohabitancy status in whether or not women take unpaid maternity leave. Further, the findings show positive impacts on children in terms of socio-behavioural outcomes where parents took unpaid maternity leave. The impact of not taking this leave was seen to vary by marital status, having a greater impact on children of Unmarried-cohabitant parents. In light of this, monitoring the impact of maternity leave rate changes on unpaid maternity leave-taking seems advisable. Likewise, the potential for non-Married parents and their families to be adversely affected by these changes should be taken into account by policymakers

- For those already in work, Unmarried-cohabitant parents and Solo parents were less likely than Married parents to have improved their education over time. This may suggest the need to examine the adequacy or flexibility of in-work supports for parents in these groups who may wish to improve their education
- The greater vulnerability of certain Unmarried-cohabitant parents to entering into unemployment, due in part to their differing employment profiles (holding managerial-level jobs with less frequency than Married parents), underscores the potential individual and labour market gains to be made by improving education levels

One Parent Family Payment

- Among Solo parents, OPFP receipt was associated with positive educational change and with transition into work. Given that 'earnings disregards' operate for this welfare benefit the reduction of these disregards (from €130 in 2012 to €60 by Jan 2016 in line with the government's plans) may act to discourage OPFP recipients from transitioning into the workplace or pursuing education while perhaps supporting a part-time income with OPFP. This situation should be monitored going forward, in light of these findings
- The finding that claiming OPFP was associated with positive educational change between waves for those who were working at wave 1 may have further implications given that from the beginning of 2014 those claiming OPFP will no longer be allowed to claim a training allowance if attending a SOLAS (formerly FÁS) training course nor will they be allowed to claim another welfare payment if they enter on to a Community Employment (CE) scheme. If the detected effect was in part due to the availability of a training allowance for OPFP recipients (or extra resources arising from benefits attached to CE) then this policy change may have negative implications for the educational and labour market attainment of Solo parents
- A number of factors are of concern regarding the labour market readiness of OPFP recipients given the impending change to age thresholds for OPFP where recipients will be moved off OPFP onto another welfare benefit once their child reaches the age of 7 (effective for all recipients from July 2015). Education levels are poor relative to working Solo parents (whether on OPFP or not), 30% of those on OPFP and not working have 'never worked' and so may not possess even the 'soft skills' associated with the modern workplace and, of those who have worked before, OPFP recipients have been out of the

labour market for a longer time than non-recipients. At a minimum, information campaigns to raise awareness about educational and training options and other more active measures to give people work experience will help in the transition out of OPFP. The adequacy of existing services must also be taken into account and due consideration given to provision of new services where required given that 63,000 recipients of OPFP will be moved to other welfare benefits, mainly Jobseeker Allowance Transition, by July 2015; however a recipient is not required to be available for full-time work and genuinely seeking work until their youngest child reaches 14 years of age. This will be a critical period for facilitating and supporting former OPFP recipients as they prepare to transition into the labour market

- There is no intention as of yet to reduce the OPFP age threshold below 7 years of age. From the perspective of this infant cohort analysis, protecting the threshold at this level may be beneficial given the implication of OPFP receipt in educational improvement of primary caregivers over time. Future data, waves 3 and 4 of the GUI study, could allow for charting of educational and employment outcomes of those on OPFP over a longer duration

Introduction

I. Aims and Purpose of the Study

Treoir, the National Federation of Services for Unmarried Parents and their Children commissioned a research project to analyse the wave 2 data from the infant cohort (at 3 years old) of the *Growing Up in Ireland* study, in conjunction with data from wave 1 of the Infant Cohort study (9-month-olds). The study was funded by the HSE Crisis Pregnancy Programme.

A brief was agreed concerning the aims and purpose of the research which stated that the project should:

1. Use marital status as the focal independent variable of interest and
2. Exploit newly available information on change over time between GUI waves to:
3. Analyse outcomes by family type, and change in family type, across a range of policy-relevant areas including:
 - Health of parents
 - Health and wellbeing of children
 - Childcare, with a section to focus on 'quality of childcare'
 - Work and Welfare outcomes, with a section to focus on 'labour market readiness' of those on One-Parent Family Payment (OPFP)
 - Solo parent contact with non-resident fathers

The overarching aim was to produce a report focused on these substantive areas with the intention of informing evidence-based policy recommendations. The study comes in the context of changing family structures in Ireland including:

- An increase in the proportion of single-parent households with dependent children to 7.3% in 2011, higher than the EU-27 average 4.4% (*Eurostat SILC statistics*, 2011)
- An increased divorce rate in Ireland since the law was liberalised in 1996, increasing by 150% in the ten years up to 2011 (*Irish Examiner*, March 30th 2012)
- Falling marriage rates amongst those in their 20s, with marriage or any type of partnership increasingly delayed until one's 30s
- A rapid increase in cohabitation among younger adults (Lunn et al., 2010)
- An increase in the percentage of births outside marriage with an accompanying increase in the proportion of those born to cohabitant households (CSO, various years)

Background to the Growing Up in Ireland Study

From its foundation in 1976, Treoir, formerly the Federation of Services for Unmarried Parents and their Children, was convinced of the need for a national longitudinal study of children to ascertain the outcomes for the children of unmarried parents.

Treoir was very concerned about the over-representation of children of unmarried parents in state care and was keen to ascertain: what factors lead to children of unmarried parents coming into care; what percentage of women who have non-marital children keep them and raise them in a one parent family; how they fared in terms of general health and emotional wellbeing in comparison with children in other families; what were the social and financial circumstances of unmarried mothers raising children alone; and what kind of movement there was in and out of one-parent families.

The idea of the study was first mooted by Treoir in the early 1980s and discussions on the possibility of initiating the study were held with various bodies over the years including the Economic and Social Research Institute, the Combat Poverty Agency, the Health Research Board, the health boards, maternity hospitals etc. Funding was sought from numerous sources including the Ford Foundation, Ireland American Fund, the European Commission, Carnegie Corporation, Millennium Fund, as well as various sources in Ireland, without success. In 1993, on behalf of Treoir, the ESRI prepared a paper “National Child Development Study – proposal for the initiation phase”. In 1998, concerned at the lack of progress, Treoir commissioned “See how they Grow – a proposal for a longitudinal study of children in Ireland” in an effort to progress the project. Treoir also made a case for the study to the Commission on the Family which resulted in a recommendation for the study being included in the Commission’s final report in 1998.

Staff of Treoir met with personnel involved in the National Child Development Study in Britain on a number of occasions and sought their assistance in promoting the study. On their advice a group “Friends of the longitudinal study” was brought together by Treoir and a campaign was designed and initiated. Meetings were held with Ministers and senior public servants in the Departments of Social Welfare and Health. This resulted in the Cabinet Sub-committee on Social Inclusion giving approval for a detailed proposal outlining the scope, methodology, management arrangements and costs involved in such a study being prepared and funded by both Departments. The design brief, produced by a consortium of researchers, was submitted in July 2001. In 2006, work began on the *Growing Up in Ireland* study.

2. Methodology

Growing up in Ireland Study & Methodology

The Growing Up in Ireland study was commissioned by the Irish Government and funded by the Department of Health and Children through the Office of the Minister for Children and Youth Affairs in association with the Department of Social Protection and the Central Statistics Office. Work on the project began in April 2006 by a research consortium led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin (TCD). (Quail et al., 2011)

The 11,134 children representing the nine-month cohort were born between 1st December 2007 and the 30th June 2008 and data collection for that group took place between September 2008 and April 2009. Full details of the sampling procedure and design methodology of the GUI can be found in the supporting documentation to the study (Quail et al., 2011).

The supporting documentation for wave 2 states:

The Wave 2 target sample included all 11,134 Study Children who participated in the first round of interviewing. The Study Child is the longitudinal focus of the study. We are interested throughout the study in tracking, interviewing, measuring and testing the child, regardless of changes in his/her family composition, structure, location etc. In this respect the study is based on a pure, fixed panel of children who were nine months of age at the time of first interview. After the initial sample selection no additions were made to the sample with the only loss being through interwave non-response or attrition (including moving outside the jurisdiction) and death. Therefore the longitudinal population which we are referring to at Wave 2 is the population of nine-month olds (and their families) who were resident in Ireland at Wave 1 and who continued to be resident in Ireland at Wave 2.

Children were interviewed in the month following their third birthday (i.e. in their 37th month). As the infants had been born between 1st December 2007 and 30th June 2008, it followed that fieldwork for Wave 2 took place between December 2010 and July 2011 as the children turned three years of age. (Quail et al., 2013)

For full details of processes undertaken by the GUI team to deal with attrition between waves and reweighting the data see the wave 2 supporting documentation. The wave 2 survey saw 9,793 primary caregivers (PCGs) complete the main interview.

Analytic Approach

The focus in this report is on primary caregivers (PCGs) which in almost all cases means the mother of the study child. The data were analysed using a range of descriptive and analytic techniques from simple summaries to hypothesis-testing techniques of regression analysis. These techniques include: regression, including ordinary least squares regression, for use with scale variables, and logistic regression, for use with binary (Yes/No; 1/0) variables; ordered logistic regression, for use with ordered categorical variables; multinomial logistic regression, for use where there are a number of categorical response categories without any clear ordering. More information on these techniques can be found in numerous sources (StataCorp, 2009a, 2009b; Wooldridge, 2009). In a basic sense, regression analysis is simply a means of estimating the relationships between variables, specifically the effect of one or more 'independent' variables on an outcome ('dependent') variable of interest.

The method allows the researcher to control for the effect of other factors related to the outcome variable. These might be factors that we know to be related to the outcome variable in fact, or factors that we hypothesise will have an effect on that variable. For example, we might estimate the effect of education level on earnings; generally higher education levels will predict higher levels of earnings. However it is important to also control for other determinants of earnings so that we get an accurate picture of the true relationship of these variables. We might control in this instance for age, say, on the basis that older people are likely to have higher earnings than younger people. Controlling for this and other factors provides a more accurate estimate of the effect of education, net of the effects of other explanations for the outcome variable (i.e. earnings).

All estimates in statistical analysis are precisely that: estimates. As such they come with upper and lower bounds and greater or lesser degrees of certainty. Highly uncertain estimates (i.e. a wide interval between upper and lower bounds) imply a weak or absent relationship between two variables: the data is simply random and one variable does not help to 'explain' the other. This is what is called a non-significant relationship, and is not of analytic interest. When something is statistically 'significant' this should not be read to mean that it is necessarily 'important' or even interesting, merely that there is a systematic, i.e. non-random, relationship between the variables in question. In such a case, the effect of one variable on another in the sample is simply 'significantly different from zero' (where zero is the null hypothesis of no

effect); meaning there is likely to be an actual effect in the population. The significance level chosen by the researcher indicates how likely a result is due to chance. The standard significance level in the social sciences is 5% and this is the level applied throughout this research (except where otherwise noted). An estimate of an effect that is 'significant at the 5% level' implies that there is only a 5% chance that the effect is due to random fluctuations in the data.

Weighting

All tables, graphs and models apply population weights unless otherwise recorded in the accompanying notes for that table, graph or model. The weights applied are wave-specific, i.e. a wave 2 outcome will have used wave 2 weights. Where chi-square associations are used with population weights the significance statistic reported is the Pearson chi-squared statistic, corrected for the survey design with the second-order correction of Rao and Scott (1984) and converted into an F statistic. On inter-wave attrition, the guide to the GUI methodology reports that to account for “differential attrition the data from Wave 2 of the survey were statistically reweighted to ensure that they were fully representative of the population of children who were resident in Ireland at 9 months and who were still living here at 3 years ... In summary, the completed sample at Wave 2 was adjusted so that its distribution ... was in line with that of the Wave 1 completed sample” (Quail et al., 2013: 11–12)

Variables: Controls

Marital status and family transition indicators

We employ Kiernan’s tripartite scheme to specify marital status categories (Kiernan, 2005) :

- **Married:** comprises all respondents who were ‘ever married’, i.e. marital status is one of currently married, married and separated, or divorced/widowed (N=7205). All people in this category are cohabiting with a partner. It should be borne in mind that logically this group will include those who were formerly married to one partner but are now cohabiting with another partner; this is a very small subcategory of respondents (N=136)
- **Unmarried-cohabitant (UC):** this category comprises only those who responded as ‘never married’ and all also have cohabiting partners. (N=1296)
- **Solo:** this category (total N = 1,198) combines single parents, all of whom ‘never married’ (N=953) and lone parents who were either ‘married and separated’ (N=185) or

‘divorced/widowed’ (N=60). The numbers of lone parents were deemed too small to warrant investigation in a separate category. None of the respondents in this category has a cohabiting partner.³

Attrition from Wave 1 to Wave 2 amounted to 1,428 respondents. Four cases were omitted from the marital status variable as coded here, 1 due to an apparent error in the data (responding both yes and no as regards cohabiting with partner on different questions), 2 due to refusal and 4 responding DK (don’t know).

Alongside this we also utilise indicators of transition into and out of different types of marital status between waves of the study.

- **UC_M (Unmarried-cohabitant → Married status):** respondents who were UC at wave 1 and are recorded as Married at wave 2 (N=392)
- **UC_S (Unmarried-cohabitant → Solo status):** respondents who were UC at wave 1 and are recorded as Solo parents at wave 2 (N=190)
- **S_UM (Solo → UC/Married (cohabiting) status):** respondents who were Solo at wave 1 and are recorded as cohabiting (either UC or Married) at wave 2 (N=192)

Standard set of socio-demographic indicators

Where reference is made throughout the text to a ‘standard set’ of socio-demographic indicators controlled for in various models we refer to the above marital status indicators and the following background characteristics of PCGs, some of which are generally stable and thus drawn from wave 1, and others of which are drawn from W2:

- Age (W2)
- Income (quintile) (W2)
- Education level (W2)
- Number of children in household (W2)
- Experience of ‘crisis pregnancy’ (see below) (W1)
- PCG has disability or chronic illness (W1)
- PCG history of poor health (W1)
- Had complications in pregnancy (W1)

³ There were 159 males in the dataset who are recorded as the Primary Caregiver and all but 7 of these are cohabiting with a partner, i.e. there are 7 male Solo parents and 21 male UC parents (2 refusals on marital status question).

- Family history of poverty (difficulty making ends meet age 16) (W1)
- Rural vs. Urban dweller (W1)
- Native vs. non-native English speaker (W1)
- Feels that they 'don't get enough help' from outside the home (W2)
- Smoked while pregnant (W1)
- Drank alcohol while pregnant (W1)

For some indicators where we have information at both waves it was possible to derive 'change' variables over time and, where these are utilised, explanations and greater detail are given in the text. Other ad hoc controls are included as and when specific models demand, and these are also discussed in greater detail throughout the text.

Crisis Pregnancy

We utilise a measure of crisis pregnancy defined using wave 1 of the GUI data and discussed in greater detail in a previous report in this series for *Treoir*, to explore whether the concept of crisis pregnancy is useful in helping to understand mother and child outcomes (Corrigan, 2013). The concept of crisis pregnancy is specific to the Irish context and is defined in statute as a pregnancy that is "neither planned nor desired by the woman concerned, and which represents a personal crisis for her" (S.I. No. 446, 2001). Respondents were coded as having experienced a crisis pregnancy where they indicated that they had intended to become pregnant 'much later' or had 'never intended' to become pregnant, *and* where they simultaneously reported that they experienced 'some' or a 'great deal' of stress during the pregnancy. This measure categorises 9.2% of the sample as having experienced a crisis pregnancy by this definition.

A wide literature has explored the relationships between pregnancy intention and a range of health and development-related areas for mothers and children. Studies looking at the effect of unintended pregnancy on mothers have found that women with unwanted or unplanned pregnancy: suffer from higher levels of depression and lower levels of happiness during pregnancy (Barber et al., 1999); experience higher levels of stress (Mulder et al., 2002); are more likely to report post-partum depression (Cheng et al., 2009); are more likely to adopt negative parenting behaviours leading to poorer quality relationships with their children in later life (Barber et al., 1999). In Ireland, women experiencing a crisis pregnancy were seen to have higher psychological distress than the general population at the time of pregnancy, as measured using a metric of emotional wellbeing (McBride et al., 2012: 104).

Variables: Outcomes

The report considers a number of outcome variables, some focused on exploiting information concerning change over time in family situations, some focused on new data specific to wave 2 of the GUI study.

We look at change over time as regards certain focal outcomes of interest:

- Transition into **unemployment** at wave 2, having previously been employed at wave 1
- Transition into **improved education** between waves of the GUI study (also referred to as ‘positive educational change’)
- Transition into **employment** by wave 2 having previously been inactive at wave 1

Other models focus on relating wave 1 factors to later outcomes at wave 2, for example we explore the above three outcomes as they were affected by childcare constraints at wave 1.

Where other dependent variables of interest incorporating information pertaining to change over time are utilised the details of these are discussed at relevant points throughout the text. For further detail on the operationalisation of any variable please contact the author.

Social and behavioural difficulties scale (SDQ)

The Strengths and Difficulties Questionnaire (SDQ) was developed by Goodman (Goodman, 1997). This questionnaire measures children’s development in five areas and is used to develop subscales gauging factors such as: how children relate to peers (peer problems), how they behave (conduct), how fearful or easily scared they are (emotional), how agitated or fidgety they are in their behaviour (hyperactivity-inattention), and a ‘strength’ subscale tapping the extent to which they are considerate of other people’s feelings (prosocial). For example, the ‘Peer problems’ subscale focuses on whether the child is rather solitary and tends to play alone. Summing the four ‘deficit’ subscale scores produces a Total Difficulties score. All subscales are measured out of 10, except for ‘peer problems’ which is measured out of 8 points. Higher scores mean more difficulties on this scale.

Child physical abilities at age 3 [motor exercises]

On child physical abilities, GUI contains a number of measures of both gross and fine motor development that were directly assessed by researchers in the field on home visits: “Children

were asked to complete three exercises to demonstrate that they had attained a number of developmental milestones in the area of gross and fine motor development. The two items which were designed to assess gross motor competency was whether the child could stand on one leg for two seconds or more and whether the child could throw a ball in an overhand fashion. Fine motor competencies were assessed by asking the child to draw a straight line after the parent had demonstrated this activity and recording whether or not the child held the pencil in a pincer grip between thumb and forefinger while doing so. These observed items were supplemented by the parent-report items on whether the child could ride a tricycle and manipulate toys with small pieces like lego or jigsaws” (Quail et al., 2013).

Pianta Parent-child relationship scales

The Pianta Child-Parent Relationship Scale – Short Form (Pianta, 1992) – looks at both positive and negative aspects of the parent-child relationship. Caregivers were asked to relate statements about their relationship with the study child on a 5-point scale (from ‘definitely does not apply’ through to ‘definitely applies’). As detailed in GUI report 1: “The *Positive Aspects* subscale includes seven items relating to getting on with the Study Child and parental feelings of effectiveness (e.g. ‘I share an affectionate, warm relationship with my child’). The *Conflicts* subscale comprises eight items on the parent’s perception of difficulties in the relationship with the Study Child (e.g. ‘Dealing with my child drains my energy’) and the latter’s perceived social skills (e.g. ‘My child’s feelings toward me can be unpredictable or change suddenly’)” (Williams et al., 2013: 83). Higher scores on each scale indicate more conflict and more positive aspects in each case.

Parenting style indicators

Measures of parenting styles – in terms of warmth, hostility and consistency – are available in GUI, and these are comparable to similar measures used successfully in the Longitudinal Study of Australian Children (LSAC). Parental warmth refers to the parent’s positive regard towards the child, responsiveness to the child’s interests and feelings, and expressions of approval and support; hostility is indicated by coercion, and feelings of irritation and anger; while consistency in parental behaviour is self-explanatory (Williams et al., 2013). The GUI study used subscales from the same self-report instrument that was developed and implemented by LSAC to assess the three aspects of parenting. The instrument includes “six items each regarding the frequency with which parents displayed warmth and hostility towards the study child, and five items on

consistency in dealing with the child. The score for each scale represents the average of all items on that scale; hence possible scores range between one and five for each. Higher scores for parental warmth indicate greater warmth, and higher scores for parental hostility and consistency indicate more hostility and greater consistency respectively” (Williams et al., 2013: 77).

Stress and depression scores

The GUI summary guide to wave 1 of the infant cohort describes the stress scale to be found in the dataset: “The Parental Stress Scale is a self report scale used to assess both the positive and negative aspects of parenthood. It comprises a Total Parental Stress Score as well as four subscales: Parental Rewards (6 items); Parental Stressors (6 items); Lack of control (3 items); and Parental Satisfaction (3 items)” (Quail et al., 2011: 19). At wave 2, the ‘parental stressors’ subscale was asked of both primary and secondary caregivers (Quail et al., 2013). The stress scale is drawn from the work of Berry and Jones (Berry and Jones, 1995).

On the depression scale: “The Center for Epidemiological Studies Depression Scale (CES-D) is a widely used self-report measure that was developed specifically as a screening instrument for depression in the general population, as opposed to being a diagnostic tool that measures the presence of clinical depression. *Growing Up in Ireland* used the 8-item short version of the CES-D and obtained a total score for both Primary (PCG) and Secondary (SCG) Caregivers” separately (Quail et al., 2013).

Descriptive Statistics

Below, Table A, we list descriptive statistics for the main variables of interest in the analysis that follows. Statistically significant differences between marital statuses, where UC parents and Solo parents are compared to Married parents (the reference category), on *continuous* variables only are highlighted in bold. Differences in educational attainment and income quintile indicators are discussed in the chapter on *Marital status, Family Transitions and Solo parents*. Binary variables take either a value of ‘1’ or ‘0’, with a value of ‘1’ indicating that the characteristic described applies to that respondent. The mean of binary variables should be read as a proportion: e.g. Crisis Pregnancy, in the table below, applies to or characterises the experience of 5% (or .05) of Married parents, 14% of Unmarried-cohabitant parents, and 29% of Solo parents.

Table A: Descriptive statistics by Marital Status W2

	Married			Unmarried cohabitant			Solo			Min	Max
	N	Mean	Std Dev	N	Mean	Std Dev	N	Mean	Std Dev		
<i>Socio-Demographics</i>											
Family transition: UC>M	7140	0.05	0.23	1286	0.00	0.00	1186	0.00	0.00	0	1
Family transition: UC>S	7140	0.00	0.00	1286	0.00	0.00	1186	0.16	0.37	0	1
Family transition: S>UM	7140	0.01	0.09	1286	0.11	0.31	1186	0.00	0.00	0	1
Age of PCG	7205	35.64	4.46	1296	31.08	5.64	1198	29.68	6.52	18	56
Num. children in h'hd	7205	1.47	1.06	1296	1.02	1.01	1198	0.90	1.14	0	10
Crisis pregnancy	6979	0.05	0.21	1265	0.14	0.35	1141	0.29	0.45	0	1
Disability of PCG	7204	0.11	0.31	1295	0.12	0.33	1198	0.14	0.35	0	1
Poor health generally for PCG	7205	0.05	0.23	1296	0.07	0.26	1198	0.10	0.31	0	1
Complications in pregnancy	7201	0.36	0.48	1294	0.42	0.49	1195	0.44	0.50	0	1
Family history of poverty	7189	0.19	0.39	1293	0.21	0.41	1190	0.23	0.42	0	1
Rural dweller (REF: Urban)	7177	0.59	0.49	1290	0.54	0.50	1195	0.45	0.50	0	1
Native English Speaker	7204	0.83	0.37	1295	0.85	0.36	1198	0.84	0.37	0	1
Doesn't get enough help outside home	7198	0.12	0.33	1296	0.10	0.31	1198	0.12	0.33	0	1
Smoked while pregnant	6990	0.10	0.30	1266	0.32	0.47	1145	0.39	0.49	0	1
Drank alcohol while preg.	6990	0.22	0.41	1266	0.18	0.38	1146	0.18	0.38	0	1

	Married		Unmarried cohabitant		Solo						
<i>Parent characteristics</i>											
Stress at wave 2	7151	12.07	4.02	1290	12.56	4.26	1189	13.85	4.57	6	30
Depression score, wave 2	7185	1.99	3.08	1291	2.82	3.86	1196	3.81	4.39	0	24
Pianta: positive aspects score	7183	33.84	1.87	1291	33.77	2.05	1198	33.58	2.34	12	35
Pianta: Conflict score	7175	15.26	5.21	1290	16.15	5.58	1195	16.67	5.91	8	40
Parenting: warmth	7204	4.74	0.37	1296	4.75	0.36	1198	4.76	0.37	1.6	5
Parenting: hostile	7201	1.78	0.49	1296	1.82	0.50	1197	1.82	0.51	1	4.3
Parenting: consistent	7200	4.04	0.70	1295	3.89	0.74	1198	3.85	0.80	1	5
<i>Employment</i>											
Equalised hhd income W2	6815	20,081	11,167	1,236	15,221	8,058	1,135	11,609	5,583	857	251,256
Working W2 (1,0)	7205	0.59	0.49	1296	0.53	0.50	1198	0.35	0.48	0	1
Didn't take Paid Maternity leave (1,0)	3507	0.10	0.30	610	0.12	0.33	349	0.20	0.40	0	1
Didn't take Unpaid Maternity leave (1,0)	3496	0.52	0.50	609	0.65	0.48	349	0.74	0.44	0	1
Didn't take Annual leave after birth (1,0)	3497	0.51	0.50	608	0.66	0.47	349	0.72	0.45	0	1
Moved to Unemployment W1->W2 (1,0)	4723	0.03	0.17	791	0.05	0.22	505	0.08	0.27	0	1
Transitioned into Work W1->W2 (1,0)	7201	0.08	0.27	1296	0.09	0.28	1198	0.11	0.31	0	1
Improved education W1->W2 (1,0)	7122	0.13	0.34	1282	0.15	0.35	1188	0.19	0.39	0	1
OPFP recipient at W2 (1,0)	7205	0.00	0.02	1296	0.04	0.20	1198	0.60	0.49	0	1
<i>Childcare</i>											
Prevented looking for job (1,0)	7205	0.06	0.23	1296	0.09	0.29	1198	0.17	0.38	0	1
Made leave job (1,0)	7205	0.05	0.23	1296	0.08	0.27	1198	0.12	0.32	0	1
Prevented study/training (1,0)	7205	0.07	0.25	1296	0.09	0.28	1198	0.15	0.35	0	1
Restricted hours of work/study (1,0)	7205	0.20	0.40	1296	0.24	0.42	1198	0.26	0.44	0	1
Grandparent babysits regularly (1,0)	6537	0.25	0.43	1163	0.34	0.47	1038	0.45	0.50	0	1

	Married		Unmarried cohabitant		Solo						
<i>Child characteristics</i>											
Socio-behavioural difficulties (SDQ)	7200	7.33	4.37	1296	8.63	4.67	1198	9.58	4.96	0	32
Can stand on one leg (1,0)	7139	0.87	0.33	1276	0.87	0.34	1184	0.84	0.37	0	1
Can throw ball overhand (1,0)	7170	0.95	0.22	1288	0.95	0.22	1190	0.93	0.25	0	1
Can copy vertical line (1,0)	7164	0.93	0.26	1288	0.93	0.26	1192	0.89	0.31	0	1
Can hold pencil in correct grip (1,0)	7164	0.52	0.50	1289	0.55	0.50	1192	0.49	0.50	0	1
Baby's health declined W1->W2 (1,0)	7205	0.17	0.37	1296	0.19	0.39	1198	0.24	0.43	0	1
Child is overweight (1,0)	7042	0.18	0.38	1252	0.19	0.39	1158	0.21	0.41	0	1
Minutes of TV watched per day (mins)	7197	105.9	67.8	1296	119.4	77.7	1198	125.6	80.7	0	1
Gestational age at birth (wks)	7184	39.5	2.0	1289	39.6	2.2	1192	39.5	2.2	26	46
Birth weight (grams)	7119	3501.7	598.8	1280	3445.8	609.4	1184	3367.6	568.8	510	8000

Note: significant differences in *continuous* variables between Married status (Ref. Cat) and other statuses at $p < .05$ denoted by **bold** text, in bivariate population-weighted (W2) regressions; OPFP: one-parent family payment

I. Marital Status, Family transitions and Solo parents

I.1. Literature on Marital status and family transitions

Gennetian has identified four broad theoretical paradigms that have been used to explain the impact of family structure on parent and child outcomes including stress theory (Gennetian, 2005). This perspective hypothesizes that changes, such as divorce, remarriage, relocation or unemployment, redefine family roles (Gennetian, 2005). The other three perspectives include: 1) Economic hardship theory, which posits that a lower level of resources in certain family types reduces children's attainment; 2) Role model theory proposes that different family structures provide different role models that then shape children's behaviour and values; 3) Social control theory posits that differences in how children's behaviour is monitored lead to different outcomes (Gennetian, 2005).

On the role of stress, evidence has shown that mothers who exit cohabitant relationships with biological fathers or enter co-residential relationships with non-biological fathers reported higher levels of parenting stress than mothers in stable cohabitant relationships (Cooper et al., 2009). Also, mothers who enter cohabitant relationships with biological fathers report lower levels of parenting stress than mothers who remain single (Cooper et al., 2009). Family transitions, stress, parent outcomes and child outcomes are often related in a complex and interdependent manner. Studies have shown that maternal stress is implicated in children's behavioural problems, suggesting that measures aimed at reducing maternal stress may improve child well-being (Osborne and McLanahan, 2007). Likewise, evidence shows that mother's psychological functioning and the quality of the home environment are particularly important for children's behaviour (Carlson and Corcoran, 2001). In general, maternal stress has been seen to be associated with sub-optimal parenting and, as a result, is correlated with negative outcomes for children in terms of social, behavioural and emotional competences (Anthony et al., 2005; Cooper et al., 2009; Thompson Jr et al., 1993).

One major source of maternal stress includes low socioeconomic status (Orr et al., 1989) and this, in itself, is usually correlated with marital status (Fuchs, 2004). Indeed, as noted, studies have

demonstrated that a major part of the effect of family structure on child outcomes has to do with availability of economic resources (Gennetian, 2005; Thomson et al., 1994). Mothers' resources account for most of the associations between transitions and parenting stress, and mothers with high levels of education are less affected by family type transitions than mothers with lower levels of education (Cooper et al., 2009). Economic constraints are likely to impact on the decisions that parents make in terms of their engagement with the labour market and with childcare arrangements. Poor single mothers may choose to forego formal childcare arrangements and thus spend more time caring for their child themselves than do Married or Unmarried-cohabitant parents, as evidence from the US and UK suggests (Kalenkoski et al., 2007).

A feature of the literature in the Irish context has concerned difficulties experienced by lone mothers in terms of accessing employment and accessing appropriate childcare arrangements that would allow them to take up employment (McCashin, 1996). Attitudes and aspirations of lone mothers towards work were seen to be generally positive, a finding that more recent research has reiterated (McCashin, 1996; Murphy et al., 2008). Affordability constraints are also likely to impact on the quality of childcare taken up by mothers (Waldfogel, 2002). Constrained decisions come with implications for mother and child where, for example, it has been shown that the quality of childcare impacts directly on child cognitive development and outcomes (Burchinal et al., 2000). The role of family members becomes important where formal childcare is not an option and studies have found that, for children in poverty, grandmother care was one of the most beneficial arrangements for cognitive development (Baydar and Brooks-Gunn, 1991). A study in Ireland found that child wellbeing was mostly influenced by behavioural issues around parent-child interaction, family income, father supportiveness and mother characteristics, and that once these were accounted for family type itself had little effect (McKeown et al., 2003).

In some family structure types it may be necessary for mothers to seek employment so as to overcome economic constraints. Whether and when mothers choose to do so also has implications for their children. Research shows that maternal employment by the ninth (9th) month was found to be linked to lower school readiness scores at 36 months⁴; these effects were more pronounced when mothers were working 30 hours or more per week and the results remained robust even controlling for quality of childcare and quality of home environment (J. Brooks-Gunn et al., 2002). Others have found that employment in the first 12 months of the child's life had detrimental effects

⁴ Bracken School Readiness Assessment: an individual cognitive test in the US for children from pre-kindergarten to the second grade (7/8 years old).

on the cognitive and behavioural development of all children regardless of gender or poverty status (Baydar and Brooks-Gunn, 1991). Similarly, in the US, first-year maternal employment was seen to be associated with lower vocabulary scores for White children (Berger et al., 2008).⁵

Family structure cannot be seen simply as a static construct defined by presence/absence of marriage and/or presence/absence of father. Even in single-parent families there may be a continuum of contact with the other parent (usually the father), ranging from frequent social contact with the child and forthcoming financial support to complete absence of any contact. It has been shown that children who grow up apart from their biological fathers do less well, on average, than children who grow up with both biological parents; they are less likely to finish high school and attend college, less likely to find and keep a steady job, and more likely to become teen mothers (McLanahan, 1999).

Others have found that frequency of visitation and closeness of relationship to father showed no consistent influence on measures of child well-being including academic difficulty, problem behaviour and psychological distress, though these same authors found that paternal economic support did reduce the likelihood of problem behaviour (Furstenberg et al., 1987). In a meta-analysis of 63 studies dealing with non-resident fathers and children's well-being it was seen that fathers' payment of child support was positively associated with measures of child well-being; meanwhile the frequency of non-resident father contact was not seen to be related to child outcomes in general (Amato and Gilbreth, 1999). Others find limited evidence that *either* father visitation or payment of child support have any positive benefits for child wellbeing (King, 1994). Simple contact may not be sufficient then, and some studies found the *quality* of parenting by non-residential fathers to be the determinative factor, with evidence showing an association of parenting quality with children's externalising problems (Simons et al., 1994).

Contact with father also has clear implications for mothers themselves. Unmarried parents reported more mental health and behavioural problems than married parents, and unmarried parents whose relationships ended before the birth of their child reported more impairment compared with other groups of unmarried parents (DeKlyen et al., 2006). Single mothers have been seen to be twice as likely as their married counterparts to experience financial hardship and also to suffer from poor self-esteem and lack of support, as a result of which their propensities towards depression were greater (Brown and Moran, 1997).

⁵ But not Black or Hispanic children.

Depressive symptoms were associated with the quality of the mother-nonresident father relationship and this relationship with the frequency of non-resident fathers' contacts with their children (Jackson and Scheines, 2005). In other words, more contact between non-resident fathers and their children predicted more adequate maternal parenting, which in turn was associated directly with the child's subsequent outcomes (Jackson and Scheines, 2005). How parents cooperate was also important, with one study concluding that parents' ability to work together in rearing their common child across households helps keep non-resident fathers connected to their children and that programs aimed at improving parents' ability to communicate may have benefits for children irrespective of whether the parents' romantic relationship remains intact (Carlson et al., 2008).

Policy context in Ireland

In January 2014 the Child and Family agency (see *Tusla.ie* for more information; all information in this section drawn from this website) became an independent legal entity, comprising HSE Children & Family Services, Family Support Agency and the National Educational Welfare Board as well as incorporating some psychological services and a range of services responding to domestic, sexual and gender based violence. The Agency is now the dedicated State agency responsible for improving wellbeing and outcomes for children. It constitutes the most comprehensive reform of child protection, early intervention and family support services ever undertaken in Ireland, bringing together 4,000 staff and an operational budget of approximately €600m.

Under the Child and Family Act, 2013 the Child and Family Agency's remit involves:

- supporting and promoting the development, welfare and protection of children, and the effective functioning of families;
- offering care and protection for children in circumstances where their parents have not been able to, or are unlikely to, provide the care that a child needs. In order to discharge these responsibilities, the Agency is required to maintain and develop the services needed in order to deliver these supports to children and families, and provide certain services for the psychological welfare of children and their families;
- responsibility for ensuring that every child in the State attends school or otherwise receives an education, and for providing education welfare services to support and monitor children's attendance, participation and retention in education;

- ensuring that the best interests of the child guides all decisions affecting individual children;
- consulting children and families so that they help to shape the agency's policies and services;
- strengthening interagency co-operation to ensure seamless services responsive to needs;
- undertaking research relating to its functions, and providing information and advice to the Minister regarding those functions; and
- commissioning services relating to the provision of child and family services

Other recent policy changes relevant to families, specifically single-parent families, concern changes to tax credits. The One-Parent Family Credit (OPFC) (which was available to both parents where the child lived with each of them for part of the year) was abolished on January 1st 2014 and a new tax credit, the Single Person Child Carer Credit (SPCCC), which imposed more demanding eligibility conditions and operational rules, was introduced. The SPCCC can be granted to a primary claimant who is caring for a child/children on their own for the whole or greater part of the year (more than 6 months). A primary claimant can surrender his or her entitlement to the credit in favour of a secondary claimant, provided the child (or children) lives with that person for more than 100 days in a year and the person meets all the other qualifying conditions. The main difference between the Single Person Child Carer Credit (SPCCC) and the One-Parent Family Credit (OPFC) is that both parents could claim the OPFC if the child or children lived with each of them for part of the year whereas only one parent can claim the SPCCC in a tax year.

The new requirement that the child live with the secondary claimant for more than 100 days in a year presents a serious obstacle to 'primary claimants' (i.e. single parents themselves who may not be working) surrendering their entitlement to the tax credit to a secondary claimant, e.g. the non-resident father (NRF) of their child. Not being able to avail of this tax credit will have material implications for NRF earnings (where the OPFC was being claimed prior to 1st January 2014 and the NRF is now not eligible for SPCCC) and thus for maintenance payments paid for the upkeep of their children. The SPCCC amounts to €1,650 in 2014 and also entails a €4,000 extension in the standard tax rate band, increasing it from €32,800 to €36,800.⁶

⁶ All information on tax credits taken from this site (accessed March 2014): http://www.citizensinformation.ie/en/money_and_tax/tax/income_tax_credits_and_reliefs/one_parent_family_tax_credits_and_reliefs.html

Aims

This chapter has a number of aims and is concerned not only to understand and describe the structure of, and variation within, different types of family organisation in Ireland, but also to exploit valuable time-relevant information in the GUI study and to assess the incidence of change in family types and potential effects of such transitions on key indicators. Given the distinct challenges they face, we devote a section here to focusing on variation within the Solo parent grouping, aimed at broadening and deepening our understanding of the lived experience of Solo parenthood for parents of infant children in Ireland and also aimed at advancing a nuanced picture of the challenges Solo parents, or specific types of Solo parents, face. The chapter aims to:

- explore the characteristics of those in the GUI study who undergo certain types of family transition, i.e. from Solo parenthood into cohabitancy, from Unmarried-cohabitancy into Marriage, or from Unmarried-cohabitant into Solo parenthood over time
- explore whether such transitions impact on parent and child related outcomes
- explore the structure of the data on Solo parents and the extent to which distinct subgroups of Solo parents, with distinct characteristics and facing distinct challenges, can be identified

The specific impacts of family type transitions that we explore at this point are:

- stress of the PCG
- depression scores of the PCG
- parenting style
- parent-child relationships
- child socio-behavioural difficulties

However, in chapters that do not focus specifically on marital status and family transitions it will be seen that indicators of family type transition are deployed in all or most statistical models and so their impact will be assessed and discussed with reference to the specific context of later chapters as appropriate.

I.2. Results

Part I

Marital Status at wave 2

As discussed in the methodology section this report employs the tripartite scheme used by Kiernan to distinguish marital status categories as follows (Kiernan, 2005) :

- **Married:** those who were 'ever married' and currently cohabit with a partner
- **Unmarried-cohabitant (UC):** this category comprises only those who indicated they were 'never married' and all of these respondents have cohabiting partners
- **Solo:** this group combines single parents, none of whom cohabits with a partner, whether they were 'never married' or whether they are lone parents who are now separated, divorced or widowed

Table 1 shows the proportion of respondents reporting that the household had increased in size since the time of their first interview. About 45% of Married/Unmarried-cohabitant parents and 20% of Solo parents reported that someone had joined the household since time of last interview. Of this group (N=3574), 6% of Marrieds, 17% of UCs and 9% of Solos reported that *more than one person* had joined the household. Over 80% of these additions to the household were siblings born since the time of the first interview (almost entirely 'full' siblings though with small numbers of half-siblings). Of these new births, the vast majority (approx. 85%) were born to Married parents.

Table 1: "Has anyone else joined the household since wave 1?"

	<i>Married</i>	<i>Unmarried Cohabitant</i>	<i>Solo</i>	<i>Total</i>
<i>Yes</i>	39.3	45	19.5	37
<i>No</i>	60.8	55	80.5	63
<i>Total</i>	100	100	100	100

Note: W2 marital status; population weighted graph; highest row % highlighted

Using the three-category marital status variable we explore transition into and out of different family types over time. Comparing transitions into different types of family arrangement from W1 to W2 the data show (see Table 1.1 below):

- 97% of those Married at W1 remain so at W2, with 2% moving into the Solo category
- 66% of those who were Unmarried-cohabitants at W1 remained in this category at W2, while 23% were Married by W2 and 11% had become Solo parents
- 82% of Solo parents at W1 remain Solo parents at W2, while 5% moved into the Married category and 13% transitioned into Unmarried-cohabitancy
- Overall, the proportion of households reporting transition into different types of family arrangement was low, just under 1 in 10 reported a change in family type status⁷

Table 1.1: Change over time in marital status, W1 to W2

<i>Wave1</i>	<i>Wave 2</i>			<i>Total%</i>	<i>Total N</i>
	<i>Married</i>	<i>Unmarried Cohabitant</i>	<i>Solo</i>		
<i>Married</i>	97	0.3	2	100	6848
<i>Unmarried-Cohabitant</i>	23	66	11	100	1707
<i>Solo</i>	5	13	82	100	1057
<i>Total %</i>	74	11.4	14.4	100	-
<i>Total N</i>	7140	1286	1186	-	9612

Note: population weighted graph

There are differences in , for example, the income composition and the educational profile of different marital status groupings by waves of the GUI study, see Fig. 1.1. These can partly be accounted for by flows in and out of different marital status categories over time, however they also reflect real changes in education and income levels. The income graphs shows that more Unmarried-cohabitant parents are in lower income quintiles at wave 2 than was the case at wave 1. Solo parents are heavily concentrated in the lower income quintiles at both waves. The education profile of Solo parents is poor but shows improvement over time.

⁷ 22 respondents claimed to transition from being Married to being Unmarried-cohabitants (i.e. never married but cohabiting); this can most likely be ascribed to random errors in the data, where responses were incorrectly given or incorrectly recorded

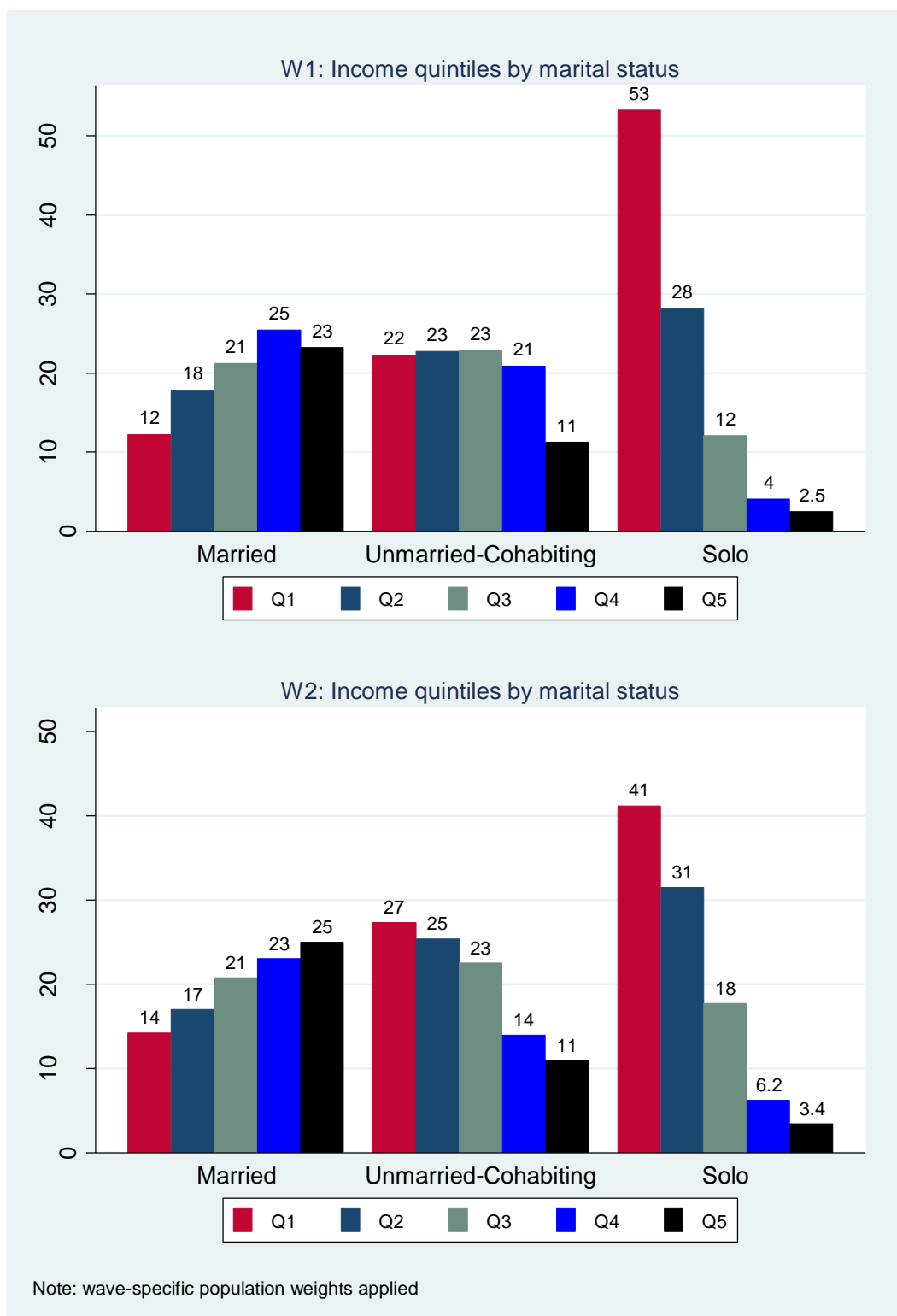


Fig. 1.1

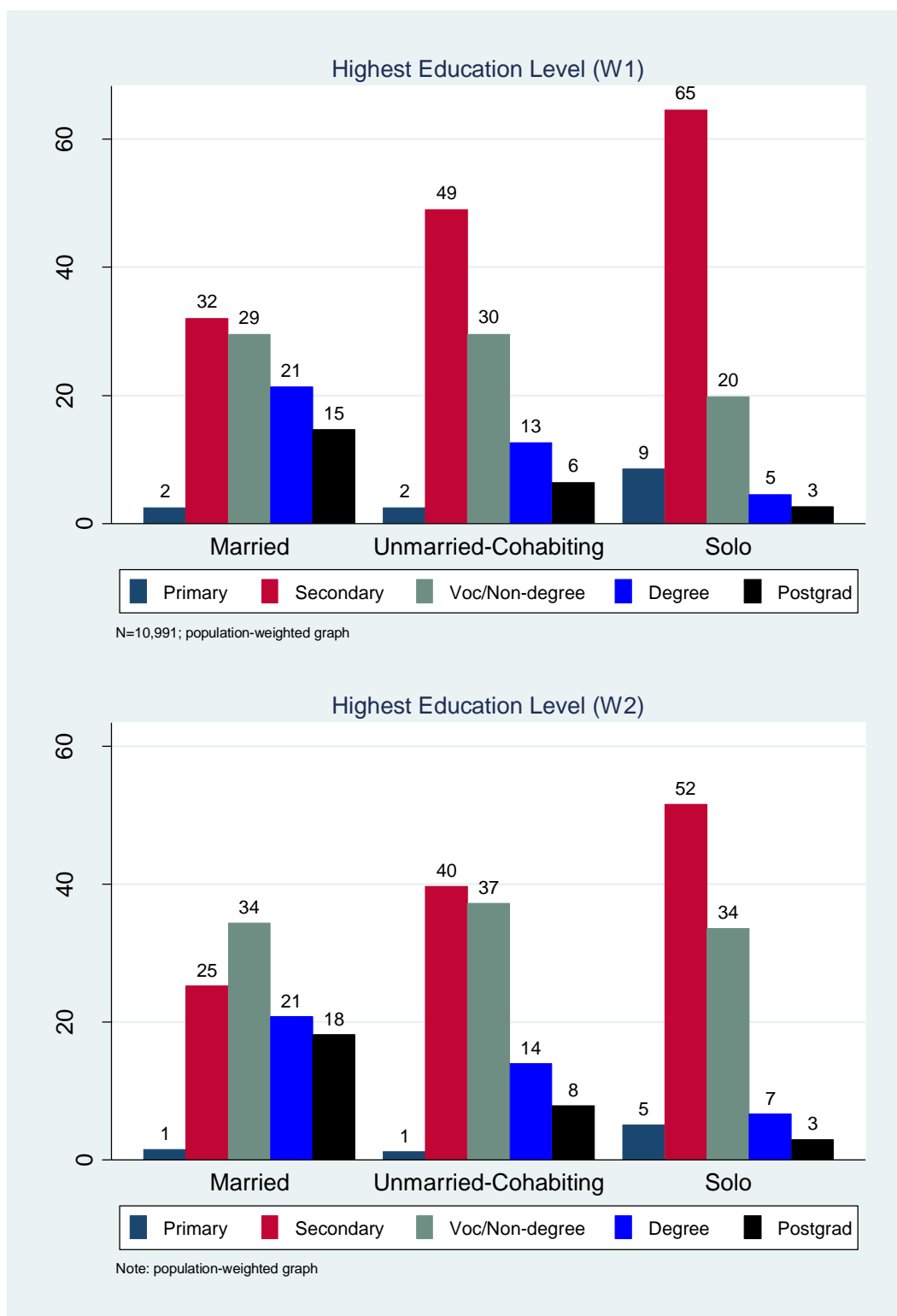


Fig. 1.2

Accounting for transitions between marital status: Unmarried-cohabitant to Married

Looking to marital status transition reveals a number of characteristics for those who transitioned from an Unmarried-cohabitant relationship into a Married relationship. In this model we constrain the sample to those who were UC at wave 1. All of the respondents we refer to in this model were Unmarried-cohabitants at wave 1. We consider two models, with the second focusing only on those parents who were economically active.

Model 1

- **More likely to make this transition:**

Education was weakly related to this type of transition ($p < .10$): those who had the most basic level of education were three times more likely than those with secondary education to transition into marriage; those with degree level or higher education were also more likely to transition into marriage than those with only secondary education (1.6-1.7 times);

Couples who found it easier to *make ends meet* (6 pt scale, from easy to difficult) were significantly more likely to transition to marriage

- **Less likely to make this transition:**

Income: those in the lowest two quintiles were about half as likely to transition into marriage from UC status than those in the highest quintile;

Perhaps unsurprisingly, those in an *unhappy relationship*⁸ at wave 1 were only about half as likely to have transitioned into marriage by wave 2 ($p < .10$)

- **Notes:** the model also controls for other stressors, economic or otherwise, and relevant factors which may impact on marital status transitions, though these showed no significant associations, controlling for the other factors in the model; these factors included changes in the respondents life situation such as: whether there was a decline in the *study child's health* between waves of the study, as reported by the PCG; whether the *number of children in the household increased* between waves; whether the *PCG improved their level of education* between waves

Model 2, economically active parents: constraining the sample only to those who were economically active (i.e. working or unemployed but actively seeking work⁹) returned similar results

⁸ Binary variable coded '1' if overall happiness with relationship was reported to be less than 'happy'.

as above and allows for inclusion of a variable testing the effect of transition from work into unemployment between waves: however, while *transition into unemployment* predicted a lower likelihood of transition into marriage the effect was not significant. Some other variables attain weak significance ($p < .10$) in this 'economically active' specification:

- **More likely to transition:** an *increase in the number of children* predicts a higher likelihood of transition into marriage;
- **Less likely to transition:** a *decline in the study child's health* between waves predicts a lower likelihood of transition into marriage; *older parents* among the economically active were also significantly less likely to transition from UC status to marriage

Accounting for transitions between marital status types: Unmarried-cohabitant to Solo

We look next at the characteristics of those who transitioned from UC status to Solo parenthood.

- **More likely to make this transition:** those in an unhappy relationship at W1 were 1.8 times more likely to have transitioned into Solo parenthood by W2 ($p < .10$)
- **Less likely to make this transition:** age was negatively correlated, i.e. older parents were less likely to make this transition; an increase in the number of children in the household between waves also predicted a significantly lower likelihood that parents would make such a transition; rural dwellers were about half as likely as urban dwellers to make this transition

Model 2, economically active parents: the characteristics of those who transitioned into Solo parenthood from Unmarried-cohabitancy are different when we constrain the sample to look only at the economically active:

- **Non-significant:** *Age* and *relationship happiness* are not significantly associated with transition into Solo parenthood among the economically active, nor is there a rural/urban distinction; transition into unemployment has no significant association with this type of marital status transition
- **Less likely to transition:** *Disability*, or an *increase in the number of children* in the household are significantly associated with a lower likelihood of transition into Solo parenthood from UC parenthood among the economically active

⁹ See the 4th, 5th and 6th columns in the associated Appendix table.

Accounting for transitions between marital status types: Solo to UC or Marriage

Looking to those Solo parents who transition into a cohabiting relationship, either married or unmarried, we see the following associated characteristics:

- **Higher likelihood of transition:** an increase in the number of children in the household between waves significantly predicts a much higher likelihood of also transitioning into a cohabiting relationship
- **Lower likelihood of transition:** those who had *complications in pregnancy*, or those who experienced *crisis pregnancy* ($p < .10$) are significantly less likely to have transitioned into a cohabiting relationship between waves of the study; there is also some evidence that the *less well-off* are less likely to make this transition
- **Model 2:** results are substantively the same for economically active Solo parents, however the number of cases in this model is quite small ($N=309$); the crisis pregnancy indicator is not significant in this specification

1.3. Impacts of Family Type Transitions: Parental Stress and Depression scores

Looking next to differences in key indicators of parent and child wellbeing by the type of family transition undergone we see some differences in **stress and depression scores** of the primary caregiver.

Transition from Unmarried-cohabitant → Solo parenthood

The top bar chart in Fig. 1.3 indicates a higher mean **depression** score for the group that moved into Solo parenthood from Unmarried-cohabitant parenthood.

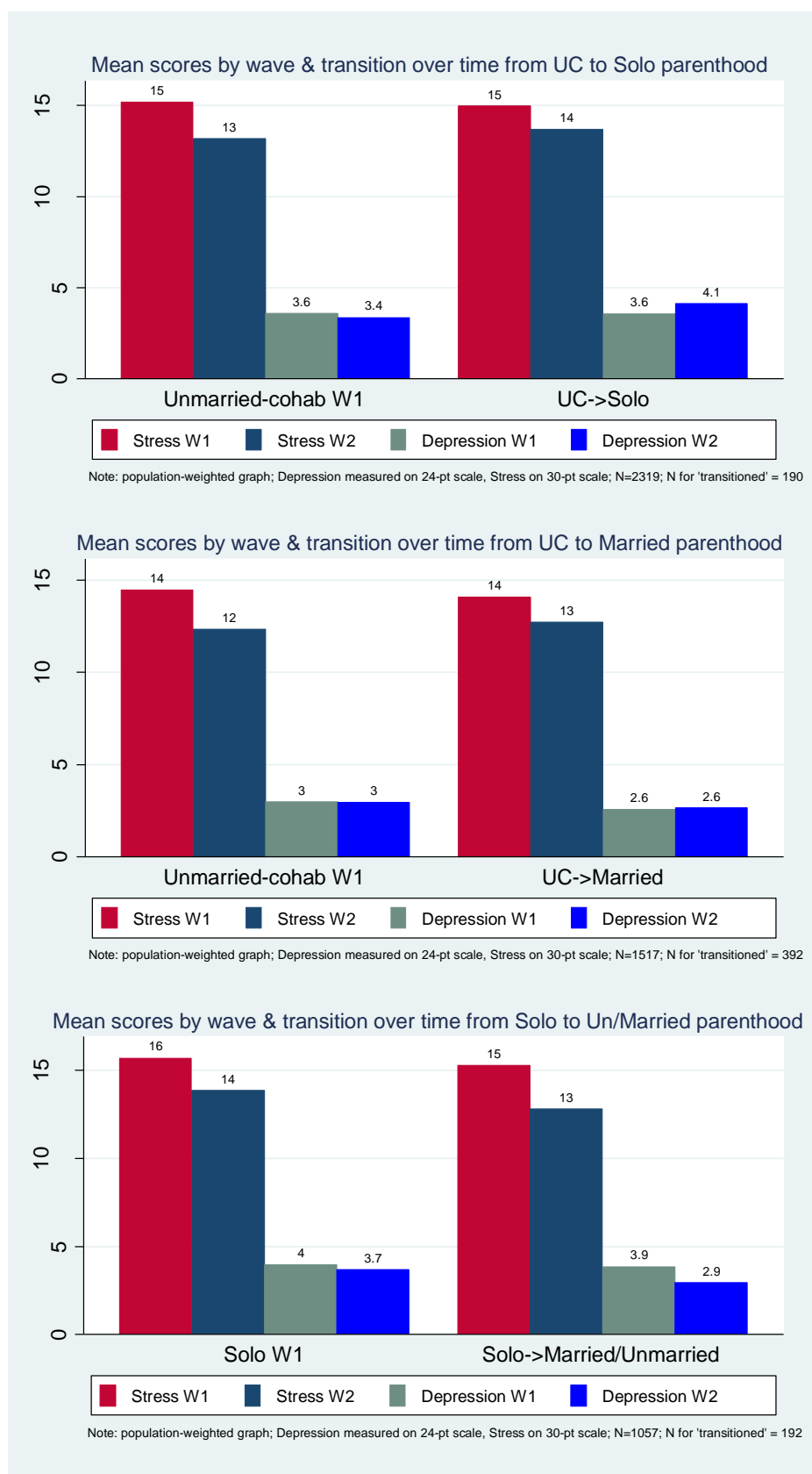


Fig 1.3

Significance tests confirm this, showing that the group that transitioned from UC parenthood into Solo parenthood over time had a depression score at wave 2 that was 0.8 units higher though this was only weakly significant ($p < .10$) than UC parents who had not experienced such a transition.¹⁰ Though the mean **stress** score for the group that transitioned to Solo parenthood was 0.5 points higher the difference was not significant.

Looking to *change over time* in mean **depression** score the transitioning group registered a change that was higher by 0.85 units than UC parents who had not made such a transition ($p < .10$). Looking to *change over time* in mean **stress** scores, the data show that these scores declined over time for both groups but the decline was smaller for the group transitioning into Solo parenthood; however change in stress scores did not vary significantly across groups.

Transition from Unmarried-cohabitant → Married parenthood

The middle chart shows slight differences in **depression** scores between UC parents and those who transitioned from UC parenthood into Married parenthood, with the latter group having lower scores, though both groups started from different baselines in wave 1. Those who transitioned into Married parenthood had a mean depression score 0.3 units lower than UC parents who did not make this transition, though this difference was not significant. There was no significant difference in *change over time* in depression score between these two groups.

There was no significant difference in mean **stress** scores at wave 2 between the groups though there was a significant difference ($p = .01$) between groups in terms of *change in mean scores over time*. Stress declined for both groups, but the reduction in stress was 0.8 points less (on the 30-pt stress scale) for the group that transitioned into Married parenthood ($p < .05$).

Significant differences discussed here will be tested controlling for other factors and determinants of stress and depression later in this report in the chapter dealing with *Parents' Health*. To anticipate those results, it is seen that transition into Marriage from Unmarried-cohabitant status is associated with an increase over time in depression scores even controlling for other determinants of

¹⁰ Bivariate regressions employing population weights were used to test for significance; equivalent to t-tests but using weights.

depression; this transition type is also weakly associated ($p < .10$) with higher depression scores at wave 2 (cross-sectional analysis).¹¹

Transition from Solo → Married/Unmarried-cohabitant parenthood

In the bottom chart in the figure we look to those respondents who were Solo parents at wave 1 but who transitioned into either Married or Unmarried-cohabitant parenthood by wave 2. We combine these two groups as the numbers transitioning into marriage alone are too small to merit specific consideration. **Depression** scores at wave 2 were 0.7 points lower for Solo parents who had transitioned into another marital status compared to those who had remained Solo parents ($p < .10$). **Stress** scores were also just over 1 point lower at wave 2 for those who had experienced marital status transition since wave 1 ($p = .01$). Both of these differences were statistically significant in bivariate regressions. However there was no significant difference between groups in terms of change in depression score or change in stress score over time. We explore these differences controlling for other relevant factors later in the report.¹²

¹¹ Dependent variable was a categorical measure of change over time in depression scores comparing those in the 'increased score' category to those experiencing 'no change' by means of multinomial logistic regression.

¹² To anticipate those findings, there is no significant difference in change over time in stress or depression scores between those who transitioned into cohabitancy from Solo parenthood and those who did not.

I.4. Impacts of Family Type Transitions: Children

Graphs exploring the relationship of different types of marital status transition to children's social and emotional difficulties at age 3 as measured by the **SDQ scale** show very little variation between comparison groups. Children of Unmarried-cohabitant parents who transitioned into Solo parenthood (top graph, Fig. 1.4) appear to have slightly higher total social difficulties (0.4 points higher) for instance. However, significance tests reveal there to be no significant differences in total SDQ scores between any of the groups that experienced transitions to a new marital status and their baseline comparator groups.

The data allow us to look at the quality of the parent-child relationship as measured by **Pianta scales** (Pianta, 1992).

Exploring parenting style as measured in terms of **parenting warmth, consistency and hostility** shows no interesting or significant variation across different types of marital status transition.

We return to these and other outcomes, exploring them in greater detail and with a full set of controls, later in this report.

Fig. 1.4 overleaf:

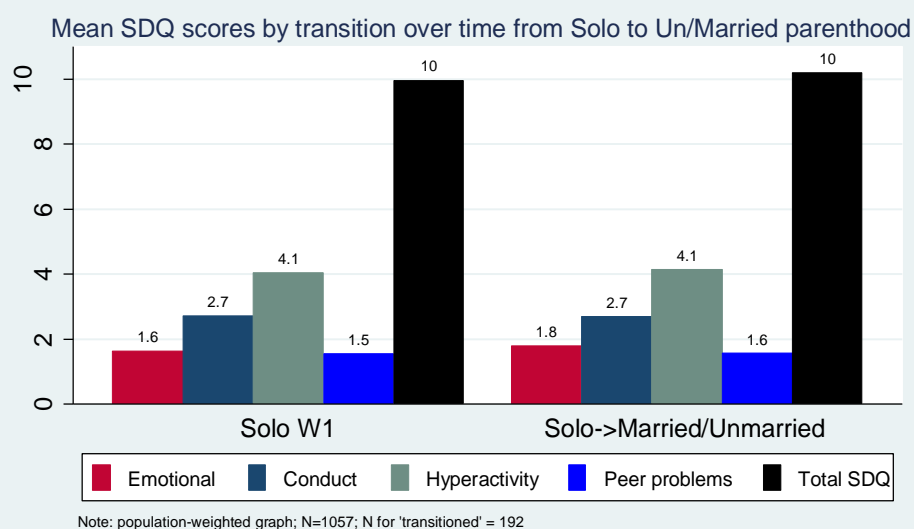
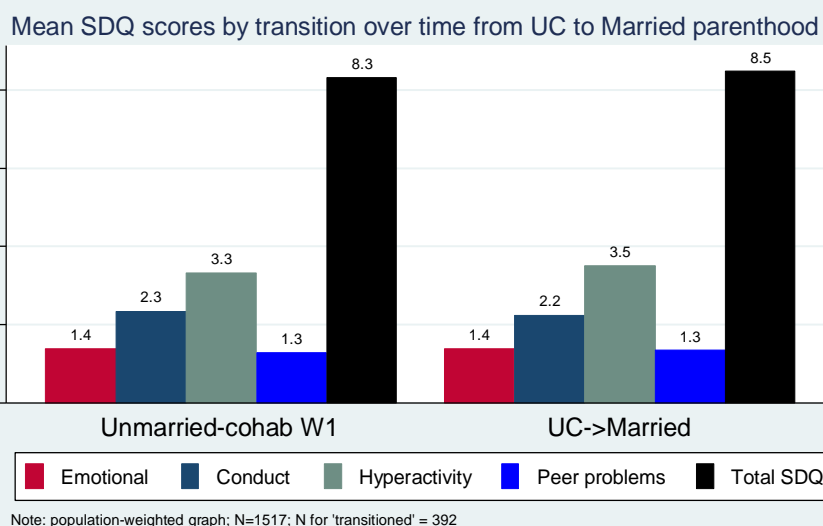
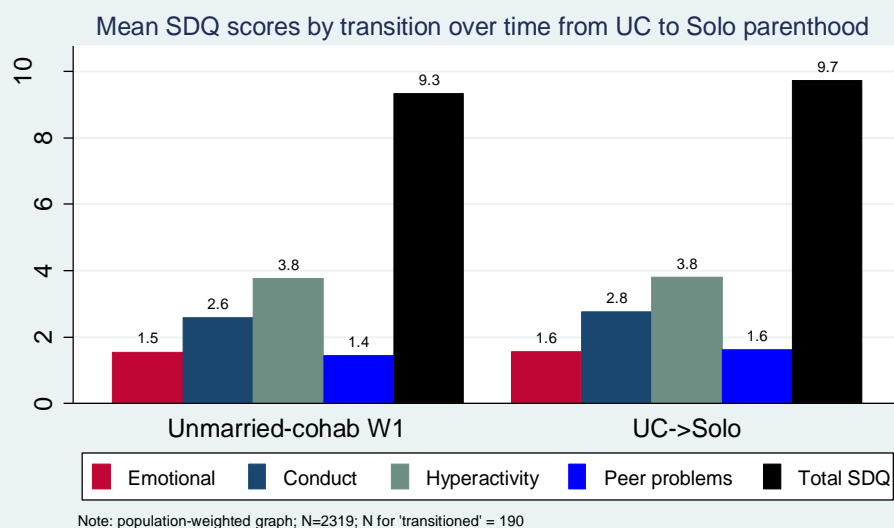


Fig 1.4

I.5. Exploring the group structure of Solo parents in Ireland

Cluster analysis

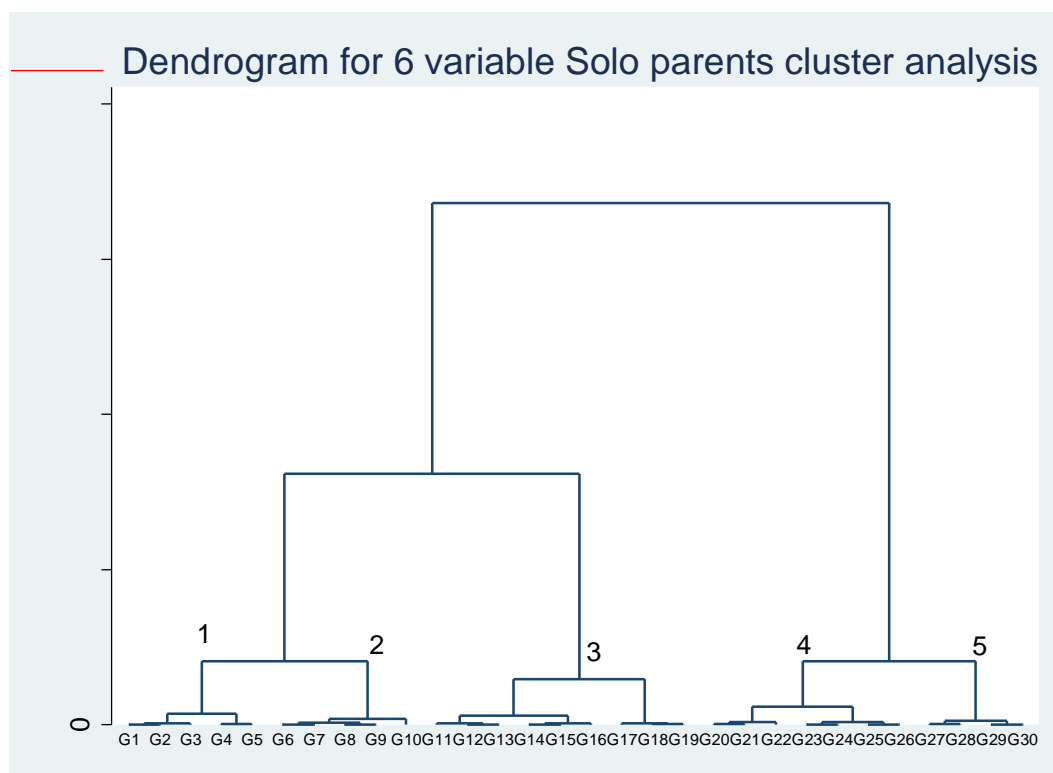
To explore the composition of the group of Solo parents at wave 2 we perform a cluster analysis using a set of six key variables to look for similarities and natural clusterings in the data. Quite simply, this is an exploratory data analysis technique that sets out to find groups within the data that are similar on a number of characteristics. Using a hierarchical agglomerative linkage mechanism¹³ we link together cases that are similar to build up groups. Interested readers can find accessible introductions to cluster analysis by Bailey and other authors (Aldenderfer and Blashfield, 1984; Bailey, 1994). The variables (all wave 2) we take as the characteristics of interest are:

- education level
- equivalised household income
- age of PCG
- number of children in the household (other than the study child)
- whether the PCG is working
- an indicator asking whether the mother ever cohabited with or was married to the NRF

Performing this cluster analysis on the approximately 1,000 Solo parents for whom we have wave 2 data identifies six groups, however two of the groups have total N less than 50 combined (one group only had 6 cases) so we amalgamate these into a single group. A dendrogram or cluster tree indicating the results of the cluster analysis and similarities between groups can be seen in Fig. 1.5.

The figure shows the cut-point on the tree (the red line) where we split the mass of Solo parents into five different groups. At group 3 we see the two small branches, one of which encompassed only six cases, which were amalgamated into one group. The hierarchical nature of the dendrogram makes clear the overarching group similarities and dissimilarities; the higher the branching-off point on the vertical axis, the more dissimilar the groups are. For instance, groups 1 and 2 are more closely related to each other than groups 1 and 5. Likewise, groups 4 and 5 share an affinity and are quite dissimilar to the other three groups.

¹³ Ward's linkage, in this case, which combines cases to form groups on the basis of reduction in variance; utilising an alternative mechanism (average-linkage) produces a highly similar cluster structure, substantively the same as the structure produced here. For more information on clustering methods see the Stata Base Reference Manual for a useful discussion (StataCorp, 2009a: 91).

**Fig. 1.5**

Using these five grouping variables we look at differences in group means across a range of variables of interest and use this information to paint a picture of the characteristic membership of each group. Table 1.2 lists each group along with an illustrative name given to each group on the basis of their characteristics; the table also lists the total N for each group identified by the cluster analysis and gives a population-weighted proportion indicating the relative size of each subgroup within the larger 'Solo parent' grouping.

Table 1.2: Subgroups of Solo Parent population

<i>Group No.</i>	<i>Illustrative Group Name</i>	<i>Proportion (%) of 'Solo' parent grouping</i>	<i>Unweighted N</i>
1	Strivers	26	246
2	Thrivers	11.5	115
3	High-Fliers	4.7	45
4	Strugglers	50	509
5	Poor Single Mothers	8	105
Totals		100	1,020

Note: proportion column uses population-weights

Table 1.3: Proportion of Solo parent subgroup to which binary indicator (1,0) applies

	Strivers		Thrivers		High Fliers		Strugglers		PSM		Total	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
							REF. CAT.					
<i>Employment, leave & childcare</i>												
Working	51.7	(4.06)	72.1	(5.27)	97.0	(2.7)	17.2	(2.18)	24.4	(5.95)	36.9	(1.96)
Didn't take Paid Maternity leave	22.8	(5.4)	18.6	(6.08)	6.8	(4.76)	21.8	(5.8)	24.7	(10.76)	20.0	(2.9)
Didn't take Unpaid Maternity leave	79.5	(5.27)	63.8	(7.44)	61.5	(10.3)	79.1	(5.41)	92.0	(5.15)	75.4	(3.05)
Didn't take Annual leave after birth	81.2	(5.3)	59.6	(7.83)	26.5	(7.93)	82.8	(5.03)	71.7	(11.44)	70.4	(3.39)
Transitioned to Unemploym't W1->W2	6.1	(2.62)	2.0	(1.57)	3.1	(2.76)	9.1	(2.81)	12.6	(5.48)	6.9	(1.44)
Transitioned into Work W1->W2	13.9	(2.66)	17.2	(4.34)	2.4	(1.89)	4.8	(1.13)	6.7	(2.6)	8.7	(1.07)
Improved education W1->W2	21.3	(3.36)	25.4	(5.55)	7.3	(4.4)	20.5	(2.29)	17.7	(4.96)	20.4	(1.65)
OPFP recipient at W2	70.4	(3.55)	45.5	(5.84)	11.6	(6.24)	68.1	(2.62)	61.1	(6.31)	62.9	(1.92)
Childcare: Prevented looking for job	14.6	(2.85)	9.4	(3.32)	2.5	(1.92)	21.6	(2.18)	11.1	(3.36)	16.6	(1.41)
Childcare: Made leave job	11.6	(2.68)	9.7	(3.3)	6.7	(4.22)	15.5	(2.07)	7.4	(3.55)	12.7	(1.35)
Childcare: Prevented study/training	10.5	(2.27)	17.9	(4.43)	12.2	(7)	17.2	(2.05)	5.7	(2.46)	14.4	(1.35)
Childcare: Restricted hrs of work/study	27.1	(3.61)	33.4	(5.67)	32.4	(9.44)	28.0	(2.5)	17.5	(5.09)	27.7	(1.81)
Grandparent babysits regularly	45.6	(4.3)	46.6	(6.26)	34.3	(8.56)	40.0	(2.98)	53.8	(7.62)	43.0	(2.13)
<i>Socio-demographics</i>												
Crisis Pregnancy	22.8	(3.34)	26.1	(5.29)	15.9	(5.92)	30.5	(2.64)	33.5	(6.44)	27.5	(1.8)
Complications in pregnancy	38.1	(3.97)	49.5	(5.86)	69.2	(8.44)	43.7	(2.77)	40.4	(6.42)	43.9	(1.99)
Disability of PCG	11.0	(2.66)	17.4	(4.49)	14.7	(7.22)	17.7	(2.15)	6.8	(2.65)	14.9	(1.44)

	Strivers		Thrivers		High Fliers		Strugglers		PSM		Total	
<i>Socio-demographics (cont.)</i>												
PCG in Bad Health	10.0	(2.6)	8.5	(3.39)	7.8	(3.88)	13.6	(1.97)	11.6	(3.86)	11.6	(1.31)
Family history of poverty	24.1	(3.6)	21.1	(4.84)	12.0	(6.45)	30.6	(2.61)	26.4	(6.33)	26.6	(1.81)
Lives rurally	35.8	(3.77)	49.0	(5.88)	34.5	(8.69)	41.4	(2.73)	40.0	(6.35)	40.3	(1.93)
English is native language	85.3	(2.65)	88.0	(3.75)	100.0	(0)	88.7	(1.52)	76.4	(5.81)	87.3	(1.22)
Welfare dependent at W1	29.2	(3.67)	19.4	(4.98)	0.0	(0)	44.3	(2.78)	38.0	(6.64)	34.9	(1.91)
Harder to make ends meet W1->W2	40.4	(4.02)	37.2	(5.4)	40.5	(9.39)	44.7	(2.79)	44.9	(6.58)	42.5	(1.98)
<i>Cohabitation & NRF</i>												
Transitioned UC->Solo W1->W2	10.1	(1.83)	11.5	(2.69)	14.8	(5.77)	9.3	(1.29)	7.2	(2.81)	9.8	(0.93)
Cohabited with NRF at one time	37.7	(3.87)	49.8	(5.85)	29.5	(7.5)	35.8	(2.64)	20.9	(4.73)	36.4	(1.88)
Financial contribution freq decreased	5.7	(1.69)	8.9	(4.07)	2.0	(2.02)	10.7	(1.92)	8.3	(3.21)	8.6	(1.19)
Father-child contact increased W1->W2	28.0	(4.26)	26.8	(6.82)	8.1	(5.58)	25.1	(2.84)	17.7	(5.16)	24.8	(2.04)
<i>Child characteristics</i>												
Can stand on one leg	83.1	(2.96)	80.8	(4.82)	80.4	(7.01)	87.5	(1.71)	88.3	(3.7)	85.3	(1.36)
Can throw ball overhand	94.3	(1.66)	87.7	(4.54)	92.7	(4.81)	93.9	(1.17)	96.6	(2.34)	93.4	(0.95)
Can copy vertical line	87.9	(2.6)	89.8	(3.56)	86.2	(6.06)	90.1	(1.6)	93.6	(2.28)	89.6	(1.18)
Can hold pencil in correct grip	45.4	(4.09)	45.4	(5.85)	57.8	(9.63)	47.9	(2.78)	69.7	(5.86)	49.1	(2)
Baby's health declined W1->W2	27.6	(3.62)	26.2	(4.99)	18.8	(6.55)	25.7	(2.45)	19.3	(5.3)	25.4	(1.73)
Child is overweight	26.9	(3.75)	21.0	(4.86)	15.4	(6.87)	18.5	(2.15)	34.3	(6.51)	22.1	(1.68)

Note: Text in **bold** indicates significant difference to reference group (#4, pink column) at p<.05; population weights applied; cells are mean percentage by group for respondents answering '1'; SE: Standard error; maternity leave indicators apply only to those who were working before birth

Table 1.4: Mean on select continuous indicators by subgroups of Solo parents

<i>Indicator</i>	Strivers		Thrivers		High Fliers		Strugglers		PSM	
	<i>Mean</i>	<i>SE</i>	<i>Mean</i>	<i>SE</i>	<i>Mean</i>	<i>SE</i>	<i>Mean</i>	<i>SE</i>	<i>Mean</i>	<i>SE</i>
Equivalised h'hd income (€)	13,488.08	(116.9)	18,345.66	(169.9)	29,868.41	(1609)	9,177.90	(69.2)	4,386.86	(198.5)
Minutes of TV watched per day (mins)	129.44	(6.78)	122.80	(8.253)	116.39	(15.96)	134.74	(4.48)	123.17	(9.911)
Parent practices alphabet with child (days pw)	4.33	(0.196)	4.11	(0.254)	2.73	(0.366)	4.50	(0.13)	4.80	(0.333)
Parent practices counting with child (days pw)	5.46	(0.148)	4.93	(0.218)	4.59	(0.423)	5.53	(0.1)	5.80	(0.238)
Socio-behavioural difficulties (SDQ)	10.63	(0.369)	8.52	(0.55)	8.64	(0.968)	10.14	(0.28)	9.09	(0.56)
Gestational age at birth (wks)	39.57	(0.177)	40.01	(0.185)	40.14	(0.256)	39.27	(0.14)	39.46	(0.205)
Birth weight (grams)	3,416.07	(53.17)	3,409.76	(58.46)	3,425.11	(92.42)	3,312.10	(38.7)	3,354.68	(63.55)
Age of PCG	29.92	(0.472)	30.96	(0.699)	36.03	(1.231)	28.73	(0.35)	28.23	(0.81)
Num. of children in h'hd (not study child)	0.71	(0.064)	0.35	(0.074)	0.15	(0.057)	1.05	(0.05)	1.09	(0.148)
Stress score	14.35	(0.33)	13.71	(0.489)	14.44	(0.779)	13.76	(0.26)	13.78	(0.706)
Depression score	3.62	(0.319)	3.16	(0.434)	3.68	(0.783)	4.18	(0.27)	3.46	(0.478)
Parenting Warmth score	4.79	(0.023)	4.82	(0.033)	4.79	(0.046)	4.76	(0.02)	4.79	(0.043)
Parenting Consistency score	3.82	(0.059)	3.89	(0.081)	4.09	(0.149)	3.84	(0.04)	3.78	(0.107)
Pianta: Positive aspects score	33.68	(0.157)	33.80	(0.221)	33.57	(0.398)	33.46	(0.16)	33.75	(0.185)
Pianta: Conflict score	16.82	(0.471)	16.72	(0.584)	14.15	(0.937)	17.52	(0.34)	16.63	(0.825)

Note: Text in **bold** indicates significant difference to reference group (#4, pink column) at $p < .05$; population weights applied; cells are group means for continuous indicators

Subgroups of Solo parents

Table 1.3 lists the mean percentages of respondents to whom a particular binary (1,0) variable applies. For example, the first column and first row shows that in Group 1, 51.7% of parents reported that they were working at wave 2 while for the second group (Group 2) the proportion of parents working was higher, at 72%. Table 1.4 lists the mean values for each continuous indicator by group. With this information we outline a narrative description for each group. Each group has here been assigned an illustrative name, as a means of providing an accessible shorthand by which to refer to group differences. These names are merely descriptive, interpretive and suggestive, they should not be taken to accord fixed identities to the members of these subgroups. Likewise individual respondents may or may not 'fit' with the broad brush average picture of each subgroup painted below. Table 1.5 summarises column percentages by group for select education levels and living arrangements.

Table 1.5: Select descriptive statistics for Education levels and living arrangements by Solo parent subgroup, column percentages (%) with highest row percentages highlighted

	<i>Strivers</i>	<i>Thrivers</i>	<i>High Fliers</i>	<i>Strugglers</i>	<i>PSM</i>
<i>Education (highest)</i>					
Primary	3	0	0	5	14
Secondary	52	32	29	55	44
Vocational non-degree	37	50	14	32	34
Degree level	6	10	20	6	5
Postgraduate	2	7	37	3	3
<i>Accommodation</i>					
Homeowner	22	38	76	13	17
Private landlord	33	45	10	40	18
Local authority	34	8	3	36	29
Parents					
<i>(rent paid)</i>	5	5	3	7	18
<i>(rent-free)</i>	<1	5	2	2	9
Claiming rent supplement	26	25	2	33	8

Note: population-weighted table; 'homeowner' refers to 'owner-occupied'; Accommodation section does not display some of the less populous categories of home tenure status; 'rent supplement' refers to 'rent or mortgage supplement'; highest row % highlighted

1. Strivers

Group 1 (N=246): Strivers

In this group average household income is relatively low, only about half the group are involved in the labour market and a relatively high number rely on social housing. The group is comprised of people generally educated to Secondary level (52% of the group) or Vocational non-degree level (37%), and 1 in 5 in this group improved their education over time. About half the group (52%) is working at wave 2, and 27% are engaged in homemaking. Quite a high proportion relative to the other five groups identified here, 14%, transitioned into work between waves of the study. Average equivalised household income is €13,488. Here, 33% are renting their accommodation from a private landlord, 34% are renting from the local authority, and 22% own their own home. Just over 1 in 4 are claiming rent supplement. The majority of this group are on OPFP (70%) and of those who worked before birth, 80% took no unpaid maternity leave, while 23% took no paid maternity leave.

Average age of mothers in this group is 29.9 and family size is 1.71 children including the study child. This group reported the lowest level of complications in pregnancy, on average. The group was heavily concentrated in urban areas (65%). About a third (29%) of this group were entirely welfare dependent at wave 1, declaring that all of their household income comes from welfare benefits, though this was a significantly lower proportion than the reference category, Group 4. In this group, 46% of parents reported that grandparents babysit regularly for them. In this group, 38% reported that they had at one time cohabited with the father of their child. This was the group most likely on average to report that frequency of father-child contact had increased between waves (28% reported this, though the difference was not significant). This group had the second highest incidence of overweight children on average (27%) of the five groups and this was significantly higher than the reference category.

2. Thrivers

Group 2 (N=115): Thrivers

This small group of about one hundred parents are doing well by a number of metrics. They are relatively well educated, with 10% having degrees and 50% educated to Vocational non-degree level, while 1 in 4 improved their education over time. The vast majority (72%) were employed at wave 2 with 18% engaged in homemaking and 17% transitioned from a position of non-work into work between waves of the study. The group recorded the second highest average level of equivalised

household income at €18,345. Of this group, 45% are renting their accommodation from a private landlord while 38% own their own home; 1 in 4 are claiming rent supplement. Just under half (45%) of this group are OPFP recipients (significantly less than the reference category). Of those who worked before birth, 64% did not take unpaid maternity leave. This group reported with the greatest frequency that childcare difficulties at wave 1 had restricted the hours they had available to work or study (not significantly different across groups). About half (47%) report that grandparents are involved in regular babysitting.

This group is on average the second oldest group, with PCGs having an average age of 31, significantly older than those in the reference group. Almost half (49.5%) reported that they experienced complications during pregnancy. They have small families on average, at 1.35 children including the study child per household and about half this group lives rurally. They recorded the lowest proportion of people relying entirely on welfare at wave 1, 19%, and this difference was significant relative to other groups. This is the group most likely to have cohabited with the NRF at one time (50% did so, significantly higher than other groups), while 9% report that the frequency of the NRF's financial contribution has declined over time. Of this group, 12% are newly Solo since the first wave of the study. Parents in this group have the lowest depression score of all five groups (significantly lower).

Children from this group have the lowest level of socio-behavioural difficulties, significantly lower than children in the largest subgroup of Solo parents identified in this analysis. Gestational age at birth was significantly higher than in the reference group (40 weeks vs. 39.27 weeks).

3. High Fliers

Group 3 (N=45): High Fliers

This group is very small and quite distinctive. Members of this group are generally extremely well educated, with 38% having postgraduate education and 1 in 5 holding a degree. Practically everyone in this group is employed and 39% of the group, the highest average proportion, took unpaid maternity leave. They are high earners with average equivalised household income almost €30,000 per year. In this group, 75% own their own home and 10% are renting from a private landlord; hardly anyone in this group claims rent supplement. Utilisation of OPFP was lowest amongst this group at 12%. Problems with childcare restricting hours of work or study at wave 1 affected 32% of women, a similar proportion to most other groups.

The group is the oldest on average, at 36 years, and family size is the smallest: most of these mothers only have one child (i.e. the study child) though the average is 1.15 children and this is significantly lower than the reference category. This group reported the highest frequency of reported complications in pregnancy, on average (69% of women reported this). This group also reported the highest average stress scores, parental consistency scores, and the lowest parent-child conflict scores on average (though only the conflict score was significantly lower than the reference group in a statistical sense).

About 15% of these women transitioned into Solo parenthood between waves, the highest proportion of the five groups, while 30% of the group had at one time cohabited with their child's father. This group was least likely to report an increased frequency of contact with the child's father over time, and the least likely to report that the frequency of financial contribution had declined between waves. On average their children had the heaviest weight at birth and the lowest frequency of being overweight at age 3 (15%), though these differences were non-significant. Their children watched the least amount of television per day (non-significant), but the mothers in this group also spent significantly less time per week practicing alphabet or counting with their child compared to the reference group.

4. Strugglers

Group 4 (N=509): Strugglers

This was the largest single group identified by the cluster analysis and, as mentioned, is the reference category for purposes of this analysis. The women in this group were generally poorly educated, with 45% possessing Secondary-level and 32% possessing Vocational non-degree education as their highest level, although 1 in 5 reported improving their highest level of education between waves. Of this group, 68% were homemakers, 13% (the highest proportion on average) were unemployed, and 17% were working at wave 2. The group had the lowest frequency of transition into work from non-work between waves (5% transitioned into work). Average equivalised household income was just under €9,200 per year, making this group the second poorest in cash terms. Also, 40% were renting their accommodation from a private landlord, 36% were renting from a local authority, and 13% owned their own home; 1 in 3 were claiming rent supplement, the highest proportion among the five groups. The majority, 68%, were claiming One Parent Family Payment at the time they were surveyed. This group was significantly more likely than other groups to report at

wave 1 that childcare difficulties had prevented them looking for a job (22%) and had prevented them studying or training (17%).

Average age in the group was 28.7 years, making them the second youngest group, and family size was relatively large with an average of 2.05 children including the study child per household, significantly larger than three other groups. Almost 18% of women in this group reported that they had a disability, while 31% (the highest proportion) reported that their family had difficulty making ends meet when they were 16. This group was significantly much more likely than some other groups to have been entirely dependent on welfare at their first GUI interview, with 44% reporting welfare dependency. This group also recorded the highest depression score on average and the highest levels of parent-child conflict, significantly higher than some other groups. This group was the most likely to experience a decrease in financial contribution from the NRF over time (non-significant difference). Children in this group record the highest levels of socio-behavioural difficulties on average, significantly higher than for some other groups. Parents in this group also recorded the highest degree of parent-child conflict, significantly higher than some other groups.

5. Poor Single Mothers

Group 5 (N=105): Poor Single Mothers

The term 'single mothers' as opposed to 'lone parents' or 'Solo parents' would seem to best describe this group, with the lowest incidence of prior cohabitation with the NRF (1 in 5 had previously cohabited, a significant difference) and a very low incidence of transition out of cohabitation since wave 1 (7%). The group is the most poorly educated on average, with 14% reporting that they have no education or only Primary level, the highest proportion for this level among the 5 subgroups. Meanwhile, 44% report Secondary level as their highest level of educational attainment. Nonetheless, this group was roughly in line with other groups in terms of reporting improved education over time, with about 1 in 5 (17%) indicating educational improvement. About 1 in 4 of this group were working at wave 2, and among the small numbers working hardly anyone took unpaid maternity leave (8%). Meanwhile 25%, the highest proportion among the groups, reported that they had not taken their entitlement to paid maternity leave. Average equivalised household income was just under €4,400 per year, the lowest average income compared to the other groups identified here. Fully 28% of these mothers lived with their own parents and the ratio of those paying rent to their parents vs. those not paying any rent was 2:1. Meanwhile, 29% lived in local

authority housing and 18% rented from a private landlord. Less than 1 in 10 (8%) of this group were claiming rent supplement.

Household income at this low average level seems unlikely and may be due to misreporting by those surveyed, or due to misinterpretation of the survey question. The women involved may have been reporting their own personal income and not reporting, say, any parental income in the household. Over half of this group are on OPFP, implying an annual income of at least €11,325 (i.e. €188 plus €29.80 (per child over 52 weeks), however the maximum reported household income is €6,010 for this group. This is puzzling but it should be borne in mind that absolute numbers of responses here are small; it seems that further data is needed.

The proportion claiming OPFP was 61%. At wave 1, 38% reported that they were entirely dependent on welfare. This was the youngest group of parents on average, with a mean age of 28.2 and family size was relatively large at 2.1 children per family including the study child. This is the group reporting most often (54%) that grandparents are involved in regular babysitting of the study child. The group also reports the highest proportion, significantly higher than other groups, of children being overweight (34% in this group reported their child was overweight).

Summary

This cluster analysis has drawn attention to an underlying structure in the available data on the broad grouping of 'Solo parents' and has demonstrated clear differences between subgroups across a number of interesting and potentially policy-relevant indicators. Put simply, the category of Solo parents conceals a lot of intriguing variation. The identification of subgroups within this category resulting in the 5-way typology advanced here may be helpful in the more precise targeting of interventions aimed at Solo-parent families and in the formulation of policy in this area. Bearing in mind the general patterning of the data as per the dendrogram above, it should be clear that we could adopt an even simpler broad structure and talk of a 3-way split amongst the Solo parents of infants characterising loosely: 1. The working young with small families; 2. The relatively older, well-educated and high earning single-child families (a very small group in absolute numbers); 3. The welfare-reliant, low-income, relatively large families. The existence of significant differences on numerous indicators to do with working patterns, child development, parenting styles/habits, welfare usage, demographics, health and others points to a potentially fruitful future research agenda attending to the specificities and distinctions between these subgroups of Solo parents.

I.6. Summary & Implications: Marital Status, Family transitions and Solo parents

Part I

Transitions

General

- The marital status type showing most movement between waves was Unmarried-cohabitant
- 23% of respondents transitioned out of UC status and into Married status over time
- 11% of UC primary caregivers (PCGs) transitioned into Solo parenthood between waves
- For Solo parents at wave 1, 13% transitioned into Unmarried-cohabitant status by wave 2, while 5% transitioned into Married status

Transition into Married family type from Unmarried-cohabitant status

- Economic factors were most associated with transition into marriage
- Being in a lower income quintile or finding it difficult to make ends meet made transition into marriage less likely

Transition into Solo parenthood from Unmarried-cohabitant status

- Being relatively young or in an unhappy relationship at wave 1 or living in an urban area were associated with transition into Solo parenthood by wave 2
- Where families got bigger over time the likelihood of transition into Solo parenthood was lower

Transition into cohabiting (married/unmarried) arrangement from Solo parenthood

- Where the number of children in household increased between waves Solo parents were more likely to have also transitioned to a cohabiting arrangement by wave 2
- There was a weak association of experience of crisis pregnancy with a lower likelihood of transition into a cohabiting arrangement by wave 2

Impacts of family transitions on parents and children

Parents

- Transition into Solo parenthood from UC parenthood is weakly associated ($p < .10$) with a change in depression scores (higher scores) over time
- Transition into Married parenthood from UC parenthood is associated with a change in depression scores (higher scores) over time
- Transition into cohabitancy from Solo parenthood is not associated with either increased or decreased levels of stress or depression

Children

- There were no significant associations between indicators or family type transition and measures of: child socio-behavioural, quality of parent-child relationship (positive, conflictual), or parenting style (warm, consistent, hostile)

Exploring the structure of the Solo parent grouping

- Cluster analysis performed on the basis of a basic set of variables capturing differences in income, education, employment status, cohabitation history, family size and age of parent allows us to identify distinct subgroups of Solo parents
- We identify 5 characteristic subgroups which we label, for the purposes of this analysis as follows: 1. Strivers, 2. Thrivers, 3. High fliers, 4. Strugglers, 5. Poor Single Mothers
- The Strivers and Thrivers are generally labour market active with low to middling earnings, and they differ in terms of their education, earnings, frequency of home ownership, and use of welfare benefits and other social supports; combined, these groups account for 38% of the population of Solo parents with infant children
- The High Fliers are very well educated and have high levels of income, with generally single-child families and majority home-ownership, though they are small in absolute numbers in

the wave 2 GUI data (N<50) comprising less than 5% of the population of Solo parents with infant children

- The Strugglers and Poor Single Mothers (PSM) are not generally active in the labour market, have a high reliance on welfare benefits, tend to have larger families and a greater reliance on social housing or, in the case of the PSM group, to live at home with their parents; they are relatively young with poor education levels and low earnings; combined, these two groups account for 58% of the population of Solo parents with infant children (PSM group accounts for 8%)
- There are significant differences between subgroups of Solo parents on numerous indicators to do with working patterns, child development, parenting styles/habits, welfare usage, demographics, health and other indicators

Policy implications

- The identification of subgroups within the Solo parent category, and the detection of statistically significant differences between subgroups on key socio-demographic and wellbeing indicators for parents and children, is a finding that should inform the future research agenda in this area
- The 5-way typology advanced here may be helpful in the more precise targeting of interventions aimed at Solo-parent families and in the formulation of policy relevant to Solo parents. For example, the finding that children in the Poor Single Mothers group are more likely to be overweight than children in other groups of Solo parents may be useful in the provision of dietary advice and support by health professionals, who may identify Poor Single Mothers on the basis of characteristics identified in this analysis, e.g. being relatively young and being more likely to live at home with their parents. Other groups, specifically the reference category group of Strugglers, were seen to be more likely on average to score higher on an index of depression, which may be useful information for relevant support services given that we also know the characteristics associated with being a 'Struggler', e.g. having a relatively large family while being relatively young and being unlikely to have a labour market attachment, perhaps due to childcare-related difficulties. These are merely

illustrative examples, but the identification of group differences may be useful in other ways as regards the development of potential interventions

- The identification of potential impacts of marital status and family type transitions on depression outcomes for parents suggests a role for readily available advice and support to parents who may be undergoing such difficult and challenging life transitions. Findings such as these are timely, following the recent establishment of *Tusla* the Child and Family Agency in January 2014. This agency is responsible for improving wellbeing and outcomes for children and represents a major reform of child protection, early intervention and family support services, also incorporating some psychological services and a range of services responding to domestic, sexual and gender based violence. The agency should be supported in addressing not just the challenges raised by different types of family but also those posed by transitions between family types

Part II

I.7. Solo Parents & Non-resident Fathers

Contact with Fathers

In the wave 1 sample and in the somewhat reduced (because of attrition) wave 2 sample, 12% of Solo parents recorded that the other biological parent of their child lives elsewhere than with the child. As noted earlier there was some change in the membership of the Solo parent category from wave 1 to wave 2: while 82% of parents who were 'Solo' at wave 1 remained so at wave 2, 11% of Unmarried-cohabitant parents and 2% of Married parents moved into the Solo category over time. Just over 3% of those reporting that the father lived in the same household as the PCG at wave 1 reported that the father lived elsewhere by wave 2. There appears to have been some movement back to the family home over time, for those who reported that the father lived elsewhere at W1 16% reported that they were cohabiting with the biological father at W2 (see Table 1.6).

Table 1.6: Change over time in residency of other biological parent according to PCG

<i>Other biological parent lives here (W1): % responding</i>	<i>W2</i>		<i>Total %</i>	<i>N</i>
	<i>Lives here</i>	<i>Lives elsewhere</i>		
<i>Lives here</i>	96	3	~100	8448
<i>Lives elsewhere</i>	16	80	~100	1040

Note: figures are row percentages; percentages do not sum to 100 as very small numbers of DKs, deceased respondents or those temporarily living elsewhere are excluded; population weighted table

We have data on about 800 Solo parents across both waves that allow us to see how child's contact with non-resident fathers (NRF) changed over time. About 28% of PCGs reported at wave 2 that their child has 'no contact' with the NRF, while 57% indicated they have daily/weekly/biweekly contact with the NRF.¹⁴ The table below shows change in child's contact over time with the NRF.

¹⁴ Almost all of the non-resident parents are fathers, however the wave 2 data shows that there are 6 males recorded as the PCG where the biological mother of the child is living elsewhere.

Table 1.7: Change over time in frequency of child's contact with non-resident parent

<i>Frequency of child's contact with non-resident parent (W1)</i>	<u>W2</u>				<i>Total %</i>	<i>Total N</i>
	<i>Daily</i>	<i>Weekly/Biweekly</i>	<i>Bimonthly/Less than</i>	<i>No Contact</i>		
<i>Daily</i>	55.0	30.1	6.2	8.8	100	187
<i>Weekly/Biweekly</i>	20.4	50.6	15.2	13.8	100	260
<i>Bimonthly/Less than monthly</i>	7.1	21.2	39.5	32.3	100	101
<i>No Contact</i>	2.3	11.4	12.7	73.7	100	243
<i>Total %</i>	22.2	30.8	15.2	31.9	100	-
<i>Total N</i>	166	241	123	261	-	791

Note: population weighted table; p=.000; highlighted cells show wave to wave category correspondence

Table 1.7 shows that of those Solo parents whose child had daily contact with the father at wave 1, over half still had daily contact at wave 2. Of those who had no contact at wave 1, 74% still had no contact by wave 2, implying that a quarter of respondents for whom we have data had increased their frequency of contact with the non-resident parent over time. These measures may not be entirely reliable as they are based on respondent recall which is an imperfect type of measure, but they are the best (only) indicators of frequency of NRF contact that we have.

Looking to frequency of financial contribution in Table 1.8 we see that over half (54%) of NRFs never made a financial contribution to their child at wave 2, and only about 1 in 3 made a contribution regularly. Considering change over time we see that the most stable category was the 'never contributes' category: 83% of fathers who never made a financial contribution at the first wave continued in this vein at the second wave of the GUI study; 12% had begun to make a regular contribution. Of those who were making a regular contribution at W1 the majority continued to do so at W2, 65% of respondents, while about 1 in 5 of this group had moved into the category of those who never contribute by W2. Those who were making payments 'as required' at the first wave were in the category most likely to change over time, however numbers of respondents here on whom we have data at both waves are very small (N=95) and so we must be cautious in the inferences we draw.

Table 1.8: Change over time in frequency of non-resident parent's financial contribution

<i>Frequency of non-resident parent's financial contribution (W1)</i>	<i>W2</i>			<i>Total %</i>	<i>Total N</i>
	<i>Never</i>	<i>Regular contribution</i>	<i>Payments as required</i>		
<i>Never</i>	82.6	11.6	5.9	100	418
<i>Regular contribution</i>	20.2	65.2	14.6	100	276
<i>Payments as required</i>	27.0	50.4	22.6	100	95
<i>Total %</i>	53.7	35.4	10.9	100	-
<i>Total N</i>	435	273	81	-	789

Note: figures may not sum to 100 due to rounding and due to exclusion of small number of DKs; population weighted table

Nonetheless, just over 1 in 5 in this group continued to make payments as required, while more than 1 in 4 had moved into the category of never contributing, and about half were making a regular contribution by W2. Overall, 8% of Solo parents experienced a reduction in the frequency of financial contribution from the NRF between waves of the study. There was variation in this regard depending on whether the mother was a Solo parent at both waves or whether she had transitioned into Solo parenthood over time, Table 1.9. For those who transitioned into Solo parenthood a greater proportion (43.4%) received a regular contribution than those who had been Solo from at least the time the study child was 9 months old (36.6%).

Table 1.9: Frequency of financial contribution and transition into Solo parenthood over time

<i>Frequency of non-resident parent's financial contribution (W2)</i>	<i>Solo both waves</i>	<i>Transitioned into Solo parenthood over time</i>
<i>Never</i>	52.7	38.7
<i>Regular contribution</i>	36.6	43.4
<i>Payments as required</i>	10.8	18
<i>Total</i>	100	100
<i>(N)</i>	(931)	(178)

Note: figures may not sum to 100 due to rounding or exclusion of DKs; population weighted table

Mothers in both waves were asked how positive or negative their relationship with the child's father was on a 5-point scale. Comparing responses over time allows us to see where relationships have deteriorated or improved. Again, this kind of data may be subject to recall bias. The table below captures the relevant distribution of responses, and shows that for 1 in 3 parents the relationship improved, while for a similar proportion it deteriorated, with the rest reporting no change.

Table 1.10: change over time in quality of parents' relationship

<i>Change in quality of parents' relationship from wave 1 to wave 2</i>	<i>Freq.</i>	<i>Percent (%)</i>	<i>Cum.</i>
<i>No change</i>	322	40	40
<i>Poorer</i>	237	29.4	69.4
<i>Better</i>	270	31.7	100
<i>Total</i>	829	100	-

Note: population weighted table

SDQ scores and involvement of non-resident father in child's life

Fig 1.6 shows variation in scores on the SDQ subscales of social and behavioural conduct by **frequency of child's contact with father**. As can be seen, there is little variation by each category of contact. Testing these small differences more formally, and controlling for other factors, frequency of father contact at wave 1 – and a related measure of change over time in contact with father – were not seen to impact significantly on SDQ score or on any of the SDQ subscales.

Among parents who had some form of contact with the non-resident father – and recall that 1 in 3 parents had no such contact at wave 2 – there were some apparent slight differences in SDQ subscale scores looked at in terms of **change in the quality of the mother-father relationship** over time, as reported by the mother (see Fig. 1.7). However, formal testing of this showed that there were no significant differences in subscale scores when controlling for other factors.

There were no significant differences and no interesting variation in SDQ scores or subscales when looked at in terms of whether fathers made a **financial contribution** at wave 1.

Fig. 1.6

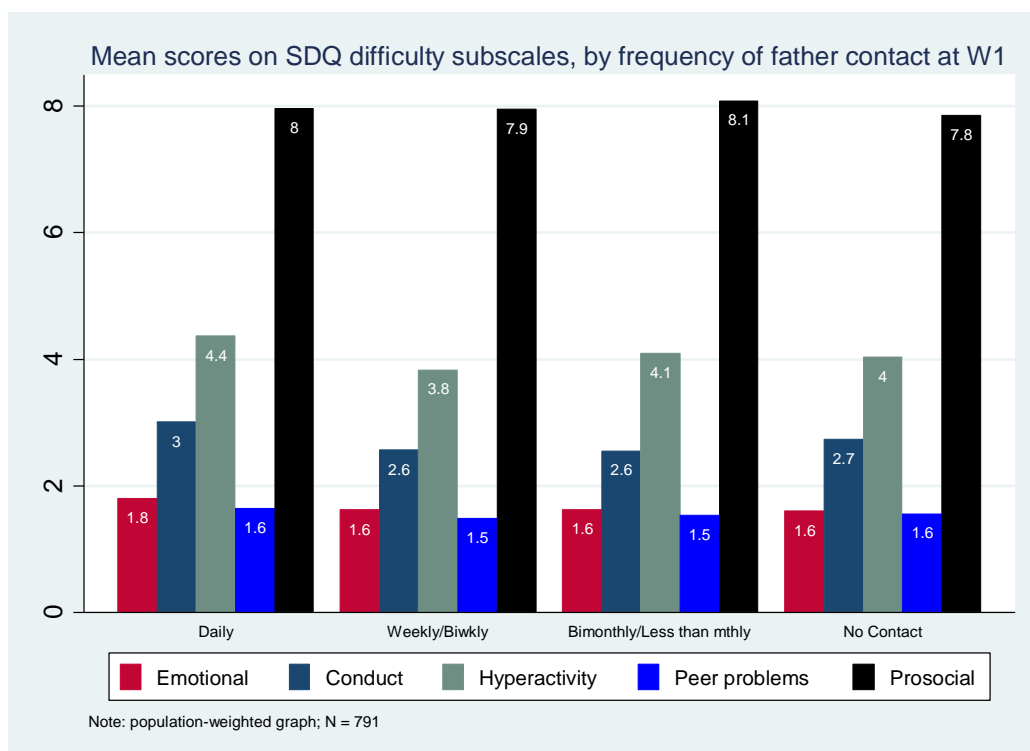
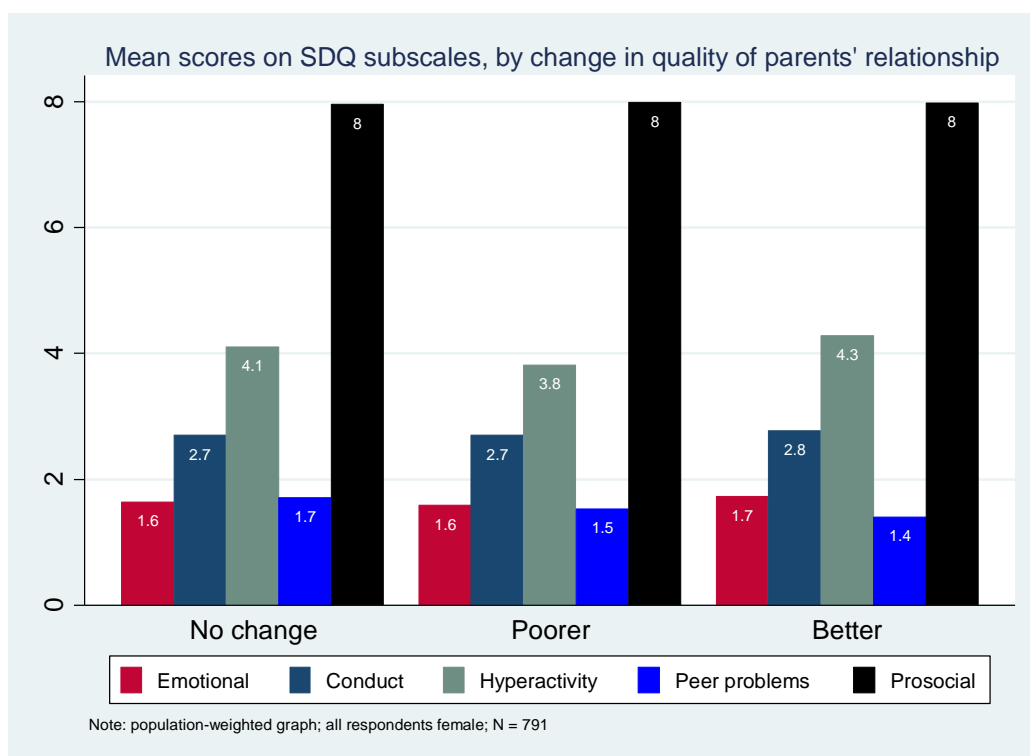


Fig. 1.7



Child's physical abilities at 3 years

Looking at a number of indicators of child's physical abilities at three years including **ability to stand on one leg, to copy a vertical line drawn by the PCG, to throw a ball overhand, or to grip a pencil in the correct 'pincer-like' grip** we test a range of indicators of fathers' involvement. Frequency of contact at wave 1, increased father-child contact over time, and whether or not the father made a financial contribution at wave 1 did not help to significantly explain differences in any of the above 4 mentioned physical abilities when controlling for other factors.¹⁵

However, **change in quality of parents' relationship** over time did help to significantly explain variation in certain abilities. Specifically, where the quality of the parent relationship was held to have improved over time, children at age 3 were:

- 2.2 times more likely to be able to throw a ball overhand ($p=.053$)
- 1.6 times more likely to be able to grip a pencil in the correct pincer-like fashion¹⁶

Parental stress and depression at wave 2

For **depression at wave 2** as reported by parents who were Solo at both waves, *none of the following factors* helped to significantly explain variation:

- Frequency of contact at wave 1
- change to increased child-father contact over time
- positive change in the quality of the parents' relationship over time
- whether or not the father made a financial contribution at wave 1
- whether or not a financial contribution was stopped between waves

Looking at **stress at wave 2** as reported by parents who were Solo at both waves, none of the indicators in the preceding paragraph showed a significant association with stress except for *child frequency of contact with father*:

¹⁵ All factors controlled for are the same as in the models of child's physical abilities elsewhere in this report.

¹⁶ The reference category here is 'all Solo parents recording no change or a negative change in the quality of their relationship with the non-resident parent over time'.

- *Daily contact* significantly predicts lower stress scores than those who have 'no contact' with the non-resident father; stress scores are an estimated 1.8 points lower on this 30 point scale (mean: 12.35) for those with daily contact, controlling for other factors
- *Bimonthly or less than bimonthly contact* significantly predicts lower stress scores than those who have 'no contact'; stress scores are an estimated 1.3 points lower, controlling for other factors ($p < .10$)

Transition into work, unemployment or improved education: Non-resident father effects

Three indicators of *change in engagement with non-resident fathers* over time are assessed here:

1. Whether the frequency of **financial contributions** declined
2. Whether the frequency of **NRF contact** with the study child increased
3. Whether the **quality of the relationship** between mother and father changed and how (better/worse)

As we are here constraining the sample to focus solely on those who were Solo parents at either wave 1 or 2 the number of cases available is greatly reduced. For this reason we utilise a reduced set of controls in the models.¹⁷ Analysis of the following dependent variables showed:

- **Transition into work:** no indicators of non-resident father engagement were significant
- **Transition into improved level of education:** no indicators of non-resident father engagement were significant
- **Transition into unemployment:** only one indicator was significant: in families where the *frequency of father-child contact increased over time* there was a greatly reduced risk that a previously employed Solo mother would transition into unemployment

This latter unemployment-related finding may be for a number of potential reasons. Small cell sizes (due to a small N in these models) prevent formal testing of interaction effects while controlling for other factors for the 'relationship quality' variable; formal testing for interactions of 'financial

¹⁷ Controlling for: income, education, mother's age, disability, poor health, region, native English speakerhood (all at W1), and measures of whether the number of children in h'hd increased between waves, and whether the PCG's level of education increased between waves (not in models of educational change).

change' or 'previous NRF cohabitation' with NRF contact returns non-significant interaction terms. However, there are significant two-way associations between an increase over time in frequency of father-child contact and the following potential explanatory factors, some of which may mediate the detected effect; future research, with a bigger sample, could return to this issue. All of the points below (Table 1.11) relate solely to Solo mothers who were working at W2:

Table 1.11: potential mediators for impact of NRF contact on PCG unemployment transitions

<i>Mediator</i>	<i>Association with 'frequency of father-child contact'</i>	<i>Sig.</i>
<i>Change in quality of parents' relationship</i>	better quality associated with increased frequency of contact	(p=.000)
<i>Change in frequency of financial contribution</i>	reduced frequency of contribution associated with increased frequency of contact	(p=.000)
<i>Cohabitation with non-resident father before moving to Solo parenthood</i>	past cohabitation associated with increase in frequency of contact	(p<.067)

Note: tests of association were Pearson chi-square tests of independence in population-weighted contingency tables for Solo mothers working at W2; N=247 for each comparison, N=246 for change in frequency of financial contribution

It may be the case that increased father-child contact in some way reflects greater sharing of parental duties, acting as a protective effect against maternal transition into unemployment. However, looking more closely at Solo mothers who were still in work at W2, there was no association of frequency of father-child contact with a) geographical proximity of father to mother's home, or b) change in the nature of the parenting arrangement with the non-resident father, i.e. from none to formal/informal.¹⁸ Rather strangely, increased frequency of father-child contact was associated with *infrequent* wave 2 parenting discussions about the study child between mother and father (p<.000; chi-sq test). As there is little evidence of greater parental sharing of duties and, and as we are dealing here with a small number of cases, we cannot say very much with certainty on this point and so must remain circumspect.

¹⁸ There was also no association with the timing of separation from the non-resident father, i.e. before/after birth, with increased frequency of father-child contact over time; all population-weighted cross-tabs

Taking or not taking Maternity leave: Non-resident father effects

In tests of association of any of the three indicators of *change in engagement with non-resident fathers* with whether or not the mother took maternity leave (paid, unpaid or annual leave) we find no significant relationships.¹⁹ Analysis is problematic here due to small sample sizes and we ignore results where cell size was less than 5.

However, amongst working Solo mothers who did in fact take maternity leave there was one significant association for the number of weeks of maternity leave taken, specifically **number of weeks unpaid maternity leave**:

- **Reduced financial contribution over time**: where financial contribution was reduced over time this was significantly associated with an *unpaid maternity leave 9.6 weeks shorter in duration* than for those who experienced no reduction in frequency of financial contribution²⁰

We must take care in interpreting this last finding as available data is limited (N=43) and we do not have information on when exactly the financial contribution was reduced. Also, it may have been the case that the NRF reduced the financial contribution simply *because* the mother returned to work. Further research, perhaps of a more qualitative nature, may help to tease out causality in this regard.

¹⁹ Two-way population-weighted crosstabulations with Pearson chi-squared statistics.

²⁰ Model N = 43; bivariate regression with sample constrained to only those who were Solo mothers at both waves of GUI; population weights applied; $\alpha = 13.6$; $r^2 = .027$; $p < .000$

I.8. Summary & Implications: Solo parents & Non-resident Fathers

Contact with fathers

General

- About 1 in 3 Solo parents had no contact with the non-resident father (NRF) by wave 2
- Of those who reported that the father lived elsewhere at W1, 16% reported that they were cohabiting with the biological father at W2
- Of those Solo parents whose child had daily contact with the father at wave 1, about half (55%) still had daily contact at wave 2
- Of those who had no contact at wave 1, 74% still had no contact by wave 2
- About 1 in 3 Solo parents reported an improvement in the quality of their relationship with the non-resident father between waves of the study, with a similar proportion reporting a decline

Financial contribution

- Over half (54%) of NRFs made no financial contribution to the upkeep of their child at W2
- About 1 in 3 NRFs (35%) made a regular financial contribution at W2
- Overall, 8% of Solo parents experienced a reduction in the frequency of financial contribution from the NRF
- Less than 1 in 5 non-resident fathers who never made a contribution at wave 1 had begun to make a contribution by wave 2
- Of those who were making a regular contribution at W1 the majority (65%) continued to do so at wave 2
- One fifth of those making a regular contribution and over one quarter of those making payments as required at W1 were making no financial contribution whatsoever by W2
- For those who transitioned into Solo parenthood between waves a greater proportion received a regular contribution than those who had been Solo from W1

Impacts on children and mothers

Children's SDQ scores

- There was no impact of frequency of non-resident father contact, or of change in quality of the mother-father relationship or of financial contribution of non-resident fathers on infant socio-behavioural difficulties (SDQ scores) at age 3

Children's physical abilities

- Improvement in the quality of the mother-father relationship over time was associated with better outcomes in terms of child physical development by age 3
- Children at age 3 were 2.2 times more likely to be able to throw a ball overhand and 1.6 times more likely to be able to grip a pencil in the correct fashion where the quality of the mother-father relationship improved over time

Mother's stress and depression

- There was no association of any indicator of non-resident father engagement and maternal depression index scores
- Frequency of child contact with father was associated with mothers' stress at wave 2, where more contact predicted lower stress scores (relative to those who had no contact)

Work and education effects of NRF contact

Transition into unemployment

- In families where the *frequency of father-child contact increased over time* there was a greatly reduced risk that a previously employed Solo mother would transition into unemployment
- There was no effect of NRF contact on likelihood of transitioning into work or into improved education

Unpaid Maternity leave

- For Solo mothers who had been working before birth, a reduction between waves in the frequency of financial contribution from the NRF significantly predicted an unpaid maternity leave *9.6 weeks shorter in duration* than for those who experienced no such reduction

Policy Implications

- The finding that increased father-child contact and improved quality of parents' relationship may be beneficial to both child development and maternal health underscores the relevance of facilitating the involvement of NRFs in their family's lives where practicable and removing barriers to shared parenting wherever they might be found. In this regard, recent changes to tax credits may be viewed as a barrier to shared parenting where they limit the ability of NRFs to contribute maintenance payments (see Policy Context section for this chapter and see next point below)
- Strengthening women's and children's entitlements as regards securing a financial contribution from a non-resident father – as well as improving awareness and knowledge of the legal rights and protections already in place and ensuring that such rights are adequately enforced – may help to remedy the infrequent or absent contributions that appear to be characteristic of the Solo parent group. At the same time it must be acknowledged that many NRFs may simply have been unable to pay, given the challenging economic climate at time of data collection (early 2011). In the current context the One-Parent Family Credit – a tax credit – was abolished on January 1st 2014. A new tax credit, the Single Person Child Carer Credit, which imposed more demanding eligibility conditions and operational rules was introduced. These changes seem likely to have made it very difficult for primary carer single parents to surrender their entitlement to the credit to a secondary claimant, e.g. the non-resident father of their child. The new requirement that the child live with the secondary claimant for more than 100 days in a year presents a serious obstacle to sharing the entitlement. This in turn has material implications for NRF earnings and thus for maintenance payments. In light of the results presented here, serious questions must be asked about any policy which makes it even less likely that NRFs will meet their maintenance payment obligations. Future research should attempt to establish empirically the impact of these tax credit changes on NRF maintenance payments
- The finding that NRF financial contributions impact on the duration of unpaid maternity leave taken should feed into policymakers' considerations around maternity leave for working Solo parents

2. Childcare

2.1. Literature on the import of childcare arrangements

Impact on mothers' work and education

Much research has shown that childcare arrangements and constraints on childcare matter for both mother and child. For mothers, childcare is closely bound up with working arrangements, the timing of return to work after birth, and the nature or type of work engaged in, i.e. full-time or part-time (McGinnity et al., 2013). In all of this, women's decisions around work are highly sensitive to the prevailing policy context (Berger et al., 2005).

On the specific issue of returning to work after birth, some evidence indicates that it is women with higher levels of education who tend to return sooner than those with lower levels of education (Russell et al., 2006), though other studies maintain that, due to greater financial pressure, women with lower levels of education tend to return to work earlier (Smeaton, 2006). However, such factors may be of little relevance when the prevailing legal framework around maternity leave provision is taken into account (Waldfogel et al., 1999). The official *Growing Up in Ireland* report on mothers' return to work and childcare choices showed a clear uptick in the proportion of women returning to work from 6 months after birth onwards, i.e. once statutory entitlement to paid maternity leave had expired (McGinnity et al., 2013). This finding is in accordance with other research which found a high sensitivity of work decisions to policy factors, more so for paid than unpaid types of leave (Berger et al., 2005).

Statutory (paid) maternity leave provisions will clearly pattern the usage and nature of non-parental childcare arrangements in the first year of an infant's life. After this point it seems likely that socio-demographics and family background characteristics will take on a greater role, patterning childcare choices in line with the availability and affordability of different childcare options. Problems with arranging childcare can impact in detrimental ways on the type and extent of activities parents engage in, potentially acting as a constraint on labour market engagement or the acquisition of human capital, e.g. through education.

Research from the US has found that childcare subsidies may encourage single mothers to engage in human capital investment; specifically, subsidy receipt was seen to increase the likelihood that a single mother would enrol in courses at a school or university or engage in a job training programme

(Herbst and Tekin, 2011). Interestingly, the same authors have found, in a separate study, that subsidy receipt in the year before kindergarten was associated with lower reading and math test scores and greater behaviour problems at kindergarten entry; this was ascribed to the likely very low quality of childcare provision accessed by those mothers and families in receipt of childcare subsidy (Herbst and Tekin, 2010). On the specific issue of work, research has shown that the costs of childcare can impede mothers' employment behaviour significantly, and that single mothers are less responsive in their labour force participation behaviour to childcare price changes than married mothers (Kimmel, 1998).

We assess the extent to which difficulties arranging childcare impacted on such activities among parents at W1 below, and then explore whether such constraints were linked to later labour market and human capital outcomes at W2.

Impact on children

Childcare arrangements can impact on children's outcomes directly – through the nature, quality and type of arrangement itself – and indirectly – through the consequences which the availability or otherwise of childcare may have for parents' ability to work outside the home or for the timing of their return to work. Studies have found that the experience of non-maternal care in the first year of a child's life is linked to emotional, social and developmental outcomes: infants who experienced a lot of non-maternal care (i.e. more than 20 hours per week) were more likely to be avoidant of their mother on reunion and more likely to be classified as insecurely attached (Belsky and Rovine, 1988); maternal employment by the ninth month was found to be linked to lower Bracken School Readiness scores at 36 months, with the effects more pronounced when mothers were working a long week (30 hours or more), and these results held up even accounting for the quality of childcare and of the home environment (Jeanne Brooks–Gunn et al., 2002); maternal employment during the first year has also been linked to deficits in intellectual ability for boys²¹ at age 4 (Desai et al., 1989).

In all of this, the quality of childcare has been seen to matter with better quality childcare, as measured by more child-focused approaches and smaller group sizes, associated with better outcomes in terms of children's social competence (Harrison, 2008). There is evidence to suggest that the effect of quality varies by subgroup, with disadvantaged children more sensitive to variations in quality of care (Phillips and Lowenstein, 2011). Quality of care has been seen to matter

²¹ Though not for boys in low-income families.

for language development, though quality often has little impact on children whose home environments are not disadvantaged (Melhuish, 2003). While much research is concerned with centre-based care arrangements some studies in the UK have looked at relative-based care, finding no impact on behavioural outcomes for care by children's relatives (Sylva et al., 2004). Quality of care has been understood in terms of process characteristics, i.e. interactions with other and learning activities, as well as structural characteristics, i.e. group size, staff training, number of staff, and better structural factors have been associated with improved language and cognitive development (McGinnity et al., 2013).

Policy context in Ireland

The policy context for care of young children in Ireland is outlined in detail in GUI Report 2 on the infant cohort (McGinnity et al., 2013). That report highlights a number of factors, including that: all women who become pregnant are entitled to take leave after birth and to return to the same job, or a job on a similar level; many women receive maternity payment from the state, subject to qualifying conditions; the relatively low maximum threshold (€280 per week at the time referred to, i.e. 2008, though this has since been reduced) put the statutory replacement rate for maternity benefit in Ireland below the level of comparable European countries at that time; the duration of maternity provision in Ireland nonetheless now compares well to other West European countries (McGinnity et al., 2013).

Research has pointed out that during Ireland's boom years childcare arrangements in the private and community sector – as opposed to the state sector – were encouraged indirectly through the provision of capital grants for the financing of such arrangements (McGinnity et al., 2013). Due to the low level of government subsidy the cost of childcare for families in Ireland is among the highest in the EU.

The latest available OECD figures for 2012 show that for a typical lone parent family on average earnings seeking full-day care for two pre-school children, the net cost amounts to 40% of the family's income in Ireland, compared to an OECD average of 13% and an EU average of 12% (OECD, 2014). For a 'couple family' earning less than average wages (one earner on two-thirds of average wages and another earning on half of average wages) the net cost of childcare on the same terms as in the preceding example amounts to 35% of family income, the highest in the OECD after the US (OECD, 2014). The OECD itself suggests that Ireland needs to consider a short-term subsidy scheme for childcare when parents are getting back into work after having been on welfare benefits (Kelpie

and Weston, 2014). As we shall see later, GUI data show that less than 30% of Irish children aged 3 years are enrolled in centre-based childcare; meanwhile the comparable figure for the UK is 40% and for France it is 50% (Ibid.). Relevant to income levels are child-related social supports such as Child Benefit, which was standardised at €130 per month for each child from January 2014, as announced in Budget 2013.²²

Affordable childcare aimed at families on lower incomes is provided by means of community/not-for-profit schemes. A number of childcare schemes with varying levels of subsidy operate in Ireland:

- **ECCE** (Early Childhood Care and Education Scheme): this provides one free year of early childhood care and education for all children of pre-school age, potentially up to two years for children with special needs, and the service is provided at participating playschools and daycare services. The ‘free’ aspect of the scheme covers 3 hours of childcare per day over 38 weeks and parents are charged if their child attends for longer than 3 hours per day or attends for more than 38 weeks.²³
- **CCS** (Community Childcare Subvention): restricted to community/not-for-profit services, this programme “supports disadvantaged parents and provides support for parents in low paid employment and training or education by enabling qualifying parents to avail of reduced childcare costs at participating community childcare services”.²⁴ Parents pay the cost price minus the relevant subvention amount, where amounts vary by the type of childcare provided (Full or Part-time, Sessional or Half-Session) and the level of need of the parents, with the maximum amount of subvention being €95 per week for full-time care²⁵
- **CETS** (Childcare Education and Training Supports programme): this programme supports parents on eligible training courses and eligible categories of parents returning to work, by providing subsidised childcare places. The ASCC (see below) is one strand of this, with another strand catering for Community Employment (CE) participants, providing part time

²² http://www.welfare.ie/en/Pages/273_Child-Benefit.aspx; accessed Jan 2014.

²³ An explanation of the scheme can be found here (accessed March 2014): http://www.citizensinformation.ie/en/education/pre_school_education_and_childcare/early_childhood_care_and_education_scheme.html

²⁴ For a guide to the scheme and its relevant administrative procedures see (accessed March 2014): http://www.dcy.gov.ie/viewdoc.asp?fn=/documents/childcare/ccs_docs_sept_2013/Guide_to_admin_procedures_2013.htm

²⁵ Information on subvention rates and qualifying criteria can be found here (accessed March 2014): http://www.dcy.gov.ie/documents/childcare/ccs_docs_sept_2013/Subvention_Bands_and_Rates.pdf ; parental ‘need’ assessed by a combination of being on certain types of welfare benefit in conjunction with being on a medical card.

care for children aged 1 to 5 years. There are 1,800 places on this strand to be allocated on a first-come-first-served basis. The CE CETS places are provided for 50 weeks in the year and the maximum a CE participant can be charged is €15 per week.²⁶ The Department of Education provides another strand administered by newly established Local Education and Training Boards, providing 2,500 places in total.²⁷ The maximum amount that childcare providers can charge to parents on this scheme for full-time care is €25 per week

- **ASCC** (After School Child Care Scheme): A new scheme providing after-school childcare places available to people who have been long-term unemployed or who were getting a One-Parent Family Payment and who have got a job offer or have significantly increased their part-time hours. To be eligible parents must have a child aged between 4 and 13 years attending a primary school²⁸

Another relevant aspect of the context in Ireland now and at the time wave 2 data were collected concerns the availability of work: the most recent labour force data show that the employment rate for males in Ireland in 2013 (Q3) is 65.9%, while for females in the same period it is 56.3%.²⁹ The data for wave 2 of the GUI infant cohort study were collected between December 2010 and July 2011 and so the findings presented here should be understood with reference to the policy context prevailing at that time. At that time (2011, Q1), the male employment rate was 62.1% and the female employment rate was 54.9%. Recent changes to the policy context since then should be considered in light of the findings presented below.

Aims

This chapter aims to explore and assess:

- How parents are using childcare services at wave 2 and how this varies by family type
- How use of childcare services has changed over time
- How difficulties arising from problems organising childcare at wave 1 may have impacted on work and other outcomes for parents at wave 2
- Variations in quality of childcare and how access to quality childcare is associated with family type or marital status

²⁶ For rules governing CE and CETS eligibility see (accessed March 2014):

<http://dcya.gov.ie/documents/earlyyears/CECETSchildcareschemeFAQs.pdf>

²⁷ <http://www.dcy.gov.ie/viewdoc.asp?fn=/documents/childcare/CETSMainPage.htm#1>

²⁸ For eligibility rules see (accessed March 2014): <http://www.welfare.ie/en/pressoffice/pdf/SW135.pdf>

²⁹ Eurostat labour force statistics from Eurostat website: 'Employment rates by sex, age and nationality (%)' [lfsq_ergan]; Last update: 10-01-2014.

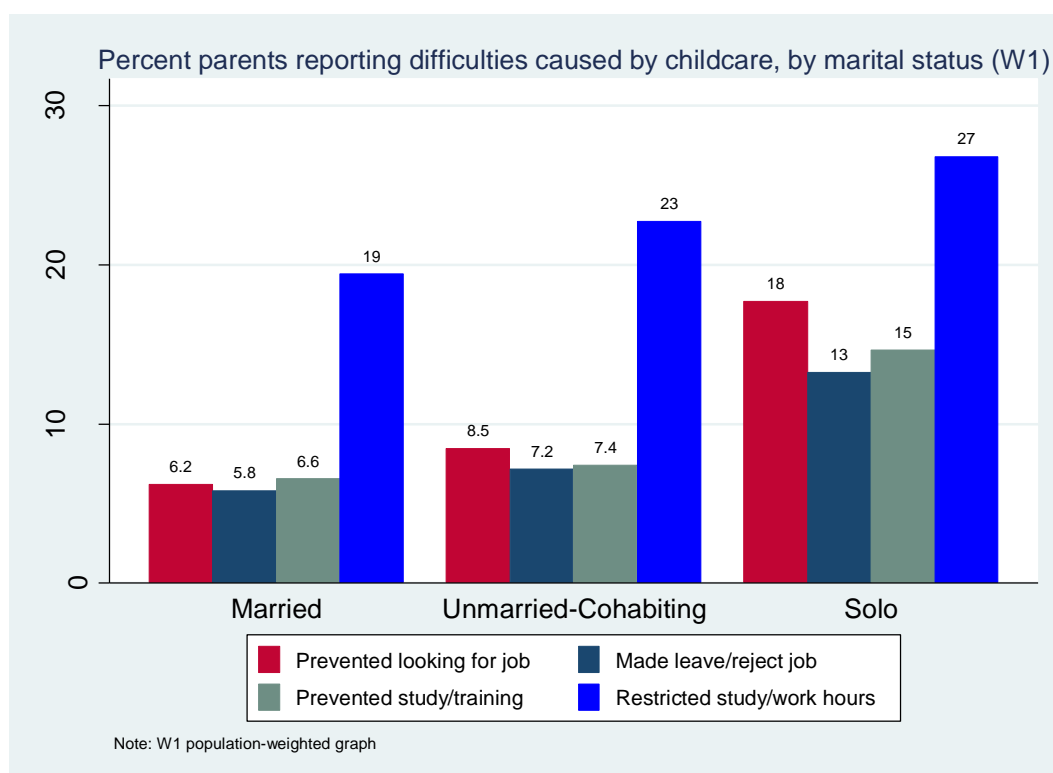
2.2. Results

Difficulties arising due to childcare arrangements, wave 1

Parents at wave 1 were asked whether arranging childcare had caused them any difficulties as regards employment, study, and training (we ignore difficulties with ‘engaging in social activities’ for the purposes of this analysis): 30% of parents reported that they had been caused at least one type of difficulty by childcare arrangements.³⁰

- 7% of parents reported that difficulties had made them leave or turn down a job
- 8% of parents reported that difficulties had prevented study or training
- 8% of parents reported that difficulties had prevented them looking for a job
- 21% of parents reported that difficulties had restricted the hours they worked/studied

Fig. 2.1



³⁰ Analysis of this survey item assumes that the absence of a tick in the questionnaire box is equivalent to the respondent having answered ‘No’, i.e. a positive indication that they did not experience this childcare difficulty. Readers should note that there is no means of separating out responses that are actually ‘missing’ on this survey item and should bear this in mind when interpreting results.

All of these difficulties affected Solo parents disproportionately, with high proportions of Unmarried-cohabitant parents (relative to Married parents) also reporting difficulties, see Fig. 2.1. Amongst all of the respondents reporting difficulties due to childcare arrangements there was overlap and a number of difficulties were often encountered simultaneously by respondents. Of those encountering difficulties with work, study or training due to childcare arrangements crosstabulations³¹ of the childcare variables showed that 67% reported encountering one difficulty, 20% reported encountering two types of difficulty, with the remaining 13% reporting three or more types of difficulty.

Of those who were **prevented from looking for a job** at wave 1:

- 35% also reported having to turn down or leave a job
- 38% also reported that they were prevented from studying or undertaking training
- 51% also reported that the hours they could work/study were restricted

Models of characteristics of people having difficulty arranging childcare

Next we explore the characteristics associated with experiencing different types of constraint on parental activity due to difficulties with arranging childcare. These models control for socio-demographic and other factors allowing us to assess, inter alia, differences by income level and marital status etc., controlling for other factors.

Prevented from looking for work

- **Marital status:** Solo parents were 1.7 times more likely than Married parents to be prevented from looking for work because of childcare difficulties; there was no significant difference between Unmarried-cohabitant and Married parents
- **Lower likelihood of experiencing this difficulty:** there was a clear and significant impact of income here, with those in higher income quintiles less likely to experience this difficulty relative to those in the lowest quintile; those with only Primary level education were significantly less likely than those with Secondary level education to have experienced this difficulty; if the PCG reported that they were employed (or on maternity leave) at wave 1 they were significantly less likely to report having encountered this difficulty; rural dwellers

³¹ unweighted

and native English speakers were also less likely to report that childcare difficulties had prevented them looking for work

- **Higher likelihood of experiencing this difficulty:** those who experienced a crisis pregnancy were more likely to report that childcare difficulties had prevented them looking for work ($p < .10$); also those who reported feeling that they did not get enough help from family or friends outside the home were more likely to report that childcare difficulties had prevented them looking for work

Made to leave job

- **Marital status:** Solo parents were 1.7 times more likely than Married parents to be made to leave work because of childcare difficulties; there was no significant difference between Unmarried-cohabitant and Married parents
- **Lower likelihood of experiencing this difficulty:** higher income, being a rural dweller, or being a native English speaker were all significantly associated with a lower likelihood of being forced to leave a job due to difficulties arranging childcare
- **Higher likelihood of experiencing this difficulty:** complications in pregnancy or feeling that they didn't get enough help from family/friends was associated with a higher likelihood of reporting having had to leave a job due to childcare difficulties

Prevented from studying/training

- **Marital status:** Solo parents were 1.9 times more likely than Married parents to be prevented from studying/training because of childcare difficulties; there was no significant difference between Unmarried-cohabitant and Married parents
- **Lower likelihood of experiencing this difficulty:** those with the lowest level of education (Primary or none) were less likely than those with Secondary education to report that study/training had been prevented due to childcare arrangements; older women were less likely to report this difficulty, as were rural dwellers; where the family was in regular contact with the study child's grandparents the PCG was less likely to report that childcare difficulties had prevented studying/training

- **Higher likelihood of experiencing this difficulty:** those with Postgraduate education (relative to Secondary education) were significantly more likely to report that they were prevented from studying/training due to difficulties with childcare; those who experienced complications in pregnancy or who had a crisis pregnancy were more likely to report problems with studying/training due to childcare, as were those with larger families, those who felt they didn't get enough external help, or those with a family history of poverty

Fewer hours for work or study

- **Marital status:** Solo parents were 1.5 times more likely than Married parents to have experienced restrictions on their hours of work or study because of childcare difficulties while Unmarried-cohabitant parents were 1.2 times more likely to have experienced this
- **Lower likelihood of experiencing this difficulty:** rural dwellers were less likely to report that their hours of work or study were restricted due to childcare difficulties than urban dwellers
- **Higher likelihood of experiencing this difficulty:** being employed or on maternity leave at wave 1, experience of crisis pregnancy, complications in pregnancy, a family history of poverty, and feeling they don't get enough external help were all factors associated with reporting restrictions on work or study hours due to childcare difficulties

Childcare usage at wave 2

At wave 1 about 60% of parents were still looking after their child themselves. Across both waves, 85% of those who did use a form of non-parental childcare used only one type of childcare. About half the sample in W2 responded that their child was in non-parental care for more than 8 hours per week³² and 60% of these respondents reported that their child was being cared for in centre-based childcare. Of those whose child was in non-parental care at wave 1, 73% reported that their child was in non-parental care at wave 2 (Table 2.1).³³ Of those who reported at wave 1 that their child was being cared for by the parents themselves, 65% reported at wave 2 that the child was being cared for by the parents themselves. This entails that about a quarter of children who were in non-

³² Question wording varies slightly from wave 1 to wave 2. Wave 1 survey question asked: "Is [baby] currently being minded by someone else, other than you or your resident spouse/partner on a regular basis each week?" 40% of wave 1 respondents answered 'Yes' to this question. Wave 2 survey question asked: "Is [child] currently being minded by someone other than you or your resident spouse/partner for 8 hours or more per week during the day?" 50% of wave 2 respondents answered 'Yes' to this question.

³³ Non-parental care "of more than 8 hours per week" at wave 2.

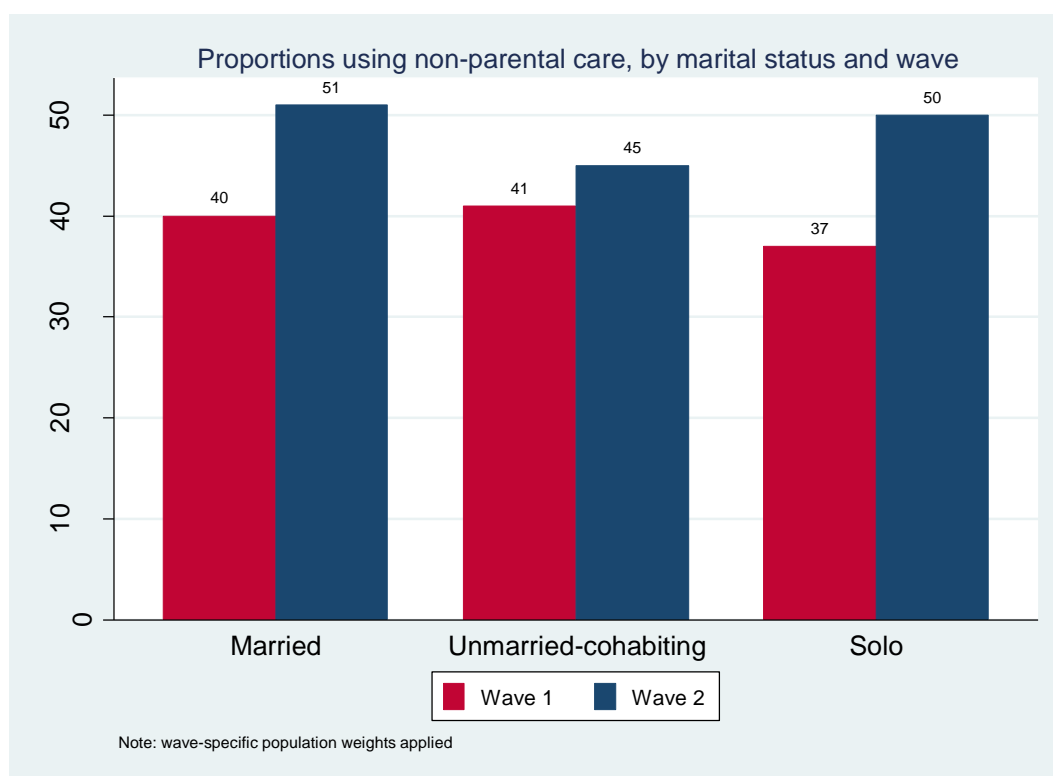
parental care at wave 1 were in primarily parental care at wave 2, and about one third of children who were cared for by their parents at wave 1 were in non-parental care by wave 2 (though note the change in question wording between waves, see footnotes).

Table 2.1: Baby in non-parental care (%)?³⁴

Wave 1	Wave 2		
	Yes	No	Total
Yes	73.2	26.8	49.7
No	35	65	50.3
Total	100	100	100

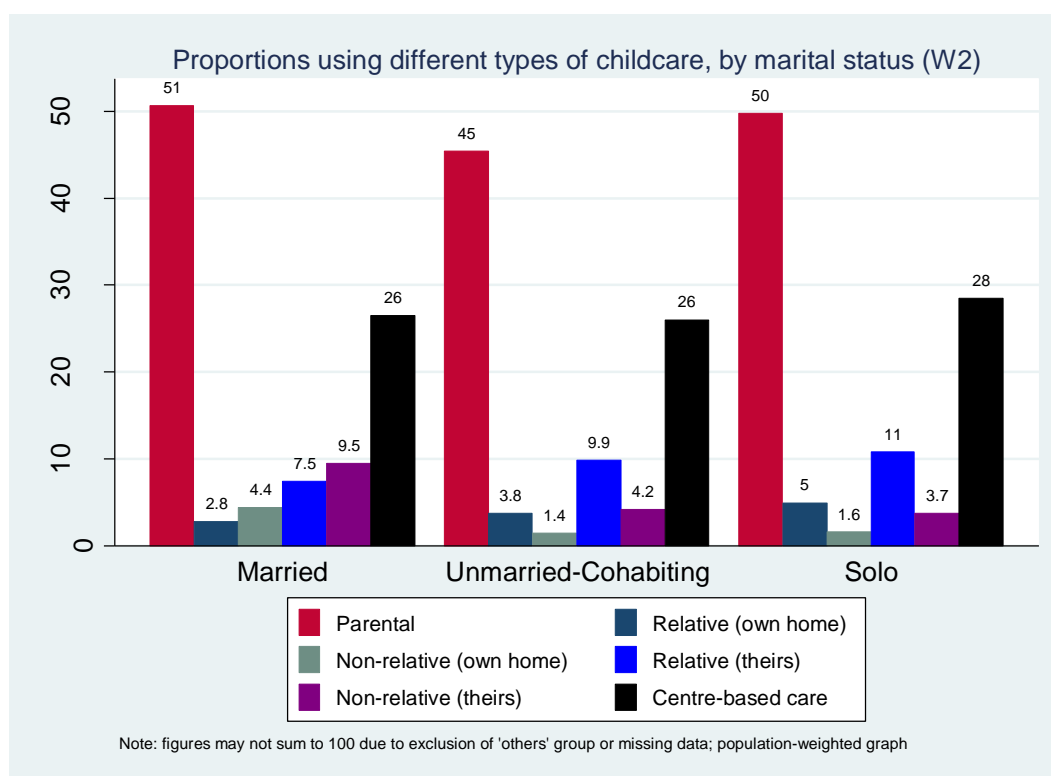
Note: population weighted table; $p=.000$; highest row proportions highlighted

Fig. 2.2



³⁴ Wave 2 question specifies non-parental care of 8 hours per week or more.

Fig. 2.3



There is some variation by marital status and by wave in the proportions of parents using non-parental care, see Fig 2.2. While 37% of W1 Solo parents said their child was being “minded by someone else”, 50% of W2 Solo parents said their child was in non-parental care (for 8+ hours per week). Meanwhile, Unmarried-cohabitant parents at W2 represented the family type with the lowest proportion, 45%, of children in non-parental care by age 3. Looking at the **main type of childcare** and variation by marital status in Fig. 2.3 we see that Married parents rely most on parental care, then on centre-based care, with about 10% using a non-relative in that person’s home (most of whom, 63%, are childminders) as their main type of care. Only about half as many Unmarried-cohabitant parents, and a smaller proportion again of Solo parents, use a non-relative, with reliance on relatives being higher among both these groups. At least a quarter of parents in each marital status group used centre-based care as their main type of care by wave 2.

Change in childcare usage from wave 1 to 2 among those using non-parental care

Among those who were no longer caring for their children themselves at wave 1 we see in Table 2.2 how childcare arrangements have changed from wave 1 to wave 2. We have complete data over both waves for about 3,000 respondents on this indicator, constrained to look at a family's 'main type' of childcare arrangement. The chart shows, for example, that those whose main childcare arrangement at W1 was having a relative mind the child at the relative's house ("Relative (theirs)") 57% were still using this childcare arrangement at W2, while 26% had switched to centre-based childcare. Of those using centre-based care at W1, 86% were still doing so at W2.

Table 2.2: Change in type of non-parental care between waves of GUI

Wave1	Wave2					Total %	Total N
	Relative (own)	Non-rel (own)	Relative (theirs)	Non-rel (theirs)	Centre-based		
Relative (own home)	33.6	5.7	16.6	3.7	40.4	100	341
Non-rel (own home)	3.6	49.1	2.0	17.0	27.2	100	274
Relative (their home)	6.7	2.5	57.6	6.8	26.4	100	668
Non-rel (their home)	1.3	9.2	5.1	59.4	24.9	100	696
Centre-based	0.8	4.7	2.9	5.7	85.9	100	959
Total %	6.4	8.9	18.9	19.5	46.2	100	-
Total N	198	302	497	579	1362	-	2938

Note: excludes 22 'Other' cases; author's own calculations; constrained to those cases reporting the 'main' childcare type; population weighted graph, p=.000

Centre-based childcare: Costs and usage

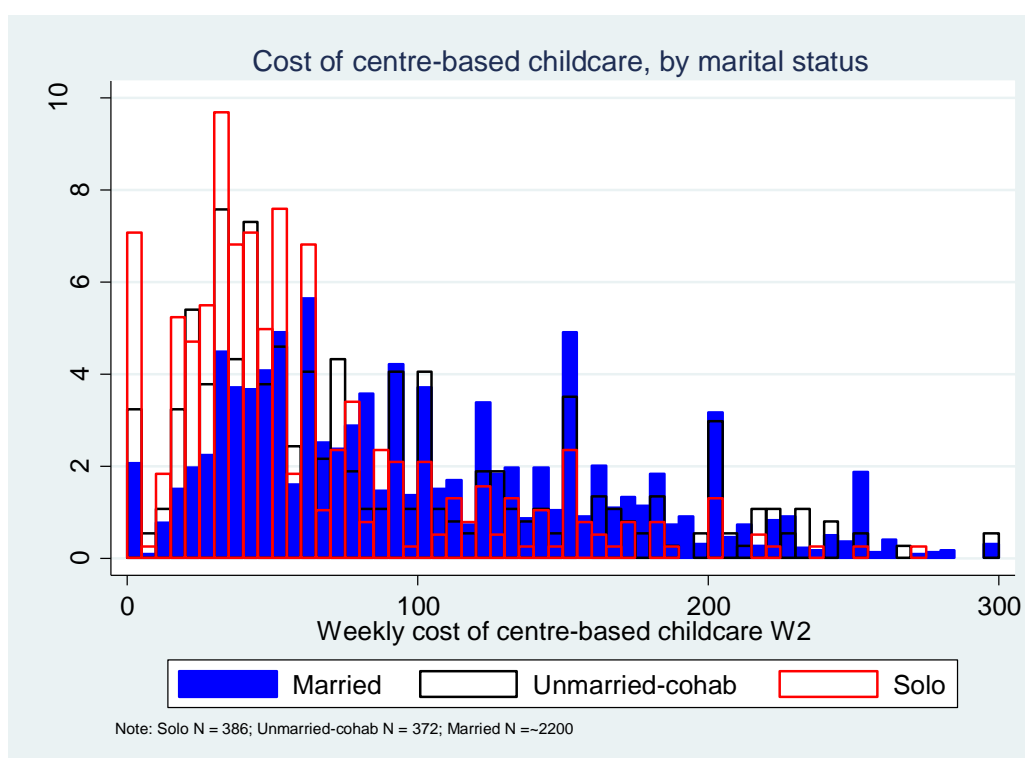
Among the parents using non-parental childcare at wave 2, the largest single category of childcare is 'centre-based'. Just over a quarter of all parents utilise centre-based childcare as their *main type of care* by the time their child is 3 years old. There is some statistically significant variation by marital status in the extent to which different groups utilise centre-based childcare, see Table 2.3, which includes people who use centre-based care where it may not be their main type of care.

Table 2.3: Centre-based childcare utilisation at W2 by marital status

Using centre-based childcare at wave 2 (%)?	Married	Unmarried	Solo	Total %
No	42	35	34	40
Yes	58	65	66	60
Total N	3793	595	592	4980

Note: population-weighted table; p=.000; highest proportions per row are highlighted

Fig. 2.4



Looking specifically at costs of centre-based childcare we see differences in the average and median amounts spent per child per week across marital status: the median amount spent by Married parents is twice that for Solo parents (Table 2.4), however Solo parents are likely to be on subsidised childcare schemes such as the CCS which will mean that they pay smaller cash amounts. We can also graph the distribution of money spent on childcare costs in Wave 2, see Fig. 2.4. The histogram shows the distribution by marital status of expenditure per week on centre based childcare.³⁵ As can be seen, most Solo parents are clustered at the lower end of the spending distribution, with half of Solo parents spending less than €42 per week in cash terms, while the distribution for Married parents is more evenly spread. In major part this is likely due to Solo parents availing of subsidised childcare schemes which reduce the cash amount they are liable to pay (see Policy Context section to this chapter). Analysis of change in childcare costs over time is not feasible. There are only 850 cases that contain data on this indicator for both waves (excluding errors). Also, the childcare needs of a 9 month old infant (W1) and a 3 year old may not be comparable, and so the costs involved are likely not comparable.

Table 2.4: Cost per week of centre-based c'care W2 (€)

<i>Marital status W2</i>	<i>Mean</i>	<i>Median</i>	<i>Std dev</i>	<i>N</i>
Married	101	85	67	2,188
Unmarried-cohabitant	78**	55	64	371
Solo	58**	42	50	382
Sample	91.5	72	66	2,941

Note: data from W2; excludes missing data on marital status variable; pop. weights applied; **significant difference from Married cost per week, $p < .01$

Childcare costs: wave 1

For purposes of comparison we present wave 1 centre-based childcare costs here in brief. There were some anomalies in the data on the indicator for childcare costs at wave1, e.g. one household reported spending €1,000 per week on childcare (€52,000 a year) when total annual household

³⁵ Graph excludes 9 cases where expenditure was recorded as €300+ p.w.

income was reported as €31,000. This is clearly an error. We exclude 31 cases where weekly childcare spend is reported as greater than €500 from W1.

Table 2.5: Cost per week of centre-based c'care W1 (€)

<i>Marital status W1</i>	<i>Mean</i>	<i>Median</i>	<i>Std dev</i>	<i>N</i>
Married	166	150	122	941
Unmarried-cohabitant	178	155	157	213
Solo	98**	50	115	82
Sample	161	150	128	1236

Note: data from W1; excludes missing data on marital status variable; pop. weights applied; **significant difference from Married cost per week, $p < .01$

Median spend for both Married and UC parents was about the same at €150-155 per week (W1). Mean spend for Married or UC parents was much higher than that for Solo parents: Solo mean spend was €98 and median was €50 (N=82). Looking at change in centre-based childcare expenditure over time, the mean reduction in spend over time was €81, while the median reduction in spend was €13 (sample made up almost entirely of Married parents).

Non-centre based care at wave 2

Small numbers of parents in W2 use other forms of childcare, we consider briefly relatives and non-relatives minding children in their own homes:

Relatives in relative's home

A substantial group of parents had their relatives mind their child in the home of their relative, and in most cases this was a grandparent (N=954):

- In 79% of cases where this form of childcare was used it was the 'main' type
- 63% of parents paid no money for this
- Mean cost per week for those who did pay was €28-37 for UC and Married parents; for Solo parents it was €12
- In 75% of cases the relative was the child's grandmother
- In 13% of cases the relative was an aunt or uncle

- 65% of parents using this form of childcare used it for 3 days per week or less
- 23% of parents using this form of childcare used it 5 days a week or more
- Mean hours per week using this form of childcare was 20

Non-relative in non-relative's home

Another group utilised non-relative childcare in that person's home, usually this arrangement involved use of a childminder (N=870):

- In 94% of cases where this form of childcare was used it was the 'main' type
- In 78% of cases where this form of childcare was used the non-relative was a childminder; in 20% of cases it was a friend/neighbour
- 31% of parents using this form of childcare used it for 5 days per week
- 30% of parents using this form of childcare used it for 2 days per week or less
- Almost everyone paid something for this and the mean cost was €100 per week; there were no significant differences by marital status
- Mean hours per week using this form of childcare was 25

Quality of centre-based childcare and correlation with weekly cost of centre-based care

There are a number of indicators concerned with childcare quality including: whether child has enough toys and books, if caregiver knows a lot about children, if child is happy, if place is clean, if child learns letters/numbers, if there are different play activities to engage in. Looking at these as indicators of quality we can assess how satisfied parents are with their childcare arrangements, specifically with centre-based childcare (as this is the single largest non-parental provider of childcare for this age group in the W2 sample). However, analysis shows that about 85% of parents 'agree strongly' that their centre provides all of the above listed things. There is very little variation; differences by marital status are negligible; numbers of non-marrieds on these indicators are very small.

Only a handful of parents (about 15 on each question) strongly disagree that their childcare centre is meeting high standards on the above indicators. However, given that we know that spending on childcare is strongly patterned by marital status it will be useful to see whether any indicators of childcare quality are correlated with spending on childcare. Other indicators of childcare quality may

include the number of children being cared for in centre-based provision and the number of adults supervising in centre-based provision.

Number of children cared for

- Mean is 10.7 and median is 10 children and this does not vary by marital status in any substantive way (N=2559)

Number of adults supervising

- The mean and median is 2 adults supervising for both Married (N=1939) and Unmarried-cohabitant parents (N=325)
- The mean and median is 3 adults for Solo parents (N=333)

Correlation of cost and select quality indicators

Table 2.6: Summary of regressions of childcare centre weekly cost on indicators of centre quality

Subjective indicators:	Correlation with weekly cost of	Significant
<i>Parents disagreeing that:</i>	<i>centre-based care?</i>	<i>at $p < .05$?</i>
Care place has plenty of toys etc	Negative	Yes
Child learns letters and numbers in care	Negative	Yes
Different play activities in care place	Negative	Yes
Objective indicators:		
Number of children in room where child is cared for...	Negative	Yes
Number of adults supervising in room where child is cared for...	Negative	No

Source: author's own calculations; bivariate regressions employing population weights

Table 2.6 summarises bivariate regressions between select indicators of centre-based childcare quality and the weekly cost of that care. Some of the indicators are subjective and asked parents how strongly they agreed or disagreed that their childcare centre made available e.g. toys, learning materials/activities, or different types of play activity. These were all negatively correlated with cost, indicating that in those centres where parents disagreed that these provisions were being made for

their children the cost of childcare was lower.³⁶ It appears that quality of childcare is indeed correlated with the cost of childcare.

There was also a negative association between cost and number of children cared for; more expensive arrangements tended to cater to smaller numbers of children. There was no significant correlation between the cost of centre-based childcare and number of supervising adults. Again, we must bear in mind that Solo parents are likely to be in receipt of subsidised childcare, thus meaning they will pay smaller amounts in cash terms. However the negative correlation here is still relevant as it would imply that Solo parents' subsidised childcare is of poorer quality.

Models of subjective evaluations of childcare quality³⁷

Looking at differences in subjective evaluations of childcare quality by marital status while controlling for income reveals two significant differences:

- Solo parents were significantly more likely than Married parents to disagree that their childcare centre is “kept clean”
- Unmarried-cohabitant parents were significantly more likely than Married parents to disagree that the childcare centre staff know “a lot about children”

These findings indicate that differences in childcare quality cannot be accounted for solely in terms of income differences and provide tentative evidence that non-Married parents may be experiencing low quality childcare.

³⁶ The average weekly spend on centre-based childcare declined with each category moving from ‘strong agreement’ to ‘disagreement’; however the average spend for the ‘strongly disagree’ category on these variables was often substantially higher, which might be explained in terms of parents who pay more for their childcare having more exacting standards, though this category was not significant relative to the reference category (‘strongly agree’).

³⁷ Ordinal logistic regression models were run on all subjective evaluation indicators of childcare centre quality, controlling for W2 marital status and W2 income and applying W2 population weights.

2.3. Impacts of childcare arrangements

The availability of wave 2 data allows us to look at how difficulties arranging childcare at wave 1 may have impacted on wave 2 outcomes. We estimate models looking at the effects of each different type of childcare difficulty on various outcomes separately due to collinearity (overlap) amongst the childcare difficulty variables. The outcomes chosen relate directly and indirectly to parents' labour market engagement, which has consequences for poverty, deprivation etc. We look firstly at the factors impacting on parents improving their level of education over time, i.e. attaining a higher level of reported education between waves 1 and 2. We also examine whether there is any evidence that difficulties with childcare impact on transitions into the workforce or transitions into unemployment. Effects, as with all models in this report, are not reported unless statistically significant, and all models control for the standard set of sociodemographic controls at wave 1.

Positive educational change over time & childcare³⁸

- Those who had to **leave or turn down a job** due to childcare difficulties at wave 1 were 1.5 times more likely to have undergone a positive educational change by wave 2 than those who had not experienced this type of difficulty.

It may be that those who were not engaged in paid work chose to use this non-work time to improve their human capital by wave 2. Those moved to report difficulties arising due to childcare may also be more motivated towards labour market engagement in general, which could partly explain their higher likelihood of improving their education level. Only 30% of those who reported this difficulty were employed (or on maternity leave for a job they planned to return to) at wave 1.

- Those who had reported the **prevention of study or training** due to childcare difficulties at wave 1 were 1.4 times more likely to have undergone a positive educational change by wave 2 than those who had not experienced this type of difficulty.

Those reporting prevention of study or training at wave 1 are likely to be those for whom study/training is a salient issue and, given this, were more likely to have succeeded in attaining a higher level of education by wave 2, i.e. there may be a selection effect at work.

³⁸ Models control for the standard set of variables; 'positive educational change' is a binary variable coded 1 if respondents reported a higher level of education at wave 2 than they did at wave 1.

- Those who reported a **restriction in work or study hours** due to childcare difficulties at wave 1 were 1.3 times more likely to have undergone a positive educational change by wave 2 than those who had not experienced this type of difficulty.

The same rationale as regards salience of the issue likely applies to this group of parents also. None of these three childcare indicators varied by marital status (i.e. there was no interaction effect).

Transition into Unemployment over time & association with childcare

Only significant effects are reported: there was no association between any of the four ‘difficulties caused by childcare’ indicators and the likelihood of transition into unemployment by wave 2 for those who were previously employed (or on maternity leave) at wave 1. However there were two significant interaction effects with marital status:

- *Interaction effect 1:* the effect of **study or training being prevented** due to childcare on likelihood of transition into unemployment varied by marital status
- *Interaction effect 2:* the effect of **work or study hours being restricted** due to childcare on likelihood of transition into unemployment varied by marital status

In order to better understand this interaction we compute predicted probabilities from the interactive models separately, see Table 2.7 (consult the Appendix for full model details).

Conditional on all the other controls in this model, the predicted probability of transition into unemployment is higher for Married parents whose **work or study hours were restricted** (due to difficulties arranging childcare) than for married parents who faced no such restriction. However, for Unmarried-cohabitant parents the probability of transition into unemployment for those facing this restriction is lower than for those facing no such restriction on their time. In interpreting this it should be recalled that Unmarried-cohabitant parents are anyway much more likely (over 2.2 times) to transition into unemployment than Married parents, even before we consider interaction effects or the potential impacts of childcare difficulties.

A similar pattern emerges for Solo parents, though Solo parents constitute a qualitatively different category insofar as they were employed (or on maternity leave) at wave 1 at only half the rate of non-Solo parents (30% employed vs 60% employed); in this regard they are not directly comparable to Married or Unmarried-cohabitant parents on this point. In sum, restrictions on hours available for work/study are significantly associated with a higher probability of moving into unemployment for

Married parents; Unmarried-cohabitant parents have a higher probability of moving into unemployment generally compared to Married parents, but this is explained due to other factors and a restriction on available time due to childcare difficulties is not prime among these.

Where parents reported that **study or training was prevented** due to childcare difficulties this predicted a higher probability of moving into unemployment for both Married and Unmarried-cohabitant parents (note weaker significance on this estimated effect for UC parents). Again, UC parents were generally more likely to transition into unemployment than Married parents, though in this model the effect of the childcare-difficulty (prevention of study) runs in the same direction for both groups, indicating potential detrimental effects on labour market attachment.

Table 2.7: Probability of transition into unemployment by marital status and by type of constraint caused by childcare difficulties

<i>Predicted probabilities of 'transition into unemployment'</i>	<i>Difficulties due to Childcare</i>	
	<i>Hours of Study/Work restricted</i>	<i>Hours not restricted</i>
Married	.039*	.027*
Unmarried-cohabitant	.050*	.070*
Solo	.019†	.062*
	<i>Study/training prevented</i>	<i>Study/training not prevented</i>
Married	.037*	.029*
Unmarried-cohabitant	.099†	.063*
Solo	.008	.051*

*p<.05, †p<.10

Free preschool year

On the free preschool year scheme, 92% of parents had heard of the scheme and planned to avail, 3% were already availing, only negligible numbers had not heard of it.

- 3% of Solo parents had never heard of the scheme (cf. 1% for Married/UCs)
- 3% of Solo parents, 2% of UCs, and 1% of Marrieds had heard of it but did not plan to avail

For the tiny number not planning to avail and for whom we have data on their reasons for not doing so (N=154), two-thirds were Married. The most frequently cited reason for not availing was that

parents “prefer to keep their child in the current arrangement” (36%) with the next most important reason (16%) being that parents “prefer to keep their child at home”, see Table 2.8.

Table 2.8: Parents’ reasons for not availing of the free preschool year

<i>Reason for not availing of free preschool year</i>	<i>N</i>	<i>%</i>	<i>Cum.</i>
Prefer to keep child in current arrangements	56	36.3	36.3
Prefer to keep child at home	24	15.6	51.9
Local/current preschool doesn’t operate scheme	21	13.6	65.6
Planning to emigrate or move	15	9.7	75.3
Child has special educational or health needs	19	12.3	87.6
Other reason	19	12.3	100
<i>Total</i>	154	100	-

Note: GUI wave 2 data

Registration for Primary School at wave 2

There appeared to be differences by marital status in whether or not the parents had registered their child for a primary school at the time of the second wave interview, see Table 2.9:

Table 2.9: % of parents who had registered their 3 year old for primary school by marital status

<i>Child registered with primary school?</i>	<i>Married</i>	<i>UC</i>	<i>Solo</i>	<i>Total</i>
No	39.5	46.5	44.8	41.1
Yes, with one school	35.6	30.6	36.8	35.2
Yes, with more than one school	9.4	8	5.9	8.7
Not registered, child will definitely attend local school	15.5	14.9	12.4	15.0
<i>Total</i>	100	100	100	100

Note: excludes 5 respondent refusals or answering ‘don’t know’; population weighted table; p=.000; highest row percentages highlighted; figures may not sum due to rounding

2.4. Summary & Implications: Childcare

General

- Difficulties with arranging childcare placed restrictions on entering into work or study/training, or restricted the hours available for same, for substantial minorities of parents at wave 1
- The most widespread difficulty was a restriction on the hours available for work/study, affecting one-fifth of all parents (W1)
- These difficulties affected Solo parents disproportionately, even accounting for income and other socio-demographic differences (W1)
- Unmarried-cohabitant parents were more likely than Married parents to report that their hours available for work/study were restricted due to childcare difficulties (W1)
- Married parents at wave 2 were more likely to be more proactive than other types of parent in terms of registering their 3 year old for a primary school

Change over time

- Most parents using non-parental care at wave 1 were still doing so at wave 2; most children who were in parental care at wave 1 remained so at wave 2
- Most movement between types of non-parental care over time was from relatives into centre-based care

Centre-based care

- Looking at main type of care, over half of all non-parental care at wave 2 took place in centre-based care for all marital status types
- 58% of Married parents, 65% of Unmarried-cohabitant parents and 66% of Solo parents used centre-based care at wave 2 to some degree
- Costs of centre-based care varied significantly by marital status: median spend was €85 for Married parents, €55 for UC parents and €42 for Solo parents

- Cost of centre-based care was negatively correlated with indicators of quality; where children were in low-cost childcare parents were less likely to agree that the centre was making adequate provision for them in terms of stimulation and activities
- Non-married parents were significantly more likely than Married parents to have a negative impression of their childcare centre on some subjective indicators of childcare quality

Impacts of difficulties arranging childcare

- Restricted hours, prevention of study, or being forced to leave/reject a job due to childcare difficulties at wave 1 were all factors correlated with an increased likelihood of improving one's human capital through acquiring a higher level of education between waves; this may be due to selection effects
- Difficulties arranging childcare were seen to impact on the likelihood of parents transitioning into unemployment between waves of the study, but this varied depending on marital status
- Restrictions on hours available for work or study were significantly associated with a higher probability of moving into unemployment for Married parents; this restriction did not impact Unmarried-cohabitant parents in the same way, but it must be borne in mind that UC parents have a higher probability of moving into unemployment generally compared to Married parents, and this is not entirely accounted for by socio-demographic differences
- Prevention of study or training affected both Married and Unmarried-cohabitant parents, being associated with a higher probability of transitioning into unemployment in each case for those faced with this difficulty³⁹

³⁹ It should be remembered that the absolute number of respondents transitioning into unemployment between waves was small, affecting about 200 respondents in total.

Policy implications

- Labour market entry for Solo parents is being restricted by difficulties arranging childcare as is potential for study or training: targeted childcare subsidies for Solo parents seeking to improve their education or actively seeking work will assist with labour market integration and with human capital acquisition. The fact that subsidised schemes already exist in Ireland, like the Community Childcare Subvention scheme (CCS), but that such problems are still encountered by parents is an issue of concern. While the latest available GUI data are a couple of years old now, questions must nonetheless be raised about the adequacy of subvention arrangements. Childcare providers participating in the CCS scheme do so voluntarily and this has implications for the adequacy of coverage with some parents potentially losing out for simple reasons of proximity if there are no participating providers nearby or within feasible travelling distance. Barriers to participation by childcare providers – for example, backdated payments to providers could cause difficulties if operating at a significant lag – should be assessed and removed where feasible. The free pre-school year (ECCE) is used by almost all parents, yet it only provides 3 hours of free pre-school per day, with parents liable for all extra costs incurred beyond this limit; there are perhaps questions to be raised here about the adequacy and resource efficiency of these arrangements
- Wide disparities exist in spending on centre-based care, with Solo parents spending far less than other groups per week and this can most likely be explained in terms of Solo parents receiving the highest levels of subsidy (and thus paying the lowest cash amounts). There is some evidence to suggest a negative correlation between cost and quality of centre-based childcare. Even though Solo parents are likely to be receiving subsidy, they are more likely to express reservations about the quality of their childcare. As poor quality care may be detrimental to children's development, especially among the already disadvantaged (Melhuish, 2003; Phillips and Lowenstein, 2011), it may be worth considering childcare subsidies targeted specifically at Solo parents of very young children. Likewise, ongoing efforts should be made to ensure that minimum quality standards are fit for purpose and enforced across all types of childcare whether subsidised or not
- Prevention of study or training by childcare difficulties, or restriction of the hours available to parents for work/study, were implicated in parental transition into unemployment over time. This may suggest a need for more creative thinking about the provision of childcare

arrangements, perhaps in the form of childcare subsidies targeted at women in work and at specific education or training programmes deemed likely to be beneficial to employment outcomes. This is quite separate to childcare schemes such as the CETS scheme which helps women who are unemployed but wish to undertake a vocational training course or enter into a Community Employment scheme. The withdrawal in 2014 of the SOLAS (formerly FÁS) training allowance for those on One-Parent Family Payment may also be relevant here, if parents had been reliant on this to subsidise childcare arrangements while undertaking training

3. Parents' Health and Parenting

3.1. Literature on Stress, Depression, Parenting styles

The *Growing Up in Ireland* data facilitate exploration of a wide range of indicators of parental health. Here we focus on changes in parental health outcomes between waves 1 and 2 of the study, and in particular on outcomes that have been linked to child-related impacts. Specifically we focus on stress and depression scores, as measured by the self-report items in the GUI questionnaires at both waves. We also look at aspects of parenting style and the quality of parent-child interactions. The focus in this chapter is on parents and parenting; we look specifically at 3 year old infant outcomes later in the report.

Higher maternal stress has been linked to a higher risk of maternal depression (Lancaster et al., 2010; Webster-Stratton and Hammond, 1988) as well as to negative parenting behaviours which are sometimes implicated in child socio-behavioural outcomes (Anthony et al., 2005; Crnic et al., 2005; Deater-Deckard, 1998; Pinderhughes et al., 2000). Maternal depression has in turn been linked to increased odds of anxious/depressed, attention deficit, and oppositional defiant disorders in 3 year olds (Meadows et al., 2007) as well as to negative parenting behaviours (Lovejoy et al., 2000). Anthony et al. (2005) note a number of studies showing that parents with elevated stress describe their children as 'difficult', lack warmth and responsiveness, have expectations for child behaviour out of sync with their child's developmental age, or employ inconsistent and harsh discipline. Poor parenting is linked to maladjustment in children and failures of emotional regulation, with children of more supportive, emotionally available parents more likely to be socially competent and less prone to negative peer interactions (Denham et al., 1991, 1997; Masten and Coatsworth, 1998).

There is also evidence to suggest direct linkages of stress to child outcomes. Even where negative emotional responses involving stress are not directed towards the child, a household where such responses are chronic among parents may impact on children through what has been termed the 'contagion of affect induction' (Denham et al., 1997), which has been shown to directly impact child social-emotional competence (Denham, 1989, 1993). Other studies have likewise found a direct impact of stress on child behavioural outcomes, one that was not mediated by parenting behaviours (Anthony et al., 2005; Crnic et al., 2005).

A number of studies have found higher levels of mental health disorders like depression among single mothers when compared to mothers in cohabitant living situations (Murphy et al., 2008). High levels of maternal stress co-occur with adversity experienced by the mother, such as socio-economic hardship, poverty, overcrowding, poor neighbourhoods etc., and single mothers are at higher risk of economic hardship (Bradley and Corwyn, 2002; Petterson and Albers, 2001). The impact of low socioeconomic status and maternal health issues on children and child development is discussed in the next chapter. In previous research on Irish single parents, 20% have reported that they have a health condition or disability that limits their ability to work; this compares to an EU average (SILC data, 2006) of 22.8% of single parent households with children reporting a 'chronic illness or health problem' (Murphy et al., 2008).

The GUI data allow for the exploration of a number of different parenting practices, including parental attitudes and allowances made towards the prevalence of television and books in the home and the frequency with which parents engage their child in stimulating games and/or learning activities.

Longitudinal research has shown that early television exposure in children (at 1 years or 3 years) is associated with attentional problems later in life, with the authors noting that television viewing at such young ages is controversial and discouraged (Christakis et al., 2004). Results showed that hours of television watched per day at age 1 or age 3 was significantly associated with having attentional problems at age 7. The same study showed that at age 3 children watched an average of 3.6 hours of TV per day (Ibid.). Other studies have found that television viewing time is positively associated with social problems, delinquent or aggressive behaviour, and externalization (Ozmert et al., 2002).

Aims

This chapter aims to explore and assess:

- Parental stress scores, including change over time in same
- Parenting styles and the characteristics which explain differences in parenting styles
- Parent-child relationship, including conflict
- Parent-child activities at age 3, including practicing alphabet, counting, dealing with misbehaviour, watching television etc.

3.2. Results

Change in Depression score over time

Looking at change in depression scores between waves shows that more Married parents than other groups experienced no change in their score on the depression scale from wave 1 to wave 2: about 34% of Married parents experienced no change; compare this to the 21% of Solo parents who experienced no change in their depression score whether positive or negative. Table 3.1 shows the pattern of change and how these proportions differ by marital status.

Table 3.1: Change in depression index score over time by marital status

<i>Depression score, change over time</i>	<i>Married</i>	<i>Unmarried-Cohabitant</i>	<i>Solo</i>	<i>Total %</i>	<i>Total N</i>
No change	34.2	26	21	31.5	3016
Lower Dep score	33.3	37	40	34.6	3305
Higher Dep score	32.5	36.5	39	33.98	3227
<i>Total %</i>	100	100	100	100	-
<i>Total N</i>	7097	1275	1176	-	9548

Note: population weighted table; p=.000; highest proportions per row are highlighted

Statistical modelling allows us to control for a range of possible factors that may have contributed to change in the PCG's recorded depression score over time. Multinomial logistic modelling of three categories of depression score change (lower depression score over time; higher depression score over time; no change, with the last category being the reference category) shows:⁴⁰

Decrease in depression score over time:

- **Marital status:** Solo and Unmarried-cohabitant parents had a higher relative risk than Married parents ($p < .10$) of being in the lower depression score group as opposed to the No Change group; Solo parents were 1.34 times more likely to be in this group and Unmarried-cohabitants were 1.24 times more likely to be in this group than Married parents

⁴⁰ N = 7913; reported coefficients in multinomial logistic regression are relative risk ratios, not odds ratios.

- **Higher likelihood of being in Lower Depression as opposed to No Change group:** parents who: experienced a decrease in their stress levels from wave 1 to wave 2; recorded higher levels of conflict with their child on the Pianta scale; felt they did not receive sufficient help from outside the home; experienced a change in their current economic status from non-work into 'working' ($p < .10$); adopted a more hostile parenting style; experienced a crisis pregnancy (1.7 times more likely to have experienced a decrease in depression score); or were affected by bad health at wave 1, or by a disability, or by a family history of poverty – were all more likely to have experienced a *decrease over time in their depression score* as opposed to no change
- **Higher likelihood of being in the No Change as opposed to the Lower Depression group:** those with larger families (more children in household) were more likely to have experienced no change as opposed to a decrease in depression over time

Increase in depression score over time:

- **Marital status:** Solo parents were 1.57 times more likely than Married parents to be in the increased depression group as opposed to the No Change group; Unmarried-cohabitant parents were 1.44 times more likely to be in the increased depression group as opposed to the No Change group
- **Higher likelihood of being in Increased Depression as opposed to No Change group:** those parents who: experienced *increased stress* from wave 1 to wave 2; experienced higher levels of *conflict with their child* as measured by the Pianta scale; *transitioned* from Unmarried-cohabitant parenthood into Marriage ($p < .05$) OR transitioned from Unmarried-cohabitant parenthood into Solo parenthood ($p < .10$); felt they did not receive *sufficient help* from outside the home; felt that it was now *harder to make ends meet* than it had been at wave 1; adopted a more *hostile parenting style*; were affected by a *disability* or by a *family history of poverty* – were all more likely to have experienced an increased depression score over time as opposed to No Change
- **Higher likelihood of being in the No Change as opposed to the Increased Depression group:** those with larger families (more children in household) were more likely to have experienced no change as opposed to an increase in depression scores over time

Change in Stress score over time

There was more variation in stress scores over time than was seen with depression scores and most parents surveyed experienced a decrease in stress scores between waves 1 and 2. Table 3.2 shows that only a small proportion of respondents experienced 'no change' in stress levels (about 8%), about two-thirds or 66% (59% for Solo parents) experienced a decrease in reported stress between waves, with the remainder experiencing an increase in stress.

Table 3.2: Change in stress index score over time by marital status

<i>Stress score, change over time</i>	<i>Married</i>	<i>Unmarried-Cohabitant</i>	<i>Solo</i>	<i>Total %</i>	<i>Total N</i>
No change	8.5	8.0	6.4	8	770
Lower Stress score	66	65	59.8	65	6245
Higher Stress score	25.4	27	33.8	26.8	2556
<i>Total %</i>	100	100	100	100	-
<i>Total N</i>	7113	1281	1177	-	9571

Note: population weighted table; $p=.000$; highest proportions per row are highlighted

Modelling the likelihood of experiencing different shifts in stress levels over time (with 'no change' as the reference category) while controlling for other relevant factors shows:

Decrease in recorded stress over time:

- **Marital status:** Solo parents were 1.6 times more likely than Married parents to experience a decrease in stress over time as opposed to no change; there was no significant difference between Unmarried-cohabitant and Married parents; there was no difference between Solo and Married or Solo and Unmarried-cohabitant parents
- **Higher likelihood of being in Lower Stress as opposed to No Change group:** decrease in level of depression over time meant that respondents were more likely to also experience a decrease in level of stress over time (1.6 times more likely than experiencing 'no change' in stress levels); parents who scored higher on the positive aspects Pianta scale for parent-child relationships were more likely to experience decrease in stress as opposed to 'no change' ($p<.10$); those with larger families were more likely to experience a decrease in stress levels

over time from wave 1 to wave 2; those who drank while pregnant were more likely to experience a decrease in stress levels as opposed to no change ($p < .10$)

- **Higher likelihood of being in No Change as opposed to Lower Stress group:** increased difficulty making ends meet from wave 1 to wave 2 was associated with a higher likelihood of experiencing 'no change' in stress levels as opposed to a decrease in recorded stress

Increase in recorded stress over time:

- **Marital status:** Solo parents were 1.7 times more likely than Married parents to have experienced an increase in stress over time; there was no difference between Solo and Married or Solo and Unmarried-cohabitant parents
- **Higher likelihood of being in Higher Stress group as opposed to No Change group:** those who registered an *increase in depression scores* over time were more likely to also register an increase in stress scores over time as opposed to registering no change; higher scores on the *Pianta conflict scale* were associated with a higher likelihood of experiencing increased stress over time as opposed to no change (this relationship may cut both ways, and higher stress could be leading to higher levels of parent-child conflict)
- **Higher likelihood of being in No Change group as opposed to Higher Stress group:** those with larger families and those with a family history of poverty were more likely to experience no change in stress levels as opposed to an increase in stress

Stress and Depression scores of PCG at wave 2

Leaving aside the issue of *change* in scores over time we also consider differences in stress and depression scores of PCGs at wave 2 and the characteristics associated with such differences.

Stress at wave 2:

- **Marital status:** Solo parents had significantly higher scores than Married and Unmarried-cohabitant parents
- **Family transitions:** Unmarried-cohabitant parents who transitioned into marriage were predicted to have significantly higher stress scores at wave 2 relative to all other parents
- **Higher stress scores:** those with higher levels of education relative to those with poor education had higher scores; those who recorded higher scores at wave 1 were predicted to

have significantly higher scores at wave 2; experience of crisis pregnancy, complications in pregnancy, parental disability, or not getting enough external help all predicted higher stress scores at wave 2; mothers who drank alcohol while pregnant were also predicted to have higher stress scores by wave 2

- **Lower stress scores:** rural dwellers, and those with larger families at wave 2 were predicted to have significantly lower levels of stress at wave 2 than urban dwellers and those with smaller families respectively
- **Model 2:** an expanded model controlling for these factors and also for **childcare difficulties at W1 restricting hours for work or study** found that this restriction predicted significantly higher levels of stress at wave 2; other childcare-difficulty indicators were not significant

Depression scores at wave 2:

- **Marital status:** Solo parents and Unmarried-cohabitant parents had significantly higher depression scores than Married parents, controlling for other relevant factors
- **Higher depression scores:** income was a significant predictor of depression scores at wave 2 and those in lower income quintiles had significantly higher predicted scores relative to those in the highest income quintile; experience of crisis pregnancy, parental disability, being in generally poor health, or not getting enough external help all predicted higher scores at wave 2; mothers who drank alcohol or smoked while pregnant were also predicted to have higher scores at wave 2; depression scores at wave 1 were also significantly and positively correlated with scores at wave 2

Pianta scales of parent-child relationship

All comparisons are bivariate regressions employing population weights; these results do not yet control for other possible determinants of the quality of parent-child relationships. See Fig. 3.1 for graphical representation of differences in Pianta scales across marital status type.

On the **Pianta positive aspects** scale:

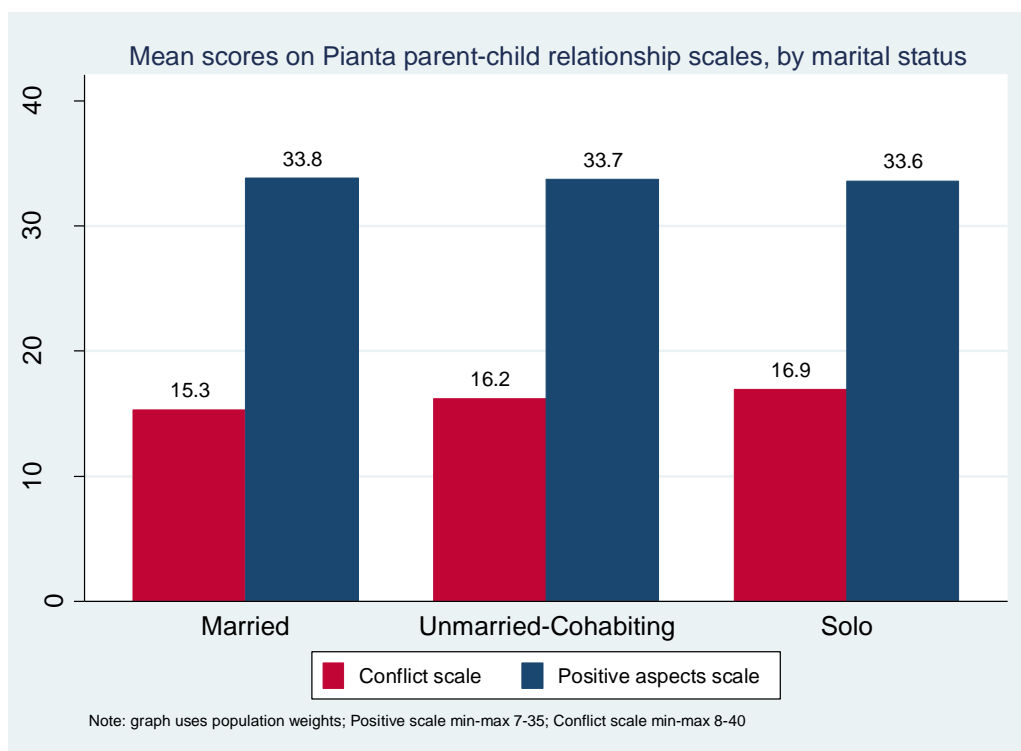
- Solo parents are significantly predicted to have a lower score than Married parents (-0.22 units); however note that this difference disappears when controlling for other factors

- There are no significant differences between Unmarried-cohabitant/Married parents or between Solo/Unmarried-cohabitant parents

On the **Pianta conflict scale**:

- Unmarried-cohabitant parents are significantly predicted to have a higher score than Married parents (+0.87 units)
- Solo parents are significantly predicted to have a higher score than Married parents (+1.65 units)
- Solo parents are significantly predicted to have a higher score than Unmarried-cohabitant parents (+0.77 units)
 - However note that these significant differences all disappear when controlling for other factors (see below)

Fig. 3.1



Accounting for differences in extent of parent-child conflict (Pianta subscale)

The dependent variable here is the **Pianta conflict subscale**, and we here estimate results controlling for factors relevant to parent-child relationships. Results show:

- **Marital status:** there are no differences by marital status on the conflict subscale when controlling for other relevant factors
- **Lower levels of parent-child conflict:** those in the third and fourth income quintiles showed less conflict with their child than those in the highest income quintile ($p < .10$); parents registering more *warmth and consistency in parenting style*, as well as more *positive relationship aspects* on that Pianta subscale, were predicted to have lower levels of conflict with their child; native *English speakers* were predicted to have lower levels of conflict; where the child was *male*, conflict levels were predicted to be lower
- **Higher levels of parent-child conflict:** higher levels of parental education predicted higher levels of parent-child conflict; parents adopting a more *hostile parenting style* were predicted to have higher levels of conflict;

higher *SDQ* scores on the part of the child were associated with higher levels of parent-child conflict, though care should be taken on interpretation of this point as it is difficult to pinpoint causation (*SDQ* scores may be high due to high levels of parent-child conflict; or parents may perceive themselves to be in more frequent conflict due to the child's high levels of behaviour and conduct problems as measured by the *SDQ* scale);

those who experienced either a decrease or an increase in *depression levels over time*, relative to those who experienced no change, had higher levels of conflict ($p < .10$); those who experienced an increase in *stress over time* (relative to those experiencing no change) had a higher level of conflict;

those who experienced a *crisis pregnancy* were predicted to have higher levels of conflict even controlling for other factors ($p < .10$);

those PCGs with a *disability*, who felt they didn't receive enough *help from outside the home*, who drank *alcohol while pregnant* or who had a *family history of poverty* were all predicted to have higher levels of conflict with their child, controlling for the other factors in the model

Parenting style

Fig. 3.2 shows little variation by marital status in scores on parenting style indicators. The following statistical tests are bivariate regressions employing population weights:

On the **Warmth scale** the only significant difference is:

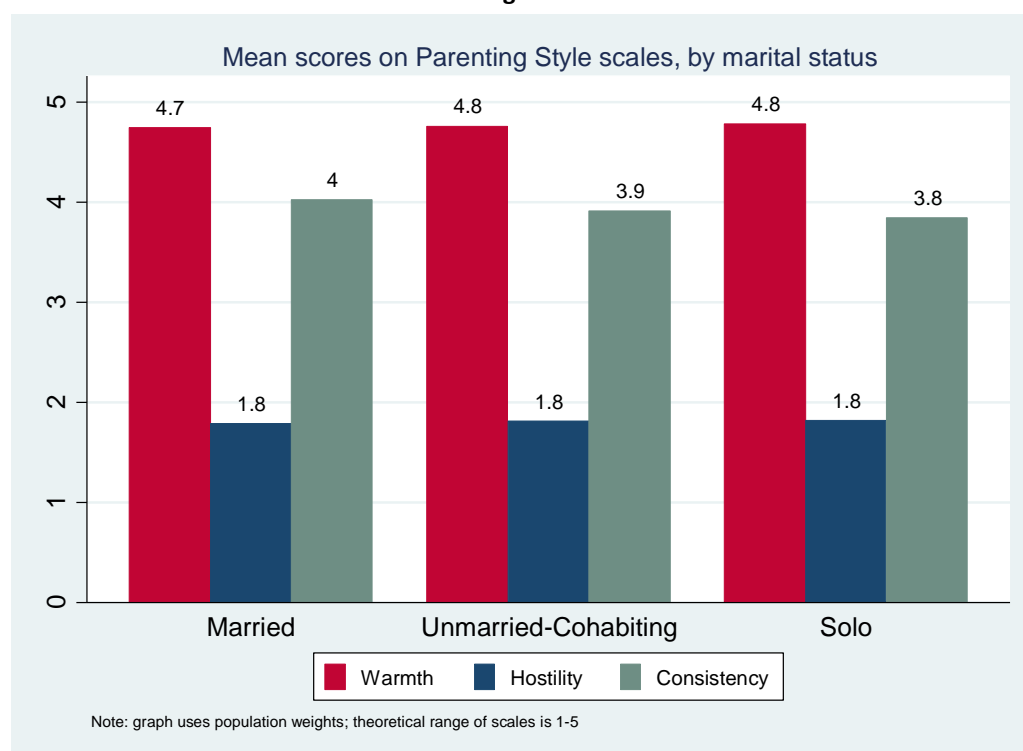
- Solo parents are significantly predicted to have a very slightly higher score than Married parents (0.03 units)
- There are no significant differences between Unmarried-cohabitant/Married parents or between Solo/Unmarried-cohabitant parents

On the **hostility scale** there are: no significant differences by marital status between any grouping.

On the **consistency scale**:

- Unmarried-cohabitant parents are significantly predicted to have a lower score than Married parents (-0.11 units)
- Solo parents are significantly predicted to have a lower score than Married parents (-.18 units) and a lower score than Unmarried-cohabitant parents (-0.07 units; $p < .10$)

Fig. 3.2



Accounting for differences in consistency of parenting style

Some of the marital status differences reported here remain significant even controlling for other factors:

- **Marital status:** Unmarried-cohabitant parents are slightly less consistent in their parenting style than Married parents, controlling for other factors ($p < .10$)
- **Less consistency:** lower income, lower levels of education, having smoked while pregnant, larger families, older mothers, and frequent babysitting by grandparents were all associated significantly with lower levels of consistency in parenting style; parents scoring higher in terms of the hostility index were significantly more likely to score lower on the consistency index; meanwhile, where infants at 3 years manifested more socio-behavioural difficulties (higher SDQ scores) this was associated with lower levels of parental consistency – it is difficult to pinpoint the direction of causation on this latter issue (low consistency may engender behavioural difficulties or vice versa)
- **More consistency:** parents scoring higher on the positive parent-child relationship (Pianta) index were predicted to be more consistent; native English speakers, families where the study child was male ($p < .10$), and those with a family history of poverty were also predicted to be more consistent in their parenting style

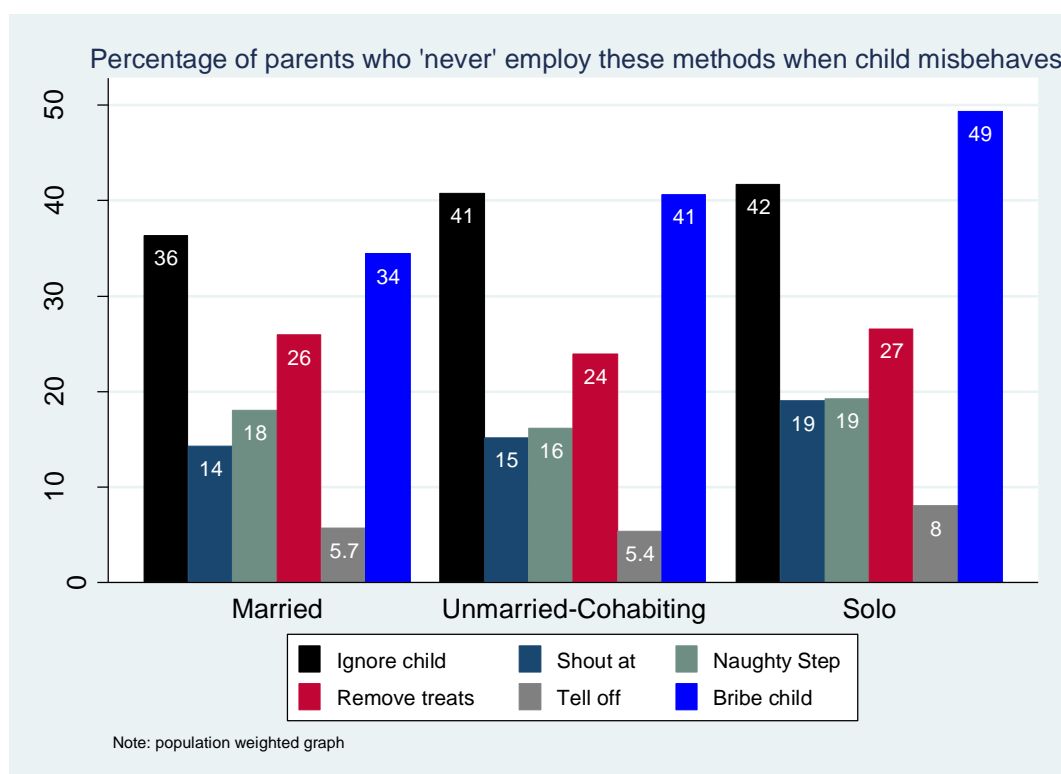
Accounting for differences in hostility of parenting style

- **Marital status:** Solo parents show slightly less parenting hostility than Married parents, controlling for other factors
- **Control variables:** see the Appendix for full list of control variable effects. There were negative correlations (less hostility) for low levels of education and/or income. Higher SDQ scores and the PCG reporting they didn't get enough help around the home were associated with higher levels of parenting hostility. Interestingly, change in depression scores over time was associated with higher levels of parenting hostility, *for both* an increase in depression scores or a decrease in such scores, relative to those recording no change

Dealing with misbehaviour

When asked about the frequency of different methods used by parents to deal with their child's misbehaviour, there were statistically significant associations (chi-square tests) with marital status on all indicators except for smacking (i.e. there was no association between frequency of smacking and marital status). Fig. 3.3 illustrates differences by marital status in terms of the proportions of parents who reported they would 'never' employ the following methods to deal with their child's misbehaviour. Almost half of Solo parents said they would never 'bribe their child' to stop misbehaving compared to 34% of Married parents. The proportions of Unmarried-cohabitant and Solo parents who said they would never ignore their misbehaving child were higher than the proportion of Married parents who said they would never take this approach to misbehaviour. These differences in dealing with misbehaviour may be of interest insofar as they are all correlated significantly ($p < .05$) with infant socio-behavioural outcomes as measured by the SDQ scale; we discuss the SDQ scale in detail elsewhere in this report.

Fig. 3.3



Twoway (Pearson) correlations between categorical indicators identifying those parents who ‘never’ engage in any of the above methods of correcting misbehaviour and SDQ scores all show negative associations, Table 3.3; the children of parents who never employ these methods have better socio-behavioural outcomes than children of parents who use these methods.

Table 3.3: Twoway correlations of parents who would ‘never’ employ a correction method, and infant SDQ scores at 3 years

	<i>SDQ score correlation</i>
Ignore child	-0.1309*
Shout at	-0.1213*
Naughty Step	-0.0348*
Remove Treats	-0.0523*
Tell off	-0.0450*
Bribe	-0.1031*

*p<.05

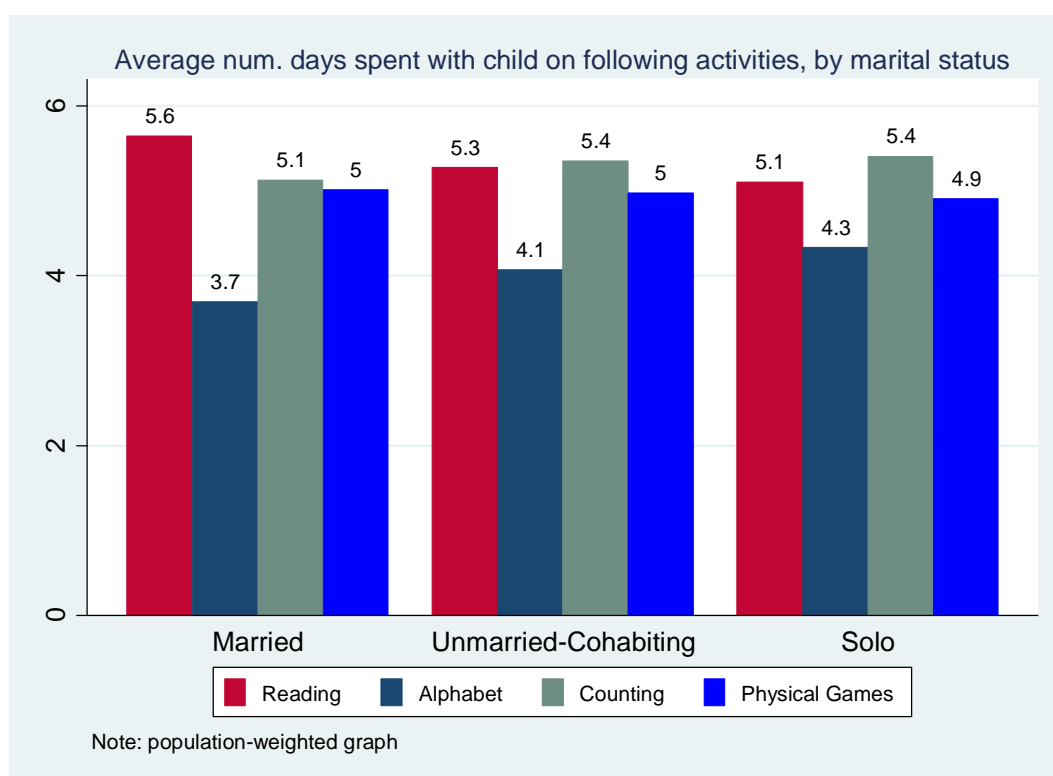
These correlations all remain significant and negative when controlling in regression models for the standard set of socio-demographic indicators used throughout this report. This is in line with findings elsewhere in this report showing that parenting styles and habits are significantly associated with child socio-behavioural outcomes.

3.3. Parent-child activities and learning

Looking at the frequency with which parents engage in certain activities like reading, counting and playing with their three-year old reveals some initial apparent differences by marital status, Fig. 3.4. For example, Married parents read to their child on average 5.6 days in the week, compared to 5.1 days in the week for Solo parents.

We next explore if these differences remain when controlling for the standard set of sociodemographic factors, plus two other factors likely to impact on the frequency with which parents engage in these activities, i.e. parents feeling they get ‘sufficient help’ from outside the home and whether or not the parents work outside the home.

Fig. 3.4



Reading

- **Marital status:** there are no differences by marital status in number of days per week spent reading to child once other factors are accounted for
- **Family transition:** Solo parents who transitioned into any other family type spend less time reading to their child than other respondents
- **Higher frequency:** the better educated and those in higher income quintiles spend more time per week reading to their children, as do older parents and native English speakers
- **Lower frequency:** parents who smoked ($p < .10$) or drank alcohol while pregnant, as well as those with larger families, those working outside the home, those with a family history of poverty, and those living in rural not urban areas spent less time per week reading to their three-year old

Alphabet

- **Marital status:** there are no differences by marital status in number of days per week spent practicing the alphabet with the child once other factors are taken into account
- **Family transition:** Unmarried-cohabitant parents who transitioned into marriage spend more time on this activity than other parents ($p < .10$)
- **Higher frequency:** native English speakers spend more time on the alphabet with their child
- **Lower frequency:** the better off and those with the highest education levels spend less time per week practicing alphabet with their child than the less well-off and those with the poorest education levels; having a larger family, living in a rural area, working outside the home are all associated with less time spent on this activity; those who feel they get insufficient help from outside the home ($p < .10$) as well as women who drank while pregnant also spend less time on this activity

Counting

- **Marital status:** there are no differences by marital status in number of days per week spent practicing counting with the child once other factors are taken into account
- **Family transition:** Unmarried-cohabitant parents who transitioned into marriage spend more time on this activity than other parents
- **Higher frequency:** native English speakers and those who smoked while pregnant ($p < .10$) spend more time on this activity

- **Lower frequency:** those in higher income quintiles, those working outside the home, those with larger families, those who drank alcohol while pregnant, and those living in rural areas were all predicted to spend less time on this activity with their three-year old

Physical Games

- **Marital status:** Solo parents spent significantly less time playing physical games with their three-year old than Married parents; there was no difference between Solo parents and Unmarried-cohabitants
- **Higher frequency:** native English speakers and those with larger families spent more time per week on physical games with their child
- **Lower frequency:** those working outside the home, those who feel they get insufficient help from outside the home, and women who drank while pregnant all spent significantly less time on this activity per week with their child

Books that child has access to at home

Table 3.4 shows differences in terms of the numbers of books available to the child by family status. The figures in the table are column percentages.

Table 3.4: Books available to child at home by marital status W2 (row %)

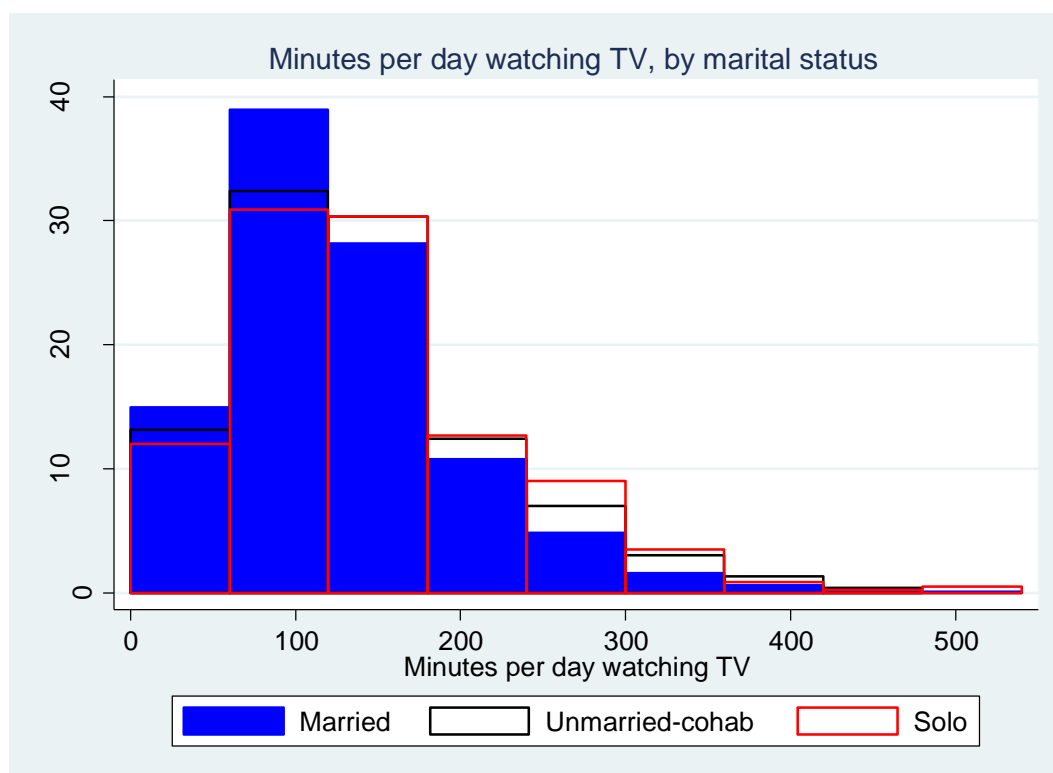
	<i>Married</i>	<i>UC</i>	<i>Solo</i>	<i>Total</i>
None	0.4	0.5	0.7	0.4
Less than 10	5.6	10.8	15.5	7.6
10 to 20	16.4	26.0	33.7	20.0
21 to 30	17.9	22.4	18.7	18.5
More than 30	59.7	40.2	31.5	53.4
Total %	74.1	11.4	14.5	100
Total N	7205	1296	1198	9699

Note: population weighted table; p=.000; highest proportions per row are highlighted

Time spent watching TV

There appear to be differences across marital status type in the number of minutes per day that the child spends watching TV or videos/DVDs. Fig. 3.5 shows that a higher proportion of Solo parents (the red outline) allow their child to watch more minutes per day than Married parents (solid blue).

Fig. 3.5



The mean number of minutes 3 year old infants spent watching TV per day was 110 minutes (Std Dev: 71 mins). However, controlling for other determinants shows that putative differences by family type in the amount of time parents allow their children to watch TV are in fact explained away by other factors.

- **Marital status:** there are no differences by marital status when we control for other factors
- **Higher amount of time spent watching TV:** smoking while pregnant and the mother being in poor health are associated with children watching more minutes of TV per day
- **Lower amount of time spent watching TV:** those in higher income quintiles and those with higher levels of education allow their child to watch less television than the less well-off and

those with lower levels of education respectively; older parents, those working outside the home, and native English speakers all allow fewer minutes of television per day

TV or computer (incl. games console) in the child's bedroom

Table 3.5 shows the proportions of parents by marital status who have a TV or computer (incl. games console) in their child's bedroom. The sample proportion of parents who do is 16%, but the proportion of Solo parents is over twice this at 34%.

Table 3.5: Proportion of parents who have TV/computer in child's room, by marital status

<i>TV in child's room</i>	<i>Married</i>	<i>UC</i>	<i>Solo</i>	<i>Total</i>
Yes	11.8	23.4	33.7	16
No	88.2	76.6	66.3	84
Total N	7203	1296	1198	9697

Note: population weighted table; p=.000; highest proportions per row are highlighted

These differences remain even controlling for other relevant factors when modelling the likelihood that the parent has a TV/computer in their child's room:

- **Marital status:** Unmarried-cohabitant parents are significantly more likely to have a TV in their child's room than Married parents, while Solo parents are more than twice as likely
- **Family transitions:** Solo parents who transitioned into any other family type have odds 76% higher of having a TV/computer in their child's room
- **Higher likelihood:** factors associated with a higher likelihood of this include having a larger family, a family history of poverty, a history of smoking while pregnant, and the mother being in poor health
- **Lower likelihood:** older parents, those who felt they didn't receive sufficient help from outside the home ($p<.10$), and native English speakers were all less likely to have a TV/computer in their child's room

3.4. Summary and Implications: Parent's Health and Parenting

Parents' health

Parents' stress and depression scores at wave 2

- Solo and Unmarried-cohabitant parents had significantly higher scores on both indexes of stress and indexes of depression at wave 2 controlling for other factors

Change in parents' depression scores from wave 1 to wave 2

- Solo and Unmarried-cohabitant parents were more likely to register a change in their depression score over time than Married parents, whether positive or negative
- These differences by marital status remained when controlling for other factors
- Transitions between family status types from wave 1 to wave 2 were seen to be associated with higher depression scores, whether transitioning from UC parenthood into marriage or from UC parenthood into Solo parenthood
- Increased stress, parent-child conflict and hostile parenting styles were all associated with a higher likelihood of experiencing increased depression scores as opposed to no change between waves of the GUI study

Change in parents' stress scores

- The majority of parents, whatever their marital status (59-66%), recorded a decrease in their recorded self-report stress scores from wave 1 to wave 2
- However, Solo parents were significantly more likely to report an increase in stress than other marital status types, controlling for other factors
- Higher scores on the depression index and/or higher levels of parent-child conflict were also associated with higher stress levels, indicating the complex interrelationship of these factors

Parenting

Parent-child relationship: Conflict (Pianta) scale

- There were no significant differences by marital status on scales of parent-child positive relationships or conflictual relationships when controlling for other factors
- Similarly, transition into any new type of family/marital status between waves was not associated with the quality of the parent-child relationship
- Increase in reported parental stress over time was associated with higher levels of parent-child conflict
- Any change in reported depression scores over time – either positive or negative – was associated with higher levels of parent-child conflict ($p < .10$), however the magnitude of these effects was about half that of an increase in parental stress
- Those who experienced a crisis pregnancy also had higher levels of conflict with their child ($p < .10$)
- Parental disability and a perceived lack of help from outside the home also predicted higher levels of parent-child conflict

Parenting style: warmth, consistency, hostility

- There were some small though significant differences in parenting style by marital status even controlling for other factors: Solo parents exhibited slightly less parenting hostility than Married parents; Unmarried-cohabitant parents exhibited slightly less consistency than Married parents
- Change in depression scores over time, either an increase or a decrease, was associated with a more hostile parenting style

Dealing with misbehaviour

- Different methods of dealing with misbehaviour – ignoring, shouting at, telling off, or bribing one's child, along with removing treats or placing the child on the naughty step – are patterned by family type

- Solo and Unmarried-cohabitant parents are less likely than Married parents to engage in certain practices, e.g. less likely to 'bribe', shout at, or ignore their misbehaving child
- Different methods of dealing with misbehaviour are associated with child socio-behavioural outcomes at three years
- Children of parents who 'never employ' these methods have better socio-behavioural outcomes (lower SDQ scores) than children of parents who use these methods, even controlling for other factors

Parent-child activities and learning

- There are no differences by family type (when controlling for other factors) across a number of indicators of activities that parents might engage in with their infant, including reading, practicing the alphabet, and counting
- However, Solo parents are significantly less likely to engage in physical games than Marrieds
- Working outside the home, feeling they do not get enough help from outside the home, and having a larger family were all factors frequently associated with a lower likelihood of parents engaging in these kinds of learning activities
- Books: The availability of books for children in the home was associated with marital status; Solo parents tended to have fewer books than Married or Unmarried-cohabitant parents, and UC parents tended to have fewer books than Married parents
- Television: there were no differences by marital status in time spent watching TV
- Any differences in hours of television were explained instead by differences in income and education, with factors such as the mother's age (young mothers let their children watch more TV), mother being in poor health, or working outside the home also being relevant
- Television or video games in child's room: Unmarried-cohabitant parents and Solo parents were significantly more likely to allow this than Married parents, controlling for other factors
- TV or video games in child's room: having a larger family, being a younger parent, or a family history of poverty were other relevant factors associated with allowing this

Policy implications

- Increased stress, parent-child conflict and hostile parenting styles were all associated with a higher likelihood of experiencing increased depression as opposed to no change between waves of the GUI study. These factors are all inter-related in a complex manner, making it difficult to pinpoint causation with certainty. Interventions aimed at helping parents cope with stress and the problems caused by stress should take account of the complex connections between these areas. Holistic strategies seem likely to be more effective than piecemeal approaches
- The finding that family type transitions – whether into marriage or out of cohabitancy into Solo parenthood – are associated with higher depression scores may suggest the utility of targeting information at those making such transitions and at those working with them. Raising awareness about available mental health or other (e.g. financial, advice, support, mediation) services may help to ameliorate emotional or practical challenges presented by making such transitions⁴¹
- An increase in parental stress over time is associated with a higher degree of parent-child conflict; this finding should inform any information, advice or other interventions directed at parents who may be experiencing, or at risk for, a high degree of stress and should likewise inform the practices of those working with such parents. This issue may also be linked to the issue of **childcare** insofar as difficulties arranging childcare at wave 1 have been shown to be associated with higher levels of reported parental stress levels at wave 2
- Similarly, the finding that experience of crisis pregnancy is associated with higher levels of parent-child conflict may be an issue worthy of the attention of healthcare and other specialists, such as public health nurses or pregnancy counselling agencies, involved in the post-pregnancy care of those women whose pregnancies were stressful and unintended
- Likewise, the somewhat weaker finding that an increase in depression scores is associated with more hostile parenting styles is in line with previous research and should be taken into account in the planning or preparation of information, advice or other interventions concerned with parents who may be at an elevated risk for depression

⁴¹ It should be noted here that the results do not indicate that those making such transitions are more likely to be 'depressed' in a clinical sense, merely that they register higher scores on an index of depression scores.

- Excess exposure to television at a very young age may be detrimental to children; raising awareness about this with the types of parents more likely to expose their children to TV at a young age – younger mothers, those working outside the home, those in poor health, those with low income or education – may have benefits for children over the long duration
- Mothers working outside the home, while being more likely to allow more television, were also less likely to engage in learning activities with their infant. This issue may also be linked to childcare, highlighting both the importance of flexible childcare – and work – options for mothers so as to facilitate greater mother-child interaction, while also underscoring the importance that working mothers have access to *quality* childcare which provides stimulation and learning opportunities for their infants

4. Child Health and Wellbeing

4.1. Literature on Child Health, Wellbeing and Development

A range of factors can impact on child health, from poverty and deprivation (Bradley and Corwyn, 2002), to parental behaviours during pregnancy – such as smoking and drinking alcohol – to parenting habits and practices after pregnancy, including approaches to diet and interaction with health services. It is well established that intrauterine exposure to drugs like alcohol or tobacco is implicated in development deficits in children that can often result in lifelong mental or physical difficulties (Mulder et al., 2002). Tobacco use during pregnancy, for instance, increases the risk of preterm birth approximately two-fold (Goldenberg et al., 2008).

Premature infants generally have been seen to have more problems in a number of developmental areas than their normal birth counterparts, including such areas as: motor/neurologic function, visuomotor integrative skills, IQ, academic achievement, language, executive function, and attention-deficit hyperactivity disorder/behavioural issues (Aylward, 2005). While low birth weight and premature birth often coincide this is not always the case, though it has been suggested that gestational age may be a better indicator of biological maturation than birth-weight (Aylward, 2005; Nixon et al., 2013).

Prematurity may also impact on parent-child relationships and interactions. Research has shown that premature babies elicit different parenting responses due to their being more challenging to caregivers (Goldberg and DiVitto, 2002; Nixon et al., 2013). Studies have found that parents rated as significantly more fearful and negatively reactive those children born small for their gestational age, as compared with infants who were an appropriate weight for their gestational age (Pesonen et al., 2006). Infants born small for their gestational age have been seen to be sluggish in response to stimuli, showing weak arousal, difficulty in orienting themselves towards social stimuli and also having lower activity levels and poor muscle tone (Lester et al., 1986).

Diet is a key component of health for both infants and parents. Key findings from the GUI study team on the health of the infant cohort found that one in four three-year olds were classified as overweight or obese, 19% as overweight and 6% as obese (GUI, 2011). Social class and education

were seen in these findings to be important correlates of diet quality. Consumption of unhealthy foods, such as fizzy drinks, crisps and chips, was seen to increase as parental education fell. It has been suggested that improving parent knowledge and reducing child television viewing may constitute important pathways in the effort to curb childhood obesity (Gable and Lutz, 2000).

While parent behaviours can impact on the health of children, a link has also been found between family structure and child health. Children's health may put pressure on parent-parent relationships, with implications for the incidence of Solo or cohabiting parenthood. Research has shown that having a child with poor health decreased the probability that the parents would still be living together 12-18 months later; this also increased the probability that their relationship status would be moving in the direction of 'less involvement' over time (Reichman et al., 2004). Transition into Solo parenthood may, in turn, impact negatively on child health – as research has found 'lone-mother status' to be negatively associated with child health outcomes and with emotional problems (Curtis et al., 2001).

The complex inter-relations of parental factors, including parental stress and depression as well as parenting styles and practices, were discussed in the previous chapter. Maternal stress is linked to a higher risk of depression (Lancaster et al., 2010; Webster-Stratton and Hammond, 1988) as well as to negative parenting behaviours which can impact on child socio-behavioural outcomes (Anthony et al., 2005; Crnic et al., 2005; Deater-Deckard, 1998; Pinderhughes et al., 2000). Depression itself has also been linked to negative parenting behaviours (Lovejoy et al., 2000) and to oppositional defiant disorders in 3 year olds (Meadows et al., 2007). Before birth, depression has also been linked to an increased likelihood of premature delivery (Goldenberg et al., 2008).

Beyond parent effects, a wide variety of factors including sociodemographics and family characteristics have been seen to explain conduct and behavioural difficulties in young children. High levels of maternal stress co-occur with adversity experienced by the mother, such as socio-economic hardship, poverty, overcrowding, poor neighbourhoods etc. (Bradley and Corwyn, 2002; Petterson and Albers, 2001). Socioeconomic status (SES) whether measured in terms of income, occupational status, parental education or a combination of such factors, has been shown to be consistently associated with child development in numerous studies which have demonstrated how children from deprived families are more likely to manifest symptoms of maladaptive social functioning or psychiatric difficulties than children of more well-off parents (Bradley and Corwyn, 2002; Brooks-

Gunn and Duncan, 1997; McLeod and Shanahan, 1993; McLoyd, 1998; Patterson et al., 1989; Repetti et al., 2002; Takeuchi et al., 1991).

Numerous factors have been posited as potential moderating mechanisms by which low socioeconomic status impacts on child development including: higher maternal stress due to poverty (Bradley and Corwyn, 2002; McLoyd, 1998); difficult home relationships or marital discord (Petterson and Albers, 2001; Repetti et al., 2002); lack of resources and, thus, of stimulating materials for children impacting on cognitive development, and potentially on behavioural development where child boredom or frustration results in strained parent-child relations (Bradley and Corwyn, 2002; Brooks-Gunn and Duncan, 1997); larger families or crowded residences leading to a dilution of parental attention on young children (Downey, 1995).

Socioeconomic status, as well as family structure, has also been seen to impact on how parents go about using medical services. A UK study of the determinants of rates of consulting GP doctors showed that: Higher rates of consultations were found in patients who were classified as permanently sick, unemployed, living in rented accommodation, immigrants (of Indian origin), living with a spouse or partner (women only), children living with two parents (girls only), and living in urban areas, especially those living relatively near the practice (Carr-Hill et al., 1996). As regards hospital services, it has also been seen that the most prominent socio-demographic characteristic associated with injury is family type, and that children from one-parent homes with more than one child had the highest injury rates across different family types (Williams et al., 2013: 49).

Policy context in Ireland

There are a number of supports available to parents in the time after the birth of their child under the Maternity and Infant Care Scheme. This entitles mother and baby to two visits to their GP after the baby is born, one at 2 weeks old and the second at 6 weeks. At the second visit doctors check the baby's weight, length, head circumference and hips and they discuss the baby's feeding patterns and general health with the mother, and address any concerns she might have.

A public health nurse also visits mother and baby at home, generally within 48 hours of birth, for mothers who gave birth in a hospital. They carry out checks at 9 months, 18 months and 2 years, focusing on developmental issues such as eyesight, hearing etc. Public health nurses also offer advice and support to mothers, as well as support groups for breastfeeding and advice on developing a healthy and balanced diet for babies switching to solid food.

The national taskforce on obesity reported in 2005 that Irish children were eating a lot of energy dense foods outside the home, including fizzy drinks and sweets etc. and the taskforce issued a range of recommendations for the health sector – as well as educational institutions and other bodies – to deal with the growing problem of obesity (NTO, 2005). Recommendations included that:

- Antenatal visits, as an opportunity to empower parents and their families to develop life skills which support healthy eating and active living, should encompass family goals, such as healthy weights, which are regularly discussed
- The choice of a mother to breastfeed and the skills required to breastfeed exclusively for the recommended six months should be supported ante-natally and postpartum
- The postpartum check, as a further opportunity for the public health nurse, parents and their families to discuss and facilitate health choices, should support the family in maintaining healthy weights; key measurements, such as child's weight/length and the mother's BMI, should be recorded to enable self-management
- The primary care vaccination visits and public health nurse visits carried out during the first three years of a child's life is another opportunity to engage with families, working in partnership with parents to assess and monitor changes in the BMI of the parents and the height/length of children and to identify skills to overcome barriers to change

Aims

As we are interested in exploiting the valuable longitudinal information in the GUI study we will focus on outcomes that may have changed over time, such as:

- Change in baby's overall health
- Change in parental use of medical services
- Relationship of change in family status to health-related changes

We focus also on information newly available at wave 2, such as:

- Infant diet and eating habits
- Obesity and overweight children
- Developmental outcomes in both physical and socio-behavioural areas

4.2. Results

4.3. Child's Health

Current Health

On baby's current health as reported by the primary caregiver there is a significant association between marital status and whether the child tends to be perceived as being generally sick or healthy. Controlling for a range of factors relevant to explaining the current health of the child the results of this ordered logistic model show:

Model 1

- **Marital status:** Solo parents are significantly more likely to report that their child is unwell with greater frequency than Married parents; the same holds true when comparing Solo parents to Unmarried-cohabitant parents
- **Family transitions:** transition into marriage from being Unmarried-cohabitant was significantly associated with higher odds of good health for the children experiencing this transition (higher relative to all the families that did not undergo this type of transition)
- **Higher odds of poor health:** Crisis pregnancy, complications in pregnancy, drinking while pregnant ($p < .10$), mother's disability, mother's poor health, or a history of poverty were all significantly associated with a higher likelihood that the child would be currently perceived to be in poor health
- **Higher odds of good health:** having a large family (i.e. a higher number of children resident in household) was associated with higher odds that the child would be currently in good health at the time of interview for wave 2

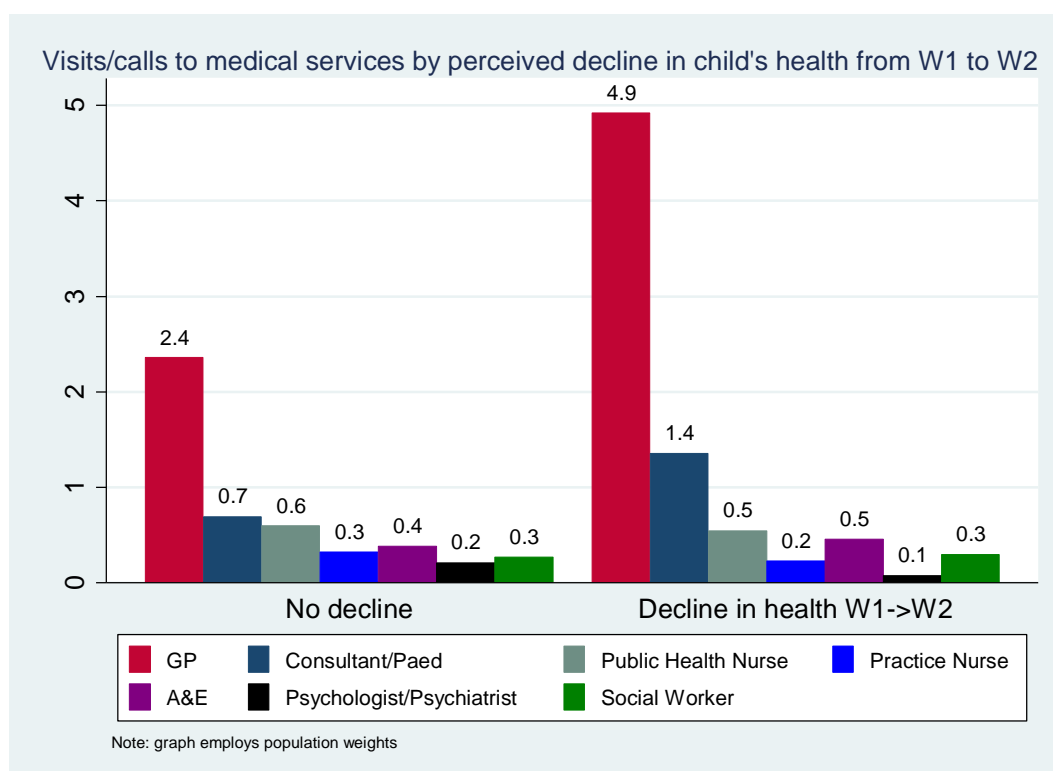
Model 2

- **Additional controls, higher odds of poor health:** adding controls to the model above shows that: *Stress and Depression* of parents at wave 2, higher scores on the *Pianta conflict scale* and a younger *gestational age at birth* are all significantly associated with a higher likelihood that the child would be (perceived as being) in poor health
- **Model changes:** there is **no significant effect for marital status** when adding these controls, indicating that Solo parents' higher propensity for reporting their child as unwell may be explained in terms of Solo parent's higher stress and/or depression scores. Crisis pregnancy is also not significant in this model. Other results remain substantively the same.

Changes in child's health over time

A deterioration in the child's current health as reported by the primary caregiver was registered by 18% of children for whom we have data at wave 2. The current health of these children as reported in wave 2 was reported as being poorer than it had been at wave 1. Fully 72% of children registered no change in their health over time, while 10% reported an improvement in their health. PCG perceptions of their child's health may differ from objective measures if, say, the PCG is more prone to stress or worry. However the indicator is useful and shows a clear correlation with use of medical services by parents. Fig. 4.1 shows the average number of visits or phonecalls parents made to different types of medical service in the last 12 months according to whether those parents also reported a lower level of general health for the study child at wave 2 compared to wave 1. Those who reported a decline in child's health over time visited the GP or a consultant/paediatrician about twice as frequently as those who reported no decline. As such perceptions have implications for the use of services it will be helpful to understand the characteristics of those parents/families where child's health is reported to have declined over time.

Fig. 4.1



We explore the factors which allow us to account for whether or not the child experienced a deterioration in health over time from wave 1 to wave 2. The logistic model of this binary indicator (1,0) 'health deterioration (yes=1)' shows significant associations as follows; we control for the standard set of socio-demographics here, as well as for birth weight and gestational age at birth:

Model 1

- **Marital status:** Solo parents were significantly more likely than Married or Unmarried-cohabitant parents to register a deterioration in their child's health from wave 1 to wave 2
- **Higher odds of deterioration in health:** Crisis pregnancy, complications in pregnancy, mother's disability, mother's poor health, or a history of poverty were all significantly associated with a higher likelihood that the child's health declined over time; controlling for child's *gestational age at birth* indicates that children born prematurely are more likely to have undergone a decline in their health between waves of the study
- **Lower odds of deterioration in health:** having a *larger family* (i.e. a higher number of children resident in household) was associated with lower odds that the child experienced a deterioration in their health from wave 1 to wave 2
- **Note:** smoking or drinking while pregnant did not impact on whether the child's health deteriorated over time. Likewise, income differences or differences in educational level could not account for deterioration in child's health

Model 2

- **Additional controls:** for stress and depression, as well as parent-child conflict and hostile parenting attenuates the significance of the Solo parent indicator somewhat, but the effect remains positive though weak ($p < .10$): Solo parents are more likely than Married parents to register a decline in their child's health even controlling for these factors. Other effects remain substantively the same; birth weight has no effect
- **Higher odds of deterioration in health:** Parental *depression* scores (W2)⁴² and higher levels of *parent-child conflict* significantly predict a higher likelihood of decline over time, though the latter result may be a reciprocal relationship (where greater parent-child conflict ensues due to health problems, cf. Goldberg and DiVitto, 2002). Stress showed a weak positive association ($p < .10$). Crisis pregnancy was no longer significant in this specification. Having a medical card had no effect (model not shown)

⁴² This result stands when also controlling for stress and depression at wave 1 (model not shown).

Longstanding illness or disability for study child

The data show that children of Solo parents are more likely to be reported as suffering from a longstanding illness, condition or disability, Table 4.1.

Table 4.1: Proportion (%) suffering from a longstanding illness etc. by marital status

<i>Longstanding Illness/Disability?</i>	<i>Married</i>	<i>Unmarried</i>	<i>Solo</i>	<i>Total</i>
Yes	15	15	20	15.8
No	85	85	80	84.2
Total N	7,203	1,295	1,196	9,694

Note: population weighted table; excludes 5 Refusals/DKs; p=.000; highest row percentage highlighted

MMR vaccination

There was no variation by marital status recorded on this indicator: 97% of all parents had had the MMR vaccine administered for their child.

Injury requiring hospitalisation

As mentioned earlier, previous research has shown a direct link of family type to the incidence of children sustaining an injury that required hospitalisation (Williams et al., 2013). Table 4.2 shows a somewhat higher likelihood of this occurring for Solo parents than for Married parents.

Table 4.2: Proportion of children sustaining an injury requiring hospitalisation, by marital status

<i>Ever sustained an injury requiring hospitalisation?</i>	<i>Married</i>	<i>Unmarried</i>	<i>Solo</i>	<i>Total</i>
Yes %	14.6	18.2	21.5	16
No %	85.2	81.6	78	84
Total N	7,192	1,294	1,195	9,681

Note: population weighted table; excludes 5 Refusals/DKs; p=.000; highest row percentage highlighted

Modelling the likelihood of the child ever having incurred an injury that required hospitalisation:

Model 1

- **Marital status:** Solo parents had odds 51% higher than Married parents of such an injury having occurred and odds were also higher for Solo compared to Unmarried-cohabitant parents; there was no significant difference between Unmarried-cohabitant and Married parents
- **Family transition:** Unmarried-cohabitant parents who transitioned into marriage had odds 35% higher of such an injury having occurred ($p < .10$)
- **Higher likelihood of injury requiring hospitalisation:** Number of children in household (i.e. larger households as opposed to smaller) predicted a higher likelihood of injury, in line with previous research; disability of the mother, and being a native English speaker were all associated with a higher likelihood of such an injury having occurred; crisis pregnancy was also an important factor – odds of such an injury occurring were 32% higher for those women who had experienced crisis pregnancy⁴³; gestational age at birth was positively associated – babies that were not born prematurely had a higher likelihood of sustaining an injury requiring hospitalisation by age 3
- **Lower likelihood of injury requiring hospitalisation:** living in a rural as opposed to urban area was associated with a lower likelihood

Model 2

- **Additional controls:** for stress/depression at wave 2 showed no association with likelihood of sustaining an injury requiring hospitalisation, however controls for parent-child conflict or parenting style (consistency, warmth, hostility) show that a hostile or more consistent parenting style weakly predicts a higher likelihood of the child sustaining an injury ($p < .10$); weight at birth is also significant and positive in this model. Most effects of variables from model 1 remain substantively the same in this model; however the significance of the crisis pregnancy effect and effect of having a larger family is somewhat attenuated ($p < .10$); also gestational age at birth is not helpful in explaining this outcome (not significant) when we know the study child's weight at birth

⁴³ This effect was not seen to be moderated by whether or not the PCG felt they had adequate help or support from family or friends outside the home.

Reasons child did not receive needed medical care in last year

Only negligible numbers reported that their child did not receive needed care in the last year, whether due to inability to pay or take time off work, unavailability of the requisite care, fear on the part of the child, or waiting list problems. However 14% of respondents stated that the child was not given care as PCG was waiting to “see if the problem got better”; this did not vary by marital status.

Use of medical services and variation by medical card

On use of medical services we have data on the number of times parents interacted with a range of healthcare professionals in the previous year. The relevant question asks how many times the PCG has “seen or talked on the telephone with any of the following” different types of health worker. While discussion of the results below may refer to number of visits for shorthand, this should be interpreted in line with the above question wording.

All models control for the standard set of variables plus other variables likely to impact on use of medical services; full models can be found in the Appendix. Some of the indicators show relatively little variation. For example, less than 2% of respondents sampled saw a psychiatrist/psychologist or a social worker at least once. Number of visits to the GP is the indicator that shows most variation and even then 97.5% of the sample reported visiting the GP 10 times or less.

Fig. 4.2 shows how the frequency of visits to GPs or Consultants/Paediatricians varies by marital status and by medical card status. Number of visits to the GP are highest for Solo parents on a full medical card, but there is little/no variation in number of visits where parents do not have access to a medical card. The vast majority of Solo parents, almost 4 in 5, are registered on the full medical card. Unmarried-cohabitant parents are over twice as likely as Married parents to be registered on the full medical card, with 50% of UC parents on the full card. The GP-only card applies to a small proportion of the sample, with only about 1 in 20 parents across all family types on this card.

We treat GP usage in more detail below as this is the service with which most parents have the most frequent contact, but first we summarise the findings of the analysis of different types of medical services. The services in question are:

- GPs
- Consultants/Paediatricians
- Public Health Nurses
- Practice Nurses
- A&E
- Psychologists/Psychiatrists
- Social Workers

Fig. 4.2

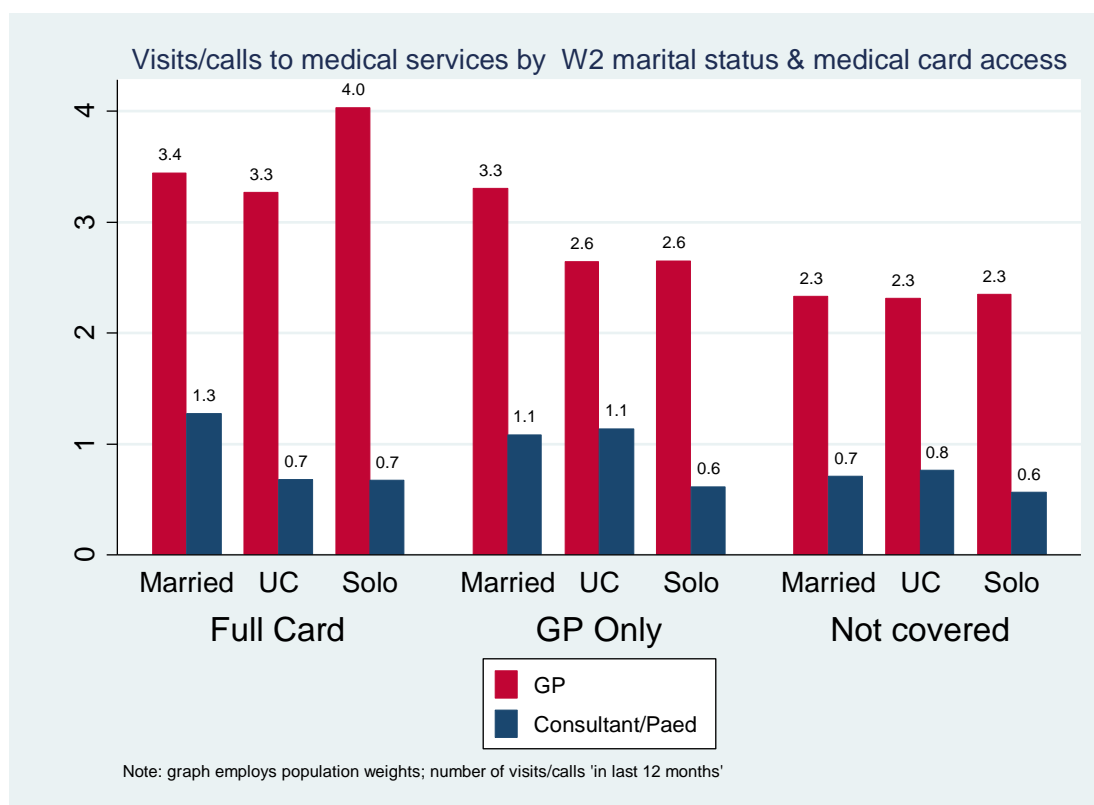


Table 4.3 shows the distribution of medical card claimants by type of medical card and marital status at wave 2. The vast majority of Solo parents are covered by a full medical card.

Table 4.3: Distribution of medical card type by W2 marital status

Medical Card	Married	UC	Solo	Total
Full Card	22	50.3	78.7	33.4
GP Only	4.4	5.3	4	4.5
Not covered	73.7	44.4	17.3	62.1
Total	100	100	100	100

Note: population weighted table; $p < .000$; highest row percentages highlighted

Summary of service use

Model 1, socio-demographics:

- **Marital status:** the only significant association between marital status and frequency of service use was for GPs: Unmarried-cohabitant parents visited the GP less frequently than Married parents. (Solo parents were seen to have a marginally higher frequency of visits/calls to a Social Worker, but this was only weakly significant ($p < .10$)).
- **Income:** being in a higher income quintile was associated with less frequent use of GP, Consultant, Public Health Nurses, or Practice Nurses
- **Education:** having only a secondary level of education was associated with higher GP frequency of visits
- **Age:** age was negatively correlated, i.e. older parents visited the GP, Public Health Nurse, Practice nurse or A&E less often than younger parents
- **Crisis pregnancy:** this significantly predicted higher frequency of visits to the GP, Consultant/Paediatrician, or A&E
- **Family size:** those with larger families (in household) visited the GP or a consultant less often, but visited the Public Health Nurse more often than those with smaller families
- **Complications in Pregnancy; parental disability; Rural dwellers:** these factors independently predicted more frequent visits to the GP, Public health nurse, or A&E; there was a weak association ($p < .10$) for disabled parents to visit a Consultant/Paeds with greater frequency
- **Parental poor health:** PCGs in poor health visited the GP about their child more frequently than healthy mothers

Model 2: *above controls, also incl. stress, depression, child birthweight/age at birth, medical card*

- **Marital status:** adding controls for the above named factors does not attenuate the result for Unmarried-cohabitant parents; UC parents are significantly predicted to visit the GP less frequently than Married parents, even controlling for demographics, stress and presence of a medical card
- **Stress at wave 2:** stress scores were positively associated with 6 of the 7 medical services examined here (except for Practice Nurses). Higher stress scores significantly predicted more frequent visits to almost all types of medical service provider.
- **Depression at wave 2:** depression scores were not really associated with frequency of visits, except in the case of Practice Nurses, where they significantly predicted a very slightly higher frequency

- **Medical card:** possession of a full card predicted a higher frequency of visits to the GP than those with no card; possession of a GP-only card also predicted a higher frequency, though the effect size was smaller
- **Birth weight; Gestational age at birth:** Gestational age at birth had a significant and negative effect, indicating that the parents of premature babies were significantly more likely to visit *all* medical services (except social workers) with greater frequency than parents of children born at 'normal' gestational age; weight at birth had no impact on service use except in the case of frequency of A&E visits

The association of low education, income, youth of the PCG or crisis pregnancy, among other factors, with more intensive use of GP services may suggest that informational supports or educational programmes may help to build confidence in perhaps inexperienced parents to deal with minor illnesses of their children and so reduce costs or alleviate pressure on medical services (where such pressure exists). Better informed parents may also be more willing to see a nurse or a pharmacist, or even to seek help from a relative when dealing with minor ailments. At the same time, it may be the case that the children of young and resource-poor mothers do indeed suffer from more health problems and this should be borne in mind when interpreting these results.

Change in frequency of use of medical services over time

We next look at how use of medical services changed over time, in terms of whether annual number of visits increased or decreased since the wave 1 interview. We focus only on change in number of visits to the GP as the other indicators show relatively little variation and so are of less substantive interest. In total, 37% of the sample registered more visits to the GP in the previous year compared to wave 1, 41% registered fewer visits, and 22% registered no change.

Modelling these changes, we consider reasons for **increased usage of GP services**⁴⁴:

- **Marital status:** increased usage of GP services is not associated with marital status
- **Family transitions:** Unmarried-cohabitant parents who transitioned into marriage are significantly less likely than other respondents to have increased their usage of GP services

⁴⁴ This is a binary variable coded 1 if the change in number of visits to the GP from wave 1 to wave 2 was greater than 0 and less than or equal to 10; the reference category is 'all other respondents', i.e. those who registered no change or a decreased number of GP visits from wave 1.

since wave 1 ($p < .10$); Solo parents who transitioned into any other marital/family status type were significantly less likely to have increased their usage

- **Less likely to have increased usage:** those in higher income quintiles are somewhat less likely to have increased usage compared to those in the lowest quintile; those with larger families, those living in rural as opposed to urban areas and those whose native language is English are less likely to have increased their usage of GP services over time

Model2: *demographics incl. stress, depression and other child controls*

- **Medical card:** those in possession of a full medical card were significantly more likely to have increased their usage of GP services than those without a medical card; those with a GP-only card were also most likely to have done so
- **Birth weight / gestational age:** these factors were not associated with increased visits to GP
- **Change in stress score over time:** there was no association of this factor
- **Change in depression score over time:** parents who recorded an increased depression score over time were significantly more likely to have increased their frequency of child-related GP visits ($p < .10$) compared to those who registered 'no change' in their depression score

4.4. Child Wellbeing & Development

Child's physical abilities at 3 years

There are a number of indicators of child's physical development that we can assess in the GUI data, specifically:

- **ability to stand on one leg**
- **ability to copy a vertical line drawn by the PCG**
- **ability to grip a pencil in the correct 'pincer-like' grip**
- **ability to throw a ball overhand**

There were no significant differences by marital status on the indicators for standing, drawing a line or gripping a pencil. However, on ability to throw a ball overhand it was seen that:

Model 1 (*socio-demographics*)

- **Marital status:** children of Solo parents were significantly less likely than children of either Married or Unmarried-cohabitant parents to be able to **throw a ball overhand**, controlling for other factors
- PCG experience of complications during pregnancy was a factor that reduced the likelihood of being able to throw a ball – or indeed any of the other three tasks
- Marital status transitions and experience of crisis pregnancy showed no strong associations with any indicators of physical development

Model 2 (*socio-demographics, incl. parenting style and stress, indicators and gestational age*)

Results from a second model adding controls for parenting style and gestational age show:

- Results for the sociodemographic indicators in Model 1 remain substantively the same, i.e. the only significant association by marital status was for Solo parents whose children were less likely to be able to throw a ball overhand
- More consistent parenting and a higher level of positive interaction as measured by the Pianta subscale were associated with better developmental outcomes on all four indicators⁴⁵
- Higher levels of reported parental stress impacted negatively on child's ability to copy a straight line or to hold a pencil with the correct grip (depression scores were not significant for any indicator of child physical development)

⁴⁵ Consistency was not associated with ability to hold a pencil in a correct grip, controlling for other factors.

- Premature babies were less likely to be able to stand on one leg or to hold a pencil with the correct grip

Child emotional development: Strengths and Difficulties Questionnaire (SDQ)

The GUI dataset contains a number of items that are elements of the Strengths and Difficulties Questionnaire (SDQ) developed by Goodman (Goodman, 1997). This questionnaire measures children's development in five areas and is used to develop subscales gauging things such as: how children relate to peers (peer problems), how they behave (conduct), how fearful or easily scared they are (emotional), how agitated or fidgety they are in their behaviour (hyperactivity-inattention), and a 'strength' subscale tapping the extent to which they are considerate of other people's feelings (prosocial). All subscales are measured out of 10, except for 'peer problems' which is measured out of 8 points. The SDQ is a measure that has been widely used in epidemiological and clinic-based work and has been shown to have good psychometric properties (McCrory and Layte, 2012; Stone et al., 2010; Williams et al., 2013). Higher scores on the scale indicate more problems.

Existing analysis of SDQ scores for three-year olds in the GUI data have shown differences by the gender of the child; boys were more likely to be classified as experiencing high levels of difficulties than girls, and this also varied by social disadvantage (Williams et al., 2013). Fig. 4.3 graphs mean scores on the difficulties subscales by marital status and clearly shows higher levels of difficulties (higher scores) between the sexes and between marital status types. For example, three-year old boys in a Solo parent family have the highest mean score on the hyperactivity scale at 4.2 points; compare this to girls in Married families where the mean score is 2.8 points (for boys in Married families the score is 3.3 points).

Fig. 4.3

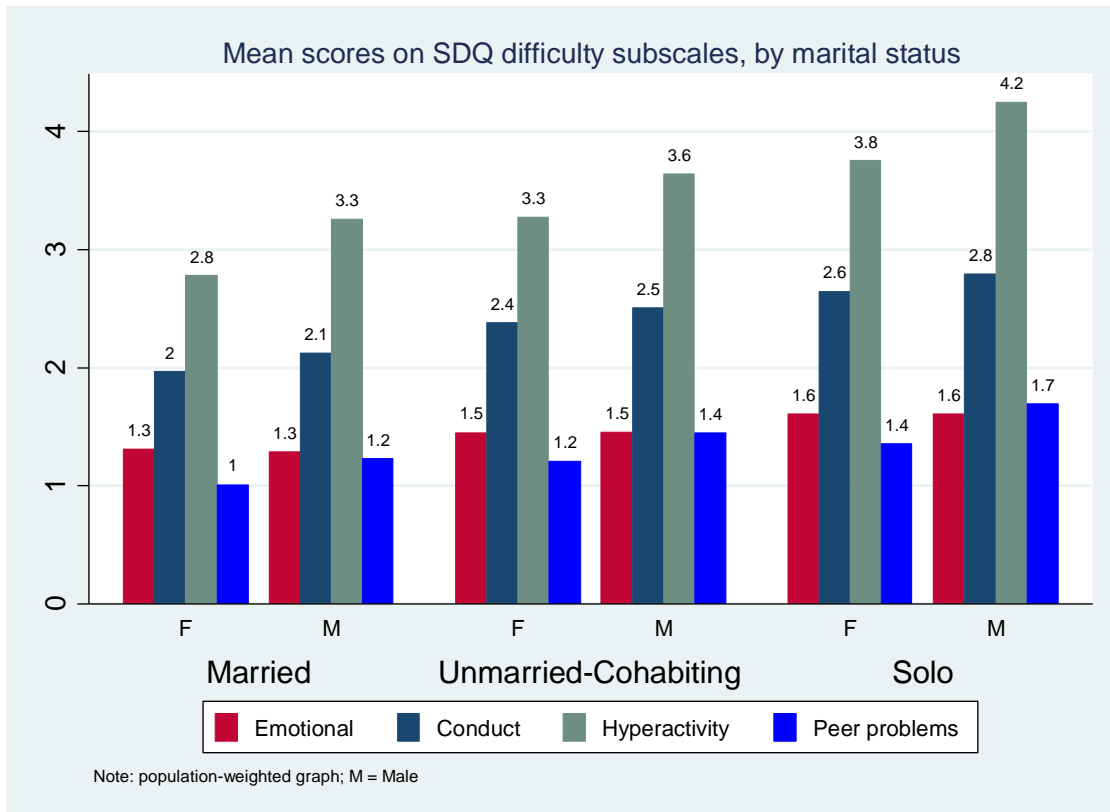


Fig. 4.4 and Fig. 4.5 are histograms of the distribution of scores on the Total Difficulties scale, presented separately by sex. In both graphs the distribution for Solo parents (and to a less extent for Unmarried-cohabitant parents) are rightward shifted, indicating that a higher proportion of these groups register higher scores on the Total Difficulties scale.

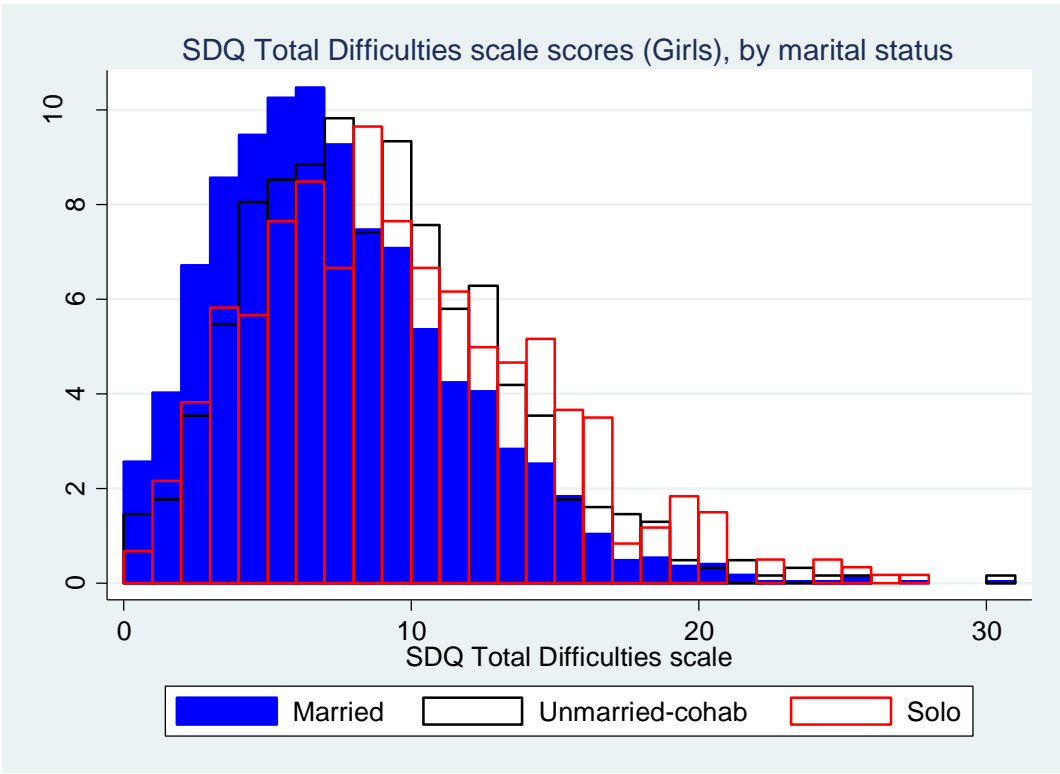
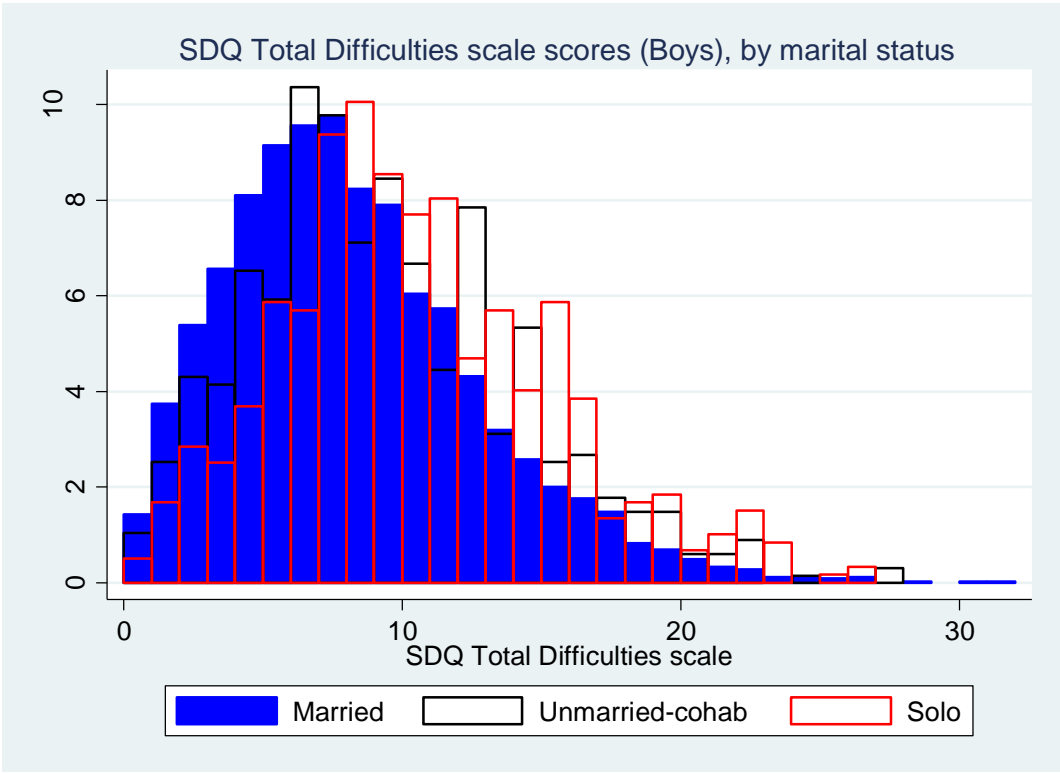


Fig. 4.4 & Fig. 4.5

Predicting children's SDQ Total Difficulty scores

We next assess whether these differences by marital status hold up when controlling for other likely determinants of emotional and social difficulties that may be experienced by three-year olds, including our standard set of controls as well as controls for differences in parenting style, the infant's gender, and parental smoking/drinking while pregnant; see the Technical Appendix for full model details. Reference to SDQ scores below should be taken to mean the Total Difficulties SDQ scale which combines all four difficulties subscales. Results show:

Model 1

- **Marital status:** there is no difference in predicted scores on the SDQ scale between the children of Unmarried-cohabitant parents and the children of Married parents; children of Solo parents are significantly predicted to have higher levels of difficulties on the SDQ scale than children of Married parents and of Unmarried-cohabitant parents, even controlling for other factors
- **Family transitions:** children of Solo parents who had transitioned by wave 2 into any other marital/family status type were predicted to have higher difficulty scores on the SDQ scale
- **Parenting style:** higher levels of warmth and consistency on the part of the PCG were associated with *lower* difficulty scores on the SDQ scale; meanwhile higher levels on the hostility scale of parenting styles predicted *higher* levels of difficulty for children
- **Higher difficulty scores:** male children; children in lower income quintile families; children whose caregivers felt they did not receive sufficient help outside the home; children whose mothers had experienced a crisis pregnancy; and children whose mothers had smoked while pregnant, had experienced complications in pregnancy, had a disability, had a family history of poverty, or were in bad health were all significantly predicted to have higher scores on the Total Difficulties scale
- **Lower difficulty scores:** children whose parents had a higher level of education than Secondary level only were predicted to have lower scores of the SDQ scale; children of older parents and children in larger families were predicted to have lower difficulty scores, as were native English speakers when compared to non-native speakers
- **Supplementary model details:** This model accounts for 31% of the variation in total SDQ scores; before addition of the parenting style indicators the model accounts for 10% of variation in total SDQ scores

Model 2

This model adds in controls alongside those discussed above for the quality of the parent-child relationship as perceived by the PCG (Pianta scale short form). Alongside this we also control for change in parental stress levels and depression levels from wave 1 to wave 2. Adding these explanatory variables showed:

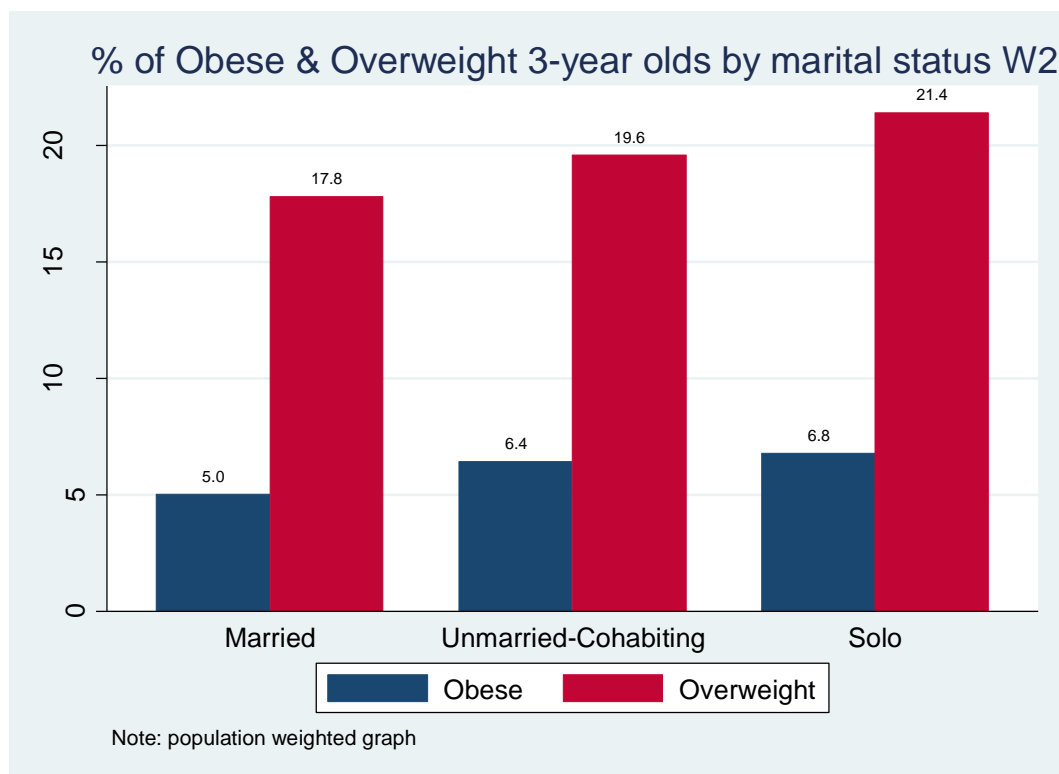
- **Marital Status:** Solo parents' children are still predicted to have more socio-behavioural difficulties than Married parents though the effect is reduced in size somewhat; these difficulties cannot be explained solely in terms of parental stress/depression or parenting style
- **Parent-child relationship perceptions (Pianta):** higher scores on the positive aspects scale predicted lower levels of child difficulties controlling for other factors; higher levels of conflict predicted higher levels of child difficulties on the SDQ scale
- **Depression score:** increased depression scores over time predicted higher SDQ difficulties scores for the child (relative to those who experienced 'no change' in their depression score)
- **Stress score:** increased stress over time predicted higher SDQ difficulties scores (relative to those who experienced 'no change' in their stress score)
- **Model changes from specification 1 to 2:** crisis pregnancy, parental disability, and getting enough help outside the home are all indicators that lose statistical significance in this second specification. This can be interpreted as indicating that these differences are all in fact explicable in terms of differences in stress or depression levels among those who have a disability or who do not get sufficient help, or differences in the quality of parent-child relationships. For example, those who experienced crisis pregnancy have significantly higher scores on the Pianta conflict scale (one-way t-test) than those who did not experience their pregnancy as a crisis
- **Supplementary model details:** This model accounts for 44% of the variance in SDQ scores

4.5. Dietary Habits

Obesity

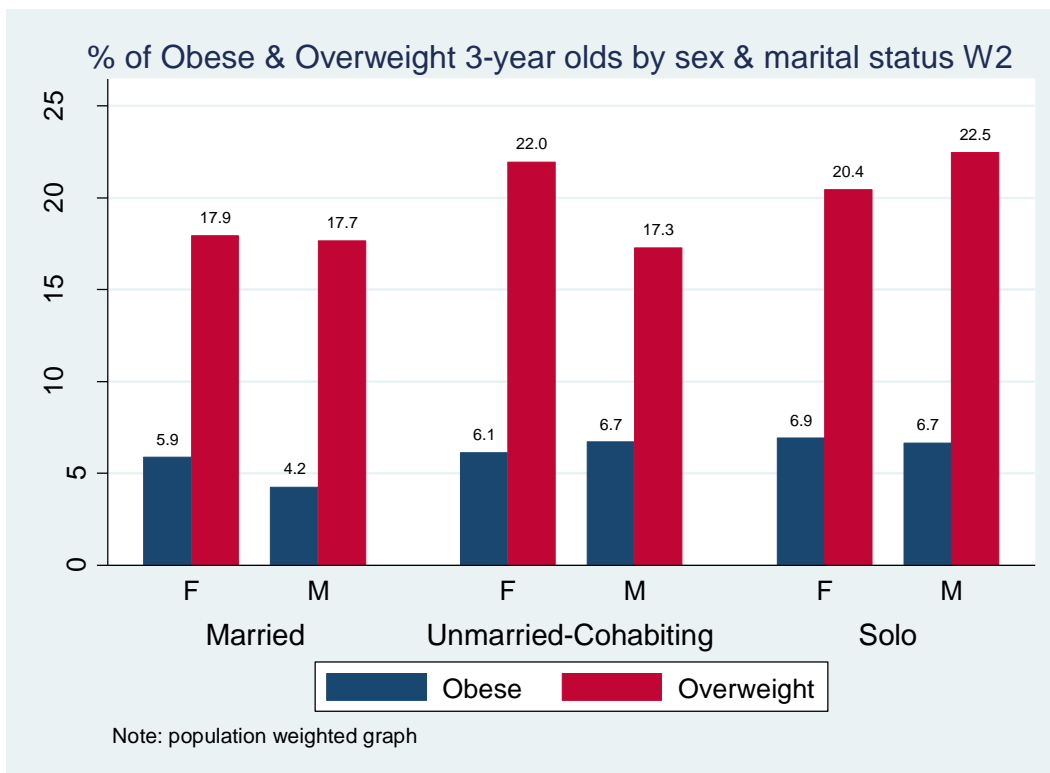
As noted earlier, approximately 1 in 4 three-year olds were seen in initial GUI publications on the wave 2 data to be overweight or obese and this was correlated with class. Here we look at the distribution of being overweight or obese by marital status at wave 2. We use age-appropriate cut-off points for infant BMI (body mass index) scores at age 3, drawn from research on standard international definitions of child overweight and obesity (Cole et al., 2000). Fig. 4.6 shows the distribution by marital status, indicating that children of Unmarried-cohabitant and Solo parents appear to have a slightly higher level of obesity than children of Married parents. Approximately 21% of Solo parents' infants are classified as overweight, compared to 20% of Unmarried-cohabitant and 18% of Married parents' infants.

Fig. 4.6



There is variation by infant gender in this regard also, and Fig. 4.7 shows a distinctly higher incidence of being overweight in non-Married families. Obesity for male infants is highest in Solo parent families while obesity in female infants is most prevalent in Unmarried-cohabitant families.

Fig. 4.7



Exploring whether any of these differences are statistically significant when controlling for other factors shows, for **female infants**:

- **Marital status:** there were some weak associations ($p < .10$) with marital status; Female children of Solo parents were only about half as likely to be obese as the female children of Married parents; Female children of Unmarried-cohabitant parents were more likely to be overweight than female children of Married parents;
- **Family transitions:** for female children, where Solo parents transitioned into cohabitancy there was an associated lower likelihood of their being obese
- **Obesity:** smoking while pregnant, a larger weight at birth, inconsistent parenting style, higher depression index scores all significantly predicted a higher likelihood of female infants being obese; drinking alcohol while pregnant predicted a lower likelihood of female infants being obese at 3 years
- **Overweight:** parenting style matters, with more parental warmth ($p < .10$) and less parental consistency associated with a higher likelihood of female infants being overweight; children born prematurely or with a heavier birth weight were more likely to be overweight; crisis pregnancy predicted a lower likelihood of being overweight ($p < .10$); family history of poverty predicted a higher likelihood of female infants being overweight at 3 years of age

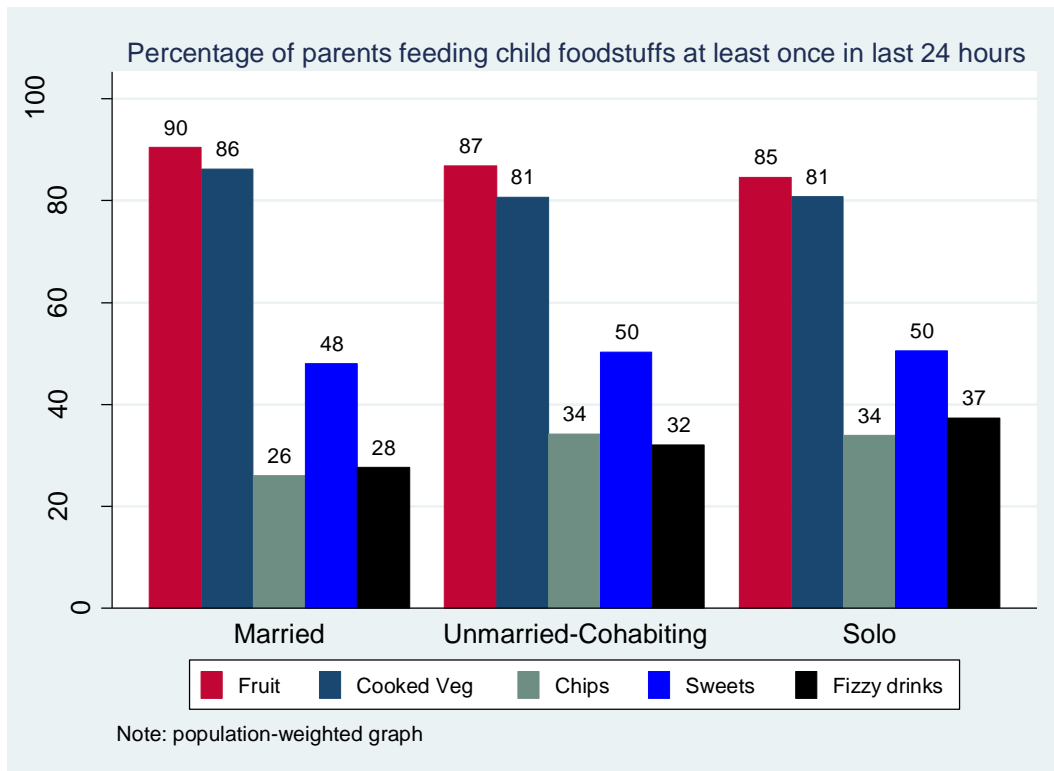
For **male infants**:

- **Marital status:** there were no associations of marital status with male infant obesity or being overweight
- **Obesity:** income was a major predictor of obesity, and male infants of those parents in the lowest or second lowest income quintiles were 3.5 times more likely to be obese than those in the highest quintile; education also mattered and male children of those with no education/ Primary level were 2.5 times more likely than those with Secondary education to be obese ($p<.10$); male infants from larger families were significantly less likely to be obese than those from smaller families; birth weight showed a positive significant association with likelihood of male infant obesity
- **Overweight:** education or income did not show significant associations with likelihood of male infants being overweight; inconsistent parenting and a family history of poverty significantly predicted a higher likelihood of being overweight; higher scores on the parental depression index predicted a higher likelihood that male infants would be overweight ($p<.10$); heavier weight at birth and being born prematurely were associated with a higher likelihood of being overweight

Healthy and unhealthy foods

There are differences by marital status in the dietary habits of children aged 3 years. For example, while 28% of Married parents reported giving their child (non-diet) fizzy drinks at least once in the preceding 24 hours the corresponding figure for Solo parents was 37%, see Fig. 4.8. Some differences across family types in the likelihood of feeding their children certain healthy or unhealthy foods remain after controlling for other relevant factors.

Fig. 4.8



These models explore the factors associated with a higher or lower likelihood of parents providing certain types of food to their three-year old children (the ‘fizzy drinks’ measure is for ‘non-diet’ drinks only). In general we see that there are few differences across different marital status types and that providing foods often held to be ‘healthy’ or ‘unhealthy’ can usually be explained in terms of differences in education or family size among other factors. We control here for the usual socio-demographics including income and education, child characteristics, parental health indicators and parenting style factors. The dependent variable captures whether the child had the specified type of food ‘at least once’ in the preceding 24 hours.

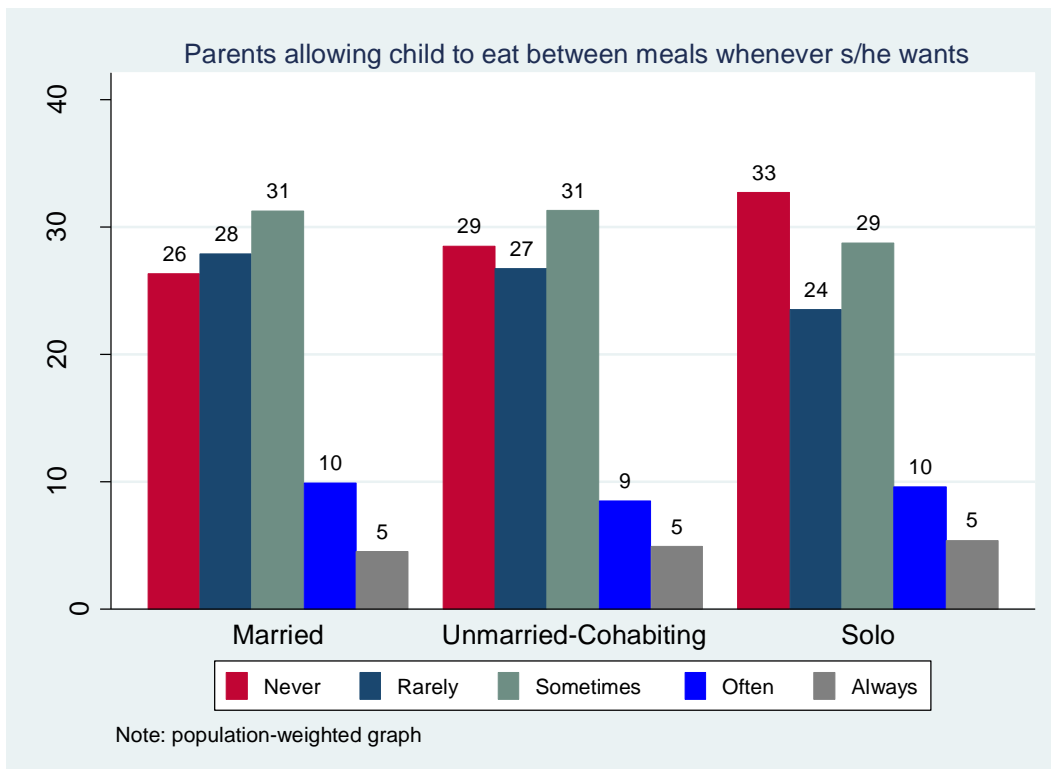
Summary of effects

Full results of these models can be found in the Appendix. For the purposes of this discussion we characterise ‘healthy’ foods as fruit and vegetables, and ‘unhealthy’ foods as chips, sweets and fizzy drinks:

- **Marital Status:** *Unmarried-cohabitant* parents were significantly less likely than Married parents to have given their children vegetables at least once in the preceding 24 hours; *Solo* parents were significantly more likely than Marrieds to give their children fizzy drinks; there were no other significant differences when controlling for background characteristics
- **Family transitions:** some types of family transition were weakly associated ($p < .10$) with unhealthy dietary habits. *Unmarried-cohabitant parents who transitioned into Solo* parenthood were less likely to give their children vegetables, and more likely to give them sweets; *UC parents who transitioned into Married* status were less likely to give their children fruit; *Solo parents who transitioned into cohabitancy* were more likely to give their children sweets
- **‘Protective’ factors:** higher levels of parental *education* and a more *consistent* parenting style were associated with better dietary practices in general; a more *positive parent-child relationship* (Pianta scale) predicted better dietary practices generally, but there was a weak association ($p < .10$) for a higher likelihood of giving sweets or fizzy drinks; regular contact with *grandparents* was associated with one healthy outcome (significantly lower likelihood of children having chips)
- **‘Risk’ factors:** *crisis pregnancy* ($p < .10$) is weakly associated with some unhealthy practices (sweets and fizzy drinks); children in *larger families* were no more likely to be fed healthy foods, but were significantly more likely to be fed some unhealthy foods (chips, fizzy drinks); a more *hostile parenting style* was associated with unhealthy practices (sweets and fizzy drinks) as was a higher level of parent-child conflict (sweets); higher parental *stress* had a mixed effect, reducing the likelihood of vegetables and also sweets in the child’s diet in the preceding day; higher parental *depression* index scores also predicted some unhealthy practices (chips; sweets ($p < .10$))

Eating habits: eating between meals or eating when bored

There are some differences in eating habits and what parents allow in this regard. Fig. 4.9 shows that a greater proportion of Solo parents would ‘never’ allow their child to eat between meals whenever s/he wants (32%) compared to Married parents (26%), while the proportions of parents who would allow this ‘often’ or ‘always’ are similar and low across the board.

Fig. 4.9**Summary of effects**

Full results of these models can be found in the Technical Appendix.

- **Marital Status:** for Solo parents, eating between meals is more likely to be an infrequent occurrence than for other marital status groups (significant result); there is no difference by marital status in the likelihood of allowing children eat when bored, after controlling for other factors
- **Family transitions:** *Unmarried-cohabitant parents who transitioned into Solo* parenthood were more likely to tolerate eating between meals with greater frequency, though the association was weak ($p < .10$); for *Solo parents who transitioned into cohabitancy*, children eating ‘when bored’ was likely to be an infrequent occurrence

- **‘Risk’ factors:** Crisis pregnancy was associated with greater frequency of eating between meals, as was a family history of poverty or being a non-native English speaker; mothers who drank alcohol while pregnant were more likely to tolerate a greater frequency of children eating when bored
- **‘Protective’ factors:** interestingly, regular contact with grandparents predicted a lower likelihood of unhealthy eating habits (specifically eating when bored) though the association was weak ($p < .10$)
- **Parenting style, stress other factors:** inconsistent and hostile parenting styles as well as higher levels of parental stress were associated with tolerating a greater frequency of unhealthy dietary habits; a higher degree of parent-child conflict predicted children eating when bored with greater frequency

4.6. Summary and Implications: Child Health and Wellbeing

Child's health

Child's current health

- Solo parents appear more likely to report that their child is unwell than Married parents or UC parents, however this can be accounted for in terms of Solo parents higher scores on indexes of stress and/or depression
- Parental stress and depression as well as younger gestational age at birth are all implicated in poorer health outcomes for children

Change in child's health over time

- Solo parents are significantly more likely than Married parents to report a decline in their child's health over time ($p < .10$)
- Again, higher scores on indexes of stress and depression were associated with a decline in the child's health over time
- Other factors such as poor general health of the PCG, parental disability, complications in pregnancy, or premature birth were also associated with a perceived decline in child health

Injury requiring hospitalisation

- This occurred significantly more frequently for children of Solo parents than for children of UC and Married parents. This finding is in line with previous research; as is the finding that injury occurs more frequently for children in larger families
- Where mothers had experienced crisis pregnancy this was associated with a higher likelihood of the child sustaining an injury requiring hospitalisation, and this effect could not be explained away in terms of differences in parenting style or in stress or depression scores

Use of medical services

- Unmarried-cohabitant parents visited the GP less frequently than Married parents, controlling for a range of factors; Solo parents visited with no greater or lesser frequency once other explanations (e.g. income, education) had been accounted for
- Where UC parents had transitioned between waves of the study into Married status they continued to visit the GP less frequently than those who had made no such transition

- Low education, low income, being a younger mother, mother's poor health, complications in pregnancy, or experiencing a crisis pregnancy were all associated with more intensive usage of a range of different medical service providers
- Complications in pregnancy, as well as parental disability likewise meant more intensive use of services, i.e GP, Public health nurses, or A&E
- Higher parental stress was associated with more intensive use of services for 6 of 7 service types examined (except Practice Nurses)
- Premature birth predicted significantly more intensive usage of all medical services (except Social Workers)
- The vast majority of Solo parents are registered medical card holders, though the relevant factor here is income and not marital status per se

Change in frequency of use of GP services over time

- Transition from UC parenthood into marriage, or transition out of Solo parenthood, meant a lower likelihood of parents having increased their usage of GP services over time
- Parents whose score on the index of depression increased over time were predicted to have also increased the frequency of their use of GP services ($p < .10$)

Child Wellbeing

Physical abilities

- The only association of marital status with indicators of child's physical development was the finding that children of Solo parents are less likely to be able to throw a ball overhand than children of Married or UC parents. This could not be explained by differences in terms of birth weight, gestational age at birth, parenting style, or parental stress
- Consistent parenting and a positive parent-child relationship were strongly associated with an ability to perform other physical tasks, i.e. standing on one leg, throwing a ball overhand, drawing/copying a vertical line, holding a pencil with the correct grip
- Complications in pregnancy, low birth weight, and premature birth were all associated with poorer developmental outcomes (all reduced the likelihood of being able to hold a pencil correctly; complications and prematurity also reduced the likelihood the study child would be able to stand on one leg)

- Higher levels of parental stress at wave 2 were associated with some poorer outcomes (lower likelihood of being able to copy a line or hold a pencil)
- Transition between different types of family status was associated with one negative developmental outcome (moving from UC to Married parenthood; ability to copy a line reduced) and one positive developmental outcome (moving out of Solo parenthood; ability to correctly hold a pencil increased). Why transition into marriage from UC parenthood should impact negatively is unclear

Socio-behavioural development (SDQ scores)

- There was a clear patterning of socio-behavioural difficulties by marital status
- Solo parents' children were seen to have significantly higher levels of social difficulties even controlling for a range of factors
- Children of Solo parents who transitioned into marriage/cohabitancy were also predicted to have higher levels of social difficulties
- Smoking while pregnant, the baby being male, and the mother being relatively young or in poor health all predicted higher levels of difficulties
- Parenting styles were strongly predictive of higher levels of socio-behavioural difficulties when parents exhibited hostile or inconsistent parenting behaviours
- Change in depression or stress scores (increases in scores over time) significantly predicted higher levels of socio-behavioural difficulties for 3 year old infants

Obesity

- There were gender differences in the determinants of being obese among 3-year old infants
- Female infants of Solo parents were less likely to be obese than female infants of Married parents
- Parental behaviours such as smoking during pregnancy or parenting style (inconsistency) predicted higher risk of obesity amongst female infants
- Higher PCG scores on an index of depression also predicted a higher risk of female infant obesity
- For male infants, income was a major predictor, and there was no effect of marital status or family type when controlling for this and other factors; education level of the parent was also seen to matter
- Male infants from larger families were significantly less likely to be obese than those from smaller families

Overweight

- There were also gender differences in the determinants of infants being overweight
- Female infants from Unmarried-cohabitant families were more likely to be overweight than female infants of Married parents, though the association was somewhat weak. This difference could not be explained in terms of differences in education, income or a range of other factors
- Inconsistent parenting styles, a family history of poverty, and being born prematurely all predicted a higher likelihood of being overweight for *both* male and female infants
- Higher PCG depression scores were weakly associated with a higher risk of male infants being overweight

Dietary habits

- There were indications that Solo parent family types were more likely to engage in unhealthy dietary habits or to allow unhealthy eating practices
- Solo parents were more likely to give their child unhealthy foods, as were Unmarried-cohabitant parents who transitioned into Solo parenthood
- UC parents were less likely to give their children healthy foods, and those who transitioned into marriage over time were also less likely to do so
- These differences remained even accounting for differences in income, education, and parenting styles, however some of the associations were weak in a statistical sense and so further research may be needed; Higher levels of education and consistent and positive parenting styles predicted healthy dietary habits and eating practices
- Regular contact with grandparents was (for some indicators) associated with more healthy dietary practices and habits
- Experience of Crisis pregnancy was implicated in some unhealthy dietary habits, and this could not be explained by differences in income, stress or other factors
- Parental stress – and to a lesser extent higher scores on the depression index – was associated with unhealthy practices

Policy implications

- Policies aimed at helping parents who are at higher risk for stress and/or depression seem likely to have positive consequences for child health, physical development, socio-

behavioural development and diet. Targeting of any such policies at Solo parents, a group at higher risk for these difficulties, may be justified

- The implication of prematurity in poor health outcomes is well established in the literature and the findings here support this. Advice, information, support and guidance to all parents to highlight the linkages of certain behaviours such as smoking with the risk of premature delivery and/or other development impacts on the child will continue to be important in light of this. Targeting of messages aimed at those more likely to engage in such behaviours, e.g. Solo parents' higher likelihood of smoking while pregnant, may be warranted
- Children of crisis pregnancy were more likely to encounter undesirable outcomes such as sustaining an injury requiring hospitalisation, or having poorer dietary habits, and these effects could not be explained away in terms of differences in parenting style, stress or other background characteristics. While no clear policy implication as such arises from these findings it may be that further research to clarify the linkages between crisis pregnancy and undesirable health outcomes is needed
- Educational programmes may help to improve the dietary habits of certain groups of parents, and low education in general was correlated negatively with dietary outcomes.
- Those undergoing transitions to new family types appear to be at some risk of negative outcomes including engaging in or allowing less healthy dietary habits, and higher levels of socio-behavioural difficulties for their children. The availability of advice or support at such a potentially disruptive time may be beneficial
- The issue of childhood obesity is a pressing issue for policymakers, with 1 in 20 Irish 3-year olds now classified as obese. The issue was seen to cut across family types in this analysis, with the results underscoring the importance of education and income as well as parental behaviours and parenting styles

5. Work and Welfare

5.1. Women at work

Education, insofar as it improves human capital and one's utility in the labour market, directly impacts on the nature, type and rewards associated with employment (Becker, 2009). Returns are naturally greater to higher levels of educational qualification compared to lower levels of qualification, both in terms of earnings and in terms of the likelihood of being employed (BIS, 2011; Walker and Zhu, 2001).

Women face distinct challenges in the labour market and childbearing has been consistently linked to entry and exit of the labour market, as well as to career disadvantages in terms of stifled career progression or lower earnings, what is often referred to as the 'family gap' in wages (Drobnic et al., 1999; Waldfogel, 1998). Looking at UK data, research has shown that for women there is a marriage penalty (in wages) while for men there is a large premium for being married; for women there is a small premium for being a cohabiter relative to being married, while for men there is a small penalty for this (Walker and Zhu, 2001).

Returns to years in education and to level of qualification are stronger for women than for men (BIS, 2011; Walker and Zhu, 2001). This may be for a number of reasons including because women choose to work in sectors where education is highly valued (Dougherty, 2003) or because of underlying gender differences in academic attainment where girls consistently outperform boys, thus patterning entry into third-level education and into professions, e.g. medicine, that attract greater rewards (Ahlstrom, 2013; BIS, 2011; Buchmann and DiPrete, 2006). Also, because the group of women who are active in the labour market is smaller than the group of active men – for a number of obvious reasons including adherence to traditional forms of 'male breadwinner' family organisation⁴⁶ and associated, perhaps latent, forms of discrimination – women who enter employment are likely to be 'selected into' work on the basis of unobserved characteristics that attract a labour market premium, such as motivation and determination (Dougherty, 2003; Sainsbury, 1999).

Women's ability to work will naturally be affected by childcare arrangements, and these issues were discussed with regard to education and employment of women in the Childcare chapter. Likewise, women's need to work will be affected by family structure and the range of social supports available

⁴⁶ 99.7% of primary caregivers (PCGs) in wave 1 and 98.4% of PCGs in wave 2 of *Growing Up in Ireland* (infant cohort) were women.

to facilitate labour market entry in terms of in-work benefits, income supports etc. will be especially important with regard to whether and how Solo parents attach themselves to the labour market.

Policy context in Ireland

As stated earlier (see Childcare chapter), the situation with regard to maternity benefit duration in Ireland now compares favourably with the situation in Europe. Maternity benefit is paid for 26 weeks, and there is an entitlement to a further 16 weeks unpaid maternity leave after this time; this period is not covered by Maternity Benefit but claimants are entitled to a credited social insurance contribution for each week of unpaid leave they take, up to the maximum of 16 (DSP, 2014a).

However rates have been adjusted recently, in the government's Budget 2013. From 6 January 2014 the minimum and maximum rates of Maternity Benefit (and Adoptive Benefit) for new claimants were standardised at €230 per week for new applicants, resulting in an increase of up to €12.20 for those receiving less than €230 per week and a reduction of up to €32 per week from previous rates for all other claimants (DSP, 2014a).

The government has also recently imposed changes to the One-Parent Family Payment (OPFP) as of the beginning of January 2014: "From 1 January 2014, people getting a One-Parent Family Payment and doing a SOLAS (formerly FÁS) training course will not get a training allowance. However, they will continue to get their social welfare payment. This will apply to new participants only" (DSP, 2014b). This policy change removing the training allowance represents a potentially significant adjustment to the economic resources available to one-parent families who may be interested in undertaking training. Earnings 'disregards' apply to this benefit and claimants can earn up to €90 per week and still qualify for the full One-Parent Family Payment. (This disregard will reduce to €75 from January 2015 and to €60 from January 2016).⁴⁷

As a real-world example consider the following situation in Table 5.1, comparing OPFP income with and without training allowance; the OPFP payment is reduced by treating the training allowance as means and applying the appropriate earnings disregard; the real-world validity of this example was confirmed with a representative of the Dept of Social Protection (Egan, 2014):

⁴⁷ Half the remainder of a claimant's gross earnings up to €425 per week is assessed as means. If they earn between €90 and €425 per week they may qualify for a reduced payment (DSP, 2014).

Table 5.1: Variation in OPFP benefit levels assuming training allowance applicable, by year of operation

	2013 (€)	2014 (€)
OPFP payment before reduction	188	188
--- <i>Earnings disregard</i>	110	-
--- <i>Means = (OPFP – disregard)/2</i>	39	-
--- <i>Reduced OPFP payment at this level of means</i>	155.50	-
FÁS/SOLAS Training allowance	188	-
Total	343.50	188

Note: italicised figures are not summed; rates taken from DSP 'Rates of Payment' 2013 booklet SW19 for OPFP; figures exclude allowances for qualified children that are also made available to recipients of OPFP, €29.80 per qualified child in 2013

As the worked example clearly shows, the changes will have a substantial impact on total weekly resources available to OPFP recipients who also seek to undertake training. The level of resources available under the new regime may be insufficient to allow such parents to also make the childcare arrangements that may be necessary for them to undertake training.

Changes are also underway to OPFP regarding the age threshold for claimants' youngest child; this will reduce in line with the timetable presented in Table 5.2. Approximately 63,000 recipients are expected by the DSP to lose their entitlement to OPFP in the period 2013-2015 (Egan, 2013). Also, as regards returning to education, claimants are advised that from 4 July 2013 those who returned to education and had opted to keep their OPFP (instead of the Back to Education Allowance, BTEA) may be admitted to BTEA 'mid-course' if they no longer qualify for OPFP because of the changes to the age thresholds (DSP, 2014b). Since January 2012 new participants on Community Employment (CE) schemes cannot claim another social welfare payment at the same time. The rate for the CE scheme is the weekly rate of the participant's social welfare payment plus €20.⁴⁸

As the cut-off date of April 27th 2011 begins midway through the data collection timeframe for wave 2 (Dec 2010-July 2011), and as the GUI dataset does not contain the date of interview for the second wave, we cannot know or establish with any certainty how the respondents interviewed in wave 2 are likely to be affected by these policy changes. However, if they were in receipt of OPFP at the time of interview, we can assume that the conditions under bullet point 1 in Table 5.2 will apply.

⁴⁸

http://www.citizensinformation.ie/en/employment/unemployment_and_redundancy/employment_support_schemes/community_employment_scheme.html

The impacts of changes to the age threshold will not affect OPFP recipients interviewed for the GUI infant cohort at any time during the planned period of the study. It may be possible for research looking at the child cohort to detect effects in future waves of that aspect of the *Growing Up in Ireland* study. Changes to deny the training allowance to new SOLAS (formerly FÁS) participants who are claiming OPFP may manifest in wave 4 of the infant cohort, though numbers sampled are likely to be small and may not facilitate feasible comparison.

Table 5.2: Age threshold changes to OPFP following Budget 2013

	In 2012	4 July 2013	3 July 2014	2 July 2015
Date of Claim	Age threshold reduces to:			
1. If your claim started before 27 April 2011 payment will continue until your youngest child reaches:	18	17	16	7
2. If your claim started between 27 April 2011 and 2 May 2012 payment will continue until your youngest child reaches:	14	12	10	7
3. If your claim starts on or after 3 May 2012 payment will continue until your youngest child reaches:	12	10	7	7

Source: (DSP, 2014b)

The Community Employment (CE) scheme is another important feature of the employment landscape with special relevance to Solo parents:

“[The CE] programme is designed to help people who are long-term unemployed and other disadvantaged people to get back to work by offering part-time and temporary placements in jobs based within local communities. Participants can take up other part-time work during their placement. After the placement, participants are encouraged to seek permanent part-time and full-time jobs elsewhere based on the experience and new skills they have gained while in a Community Employment scheme”.⁴⁹

⁴⁹

http://www.citizensinformation.ie/en/employment/unemployment_and_redundancy/employment_support_schemes/community_employment_scheme.html

Since January 2012 the CE scheme pays a weekly rate of €208 on the basis of 19.5 hours worked. Previously it was possible to concurrently claim another social welfare payment, however this is no longer the case. As noted above, new participants in CE from OPFP receive the standard OPFP rate plus an extra €20. The number of people on CE schemes remained stable at around 23,000 throughout Ireland's recent recession and those on OPFP made up 1 in 6 of all CE participants (DSP, 2012).

Aims

In this chapter we explore education and employment with a focus on change over time between waves 1 and 2 of the GUI study. We consider the following questions:

- Who has improved their educational level over time?
- What role has such positive educational change played in terms of employment outcomes?
- What sort of changes in the nature of employment or unemployment have occurred and who has experienced them?
- What sort of impacts have such changes had on parents and children, if any?
- How has maternity leave and the ability to take different types of leave (paid, unpaid, annual leave) after birth impacted on outcomes for parents and children?
- How has overall welfare changed over time?
- What role have social welfare benefits, particularly One Parent Family Benefit, played with regard to educational and employment-related outcomes?
- Given proposed changes to OPFP, what is the labour market readiness of parents who may lose their entitlement to this welfare benefit?

5.2. Results

Education

Educational attainment is directly associated with labour market performance and is thus implicated in the work and welfare outcomes of all parents. The data allow us to look at change over time in educational attainment and to explore the factors associated with increased educational attainment. At wave 1, there were clear differences by marital status in the highest level of education parents had attained, as we saw in the earlier chapter on *Marital Status and Family Transitions*. The earlier graph showed that, for Solo parents, a clear majority of 65% had completed Secondary education only as their highest level of education, compared to 32% of Married parents. Married parents were also more likely than other marital status groupings to have completed a third-level degree.

By wave 2 there had been some movement in terms of highest level of education attained. About 15% of respondents had attained a higher level of education since the wave 1 interview. This varied by marital status also, such that a higher proportion of Solo parents reported having attained a higher level of education compared with other marital status groups, see Table 5.3.

Table 5.3: % increasing their education level over time, by marital status

<i>Increased educational attainment since W1?</i>	<i>Married</i>	<i>Unmarried</i>	<i>Solo</i>	<i>Total</i>
Yes	15.8	16.5	19.9	15.2
No	84.2	83.5	80.1	84.8
Total N	7122	1282	1188	9592

Note: population-weighted table; $p=.000$; highest row percentages highlighted

Table 5.4 captures change in educational attainment over time. Comparing attainment at waves 1 and 2 reveals a number of things. Of the small number who had only Primary education or less as their highest level at wave 1, one-third went on to complete Secondary level education by wave 2. About one-quarter of those who had already attained Secondary level education at wave 1 went on to attain a Vocational or other non-Degree qualification by wave 2. About 11% of those who had completed a Degree at wave 1 went on to complete Postgraduate education by wave 2.

Table 5.4: Change over time in highest level of education attained

W1	W2					Total %	N
	None/ Primary	Secondary	Voc / Non- Degree	Degree/ Prof.	Postgrad		
None/Primary	58.9	29	9.7	0.5	1.9	100	216
Secondary	0.2	75.5	23.4	0.8	0.2	100	2680
Vocational/Non-Degree	0.1	0.95	88.3	8	2.6	100	3262
Degree/Professional	0	0.8	0.8	85.6	12.8	100	2278
Postgraduate	0	1.1	0.8	0.5	97.5	100	1338
Total %	2.1	31.2	35	17.7	14.4	100	-
N	135	2130	3591	2268	1650	-	9774

Source: GUI infant cohort waves 1 and 2; author's own calculations; row %; population weighted results; p=.000; W1 to W2 correspondence highlighted

There appear to be some minor anomalies in the data and about 1.1% of the sample reported a lower level of education at wave 2 when compared with their wave 1 response. This can most likely be ascribed to random errors perhaps due to coding errors following completion of the interview. It also seems unlikely, for example, that 1.85% of those who had completed only Primary education by wave 1 had moved to Postgraduate completion by wave 2.

Positive educational change over time, W1 → W2

We model positive change in educational attainment over time as a binary variable, excluding those anomalous cases recording a negative change in their highest educational level from wave 1 to 2. This binary variable captures all those who attained a higher level of education at wave 2 than they had recorded at wave 1. The results show:

- Marital status (W2):** parents who were Unmarried-cohabitant at wave 2 were significantly less likely than Married parents to have increased their educational attainment over time, controlling for other factors; there was no difference between Solo and Married parents in this regard, or between Solo and Unmarried-cohabitant parents;

However, looking only at women who were **not in the workplace** at W1 no difference by marital status was detected; there were differences by marital status among those who were **working at W1**: both UC and Solo parents were significantly less likely than Married parents to have effected positive educational change over time if they were working at W1

- **Family transitions:** Solo parents who were not-working at W1 and who transitioned into cohabitancy were more than twice as likely to increase their educational attainment over time compared to all other respondents and this result was highly significant
- **Higher likelihood:** those in higher income quintiles at W1, those who felt they did not get sufficient help from outside the home, women who had experienced a crisis pregnancy, and non-native English speakers were all more likely to have increased their educational attainment over time; for women who were not working at W1 being in poor health made it significantly less likely that they would improve their education over time
- **Lower likelihood:** those who already had higher levels of educational attainment at W1, those with larger families at wave 2 ($p < .10$) and those who smoked while pregnant were all less likely to have increased their educational attainment over time
- **One Parent Family Payment:** those who were working at W1 *and* who transitioned into receipt of OPFP over time were twice as likely to have increased their highest level of education by W2

It was also seen that among those on OPFP at W2 who had improved their education over time a greater proportion were involved in *part-time work* at W2 compared to those who hadn't improved their education (9% vs 3%, chi-square test of association significant at $p < .01$). This may suggest that the operation of OPFP (as a benefit allowing a certain amount of earnings before reductions take effect) played a role in facilitating positive educational change. Adjustments to the earnings disregards for OPFP may have implications here, as is discussed in the Policy Implications section.

Current Economic Status and change over time

The vast majority of people in the sample record their current primary economic status as either working or as homemaker. In wave 2, those who are working comprise 55% and those who are primarily attending to home duties comprise 35% of the sample. This is broadly in line with the top line figures for wave 1, though this apparent similarity conceals a lot of inward and outward flow between categories over time.

Change in economic status over time varies by marital status, Table 5.5. All family types have smaller proportions of people recorded as ‘working’ at wave 2, and this shift affected Unmarried-cohabitants most. The proportion of respondents moving into unemployment by wave 2 was also largest within the Unmarried-cohabitant grouping. (It should be borne in mind that attrition and transition into different types of marital status mean that there are differences in sample size from wave to wave; we control for transitions into different family types below in models of change in current economic status).

Table 5.5: Change in group economic status over time by marital status

<i>Change (in percentage points) of economic status category over time</i>	<i>Married</i>	<i>UC</i>	<i>Solo</i>
Working W1->W2	-3	-7	-3
Homemaker W1->W2	+0.3	+2.4	+0.7
Unemployed W1->W2	+0.2	+2.2	+0.3
Student W1->W2	+0.8	+0.06	+1

Note: author's own calculations; table compares population weighted percentages of category membership by wave

Table 5.6 captures some of this movement. For example, of those who were Homemakers at wave 1, 70% were still homemakers by wave 2; 80% of those who were working at wave 1 were still doing so by wave 2, while 14% had become homemakers and 4% were unemployed. Of the very small number of those who were unemployed at wave 1, 21% were still unemployed by wave 2⁵⁰, while 25% were working and 41% had become homemakers.

⁵⁰ Though it is logically possible that they had a job and lost it again in the period between interviews.

Table 5.6: Change over time in current economic status

<i>W1</i>	<i>W2</i>					<i>Total</i>	<i>N</i>
	<i>Working</i>	<i>Student</i>	<i>Unemployed</i>	<i>Homemaker</i>	<i>Other</i>		
<i>Working</i>	79.2	1.1	4.0	14.0	1.7	100	5739
<i>Student</i>	19.5	28.7	10.6	38.9	2.2	100	192
<i>Unemployed</i>	24.9	8.8	21.3	41.2	3.8	100	309
<i>Homemaker</i>	18.2	2.6	5.8	70.7	2.7	100	3450
<i>Other</i>	18.2	0.3	4.5	53.3	23.8	100	93
<i>Total</i>	53	2.5	5.6	36.5	2.4	100	-
<i>N</i>	5406	243	516	3408	210	-	9783

Source: GUI infant cohort waves 1 and 2; author's own calculations; population-weighted table; p=.000; row %; W1 to W2 correspondence highlighted

It is possible to explore the reasons for transition into different types of economic status over time. The period between waves 1 and 2 was characterised by deep and sustained economic recession in Ireland and so variations in outcomes arising from this difficult period will be of interest. We focus on transition from work into unemployment and transition from non-work into work. The numbers who transitioned from work into unemployment from W1 to W2 are relatively small in absolute terms (N=226). About 7% of the sample transitioned from non-work at wave 1 into 'working' economic status by wave 2.

Transition into unemployment

A small group of parents (PCGs) transitioned into unemployment by wave 2 having been previously employed at wave 1 (N=226). Results for transition into unemployment (excluding all those who were students, retired, unemployed or 'other' at W1 from the model) show⁵¹:

- **Marital status:** Unmarried-cohabitant parents were 2.5 times more likely than Married parents to transition into unemployment when controlling for other factors; there was no difference between UC and Solo parents or between Solo and Married parents
- **Lower likelihood:** those in the top income quintile at W1 relative to the bottom quintile were less likely to have transitioned into unemployment by W2
- **Notes:** there was no association of education level with likelihood of transitioning into unemployment once other factors had been controlled for; the model controls for whether the respondent attained a higher level of education from W1 to W2 (positive educational change) but this factor shows no significant association with transition into unemployment; also, change in number of children in household was not associated with transition into unemployment

The greater likelihood of UC parents transitioning into unemployment is worthy of comment, as this difference cannot be explained in terms of differences in human capital (education) or other socio-demographics. It may be because the types of jobs held by UC parents differ from those held by Married parents and that this is related to the security of their labour market attachment. Indeed, the data show that the proportion of UC parents holding 'managerial' jobs⁵² is lower, at 27% compared to 37% of Married PCGs reporting that they hold managerial jobs (chi-square test significant at $p < .001$). The odds of a working UC parent having held a managerial job at W1 were 23% lower than those for working Married parents holding such a job even controlling for education.⁵³ An interaction between marital status and 'managerial jobholder' in the full model proved significant, indicating that this is part of the explanation as to the greater likelihood of UC parents transitioning into unemployment.

⁵¹ Controlling for standard set of factors, incl. smoking/drinking while pregnant, whether they get enough help from outside the home, a measure of positive educational change between waves, and a measure of change in number of children in household between waves.

⁵² Question asks whether the respondent supervises or manages any personnel in their job; Q. D6 [apds23]

⁵³ Logistic regression model with 2 independent variables, applying population weights.

Transition into work

Results for transition into the current economic status of ‘working’ by wave 2 (from a prior state of not-working, whether due to being a homemaker, student or being unemployed at wave 1) show:

- **Marital status:** there is no variation by marital status in the likelihood of transitioning into work when controlling for other factors
- **Higher likelihood:** those in the top two income quintiles relative to those in the lowest quintile at W1 were more likely to transition into work from non-work; those with higher levels of education at W1 were also more likely to make this transition: Degree holders were 1.4 times more likely than those who had completed only Secondary education to do so; those who had attained a higher level of education between waves (positive educational change) were 1.3 times more likely to have transitioned into work than those whose education level had not changed
- **Lower likelihood:** those with larger families at W1 and parents who had a family history of poverty were less likely to have made such a transition over time; a positive change in the number of children in the household between waves (i.e. number of children in household increased between waves of the study) predicted a lower likelihood of transition into work
- **Note:** of those who transitioned from ‘non-work’ at W1 into work by W2 the vast majority were initially involved in Home Duties (82%) with a further 10% recorded as Unemployed and 5% as Students.

Transition into work from home duties

Constraining the model to look only at those who **transitioned from home duties into employment** between waves of the study returns results in line with transition into work generally:

- **Marital status:** there is no variation by marital status in the likelihood of transitioning into work when controlling for other factors
- **Family Transition:** those who transitioned from Solo parenthood into cohabitancy were almost twice as likely to have transitioned into work by wave 2 ($p < .10$)
- **Higher likelihood:** those in the top income quintile relative to those in the lowest quintile at W1 were more likely to transition into work from non-work; those with higher levels of education at W1 were more likely to make this transition: Degree holders were 2.4 times more likely than those who had completed only Secondary education to do so; those who had attained a higher level of education between waves (positive educational change) were 1.7 times more likely to have transitioned into work than those whose education level had

not changed; older parents were more likely to have transitioned into employment between waves ($p < .10$) ; rural dwellers as opposed to urban dwellers were more likely to have made such a transition over time

- **Lower likelihood:** those with larger families at W1 were less likely to have made such a transition; families which saw the number of children in household increase (positive change in number of children) were less likely to see the PCG transition from non-work into work⁵⁴
- **Note:** model N = 2943

Impacts: Work transitions and SDQ scores

Modelling the impact of **transition into unemployment** on child socio-behavioural outcomes we find that there is no impact of this transition on SDQ scores when controlling for a range of other possible determinants (model N = 5511).

Likewise, modelling the impact of **transition into work from non-work** on child socio-behavioural outcomes we find that there is no impact of this transition on SDQ scores when using the same set of controls.

Household income by marital status

Table 5.7 shows mean equivalised household income by wave of the GUI study, and the gap between different types of marital status. Interesting to note is change in mean household income for cohabitant households over time. Mean household income declined by almost €4,000 for Married parents over this time period, coinciding with the recession, while mean household income for Unmarried-cohabitant parents declined by almost €4,300. The decline in mean household income for Solo parents was much smaller at about €900 in the period between waves 1 and 2. Median household income barely declined at all for Solo parents during this period, meanwhile median household income declined by about €3,500 for Married parents and €4,500 for Unmarried-cohabitant parents during this time.

The Married 'Gap' reported in the table captures the difference in mean household income when comparing UC parents or Solo parents to Married parents. At wave 1 this gap was €4,352 between UC and Married parents, and this had in fact increased to €4,615 by wave 2. The gap in mean

⁵⁴ Age is no longer significant when controlling for change over time in number of children in household.

household income between Solo parents and Married parents was just over €11,000 at wave 1, but this had narrowed to €7,829 by wave 2.⁵⁵ Controlling for education naturally accounts for some of the differences between marital status groupings. Accounting for the effects of education reduces the gap between Married and UC parents by about 44-45% and reduces the gap between Solo and Married parents by about 34-38%, however substantial differences still remain at wave 2.

Table 5.7: Mean equivalised household income by wave of GUI

Wave 1	<i>Mean</i>	<i>Std. Error*</i>	<u>95% Conf. Interval</u>		<i>Married 'Gap'</i>	<i>Married 'Gap' controlling for Education</i>	<i>Median</i>
			<i>lo</i>	<i>hi</i>			
Married	23805	182	23448	24161	0	0	21283
Unmarried-cohabitant	19453	325	18816	20089	-4352	-2427	17482
Solo	12782	348	12100	13464	-11023	-7278	10963
Wave 2							
Married	19723	172	19385	20061	0	0	17931
Unmarried-cohabitant	15108	255	14609	15607	-4615	-2632	13065
Solo	11894	224	11454	12334	-7829	-5182	10452

Source: GUI waves 1 & 2; *linearized standard error; wave-specific population weights applied

⁵⁵ It should be noted that due to attrition and changes in marital status between waves we are not here comparing identical cohorts of the same people, and that the wave 2 sample is necessarily smaller than the wave 1 sample; population weights have, as throughout the report, been applied to account for attrition.

5.3. Maternity Leave

Maternity leave and impacts on parents and children

Respondents varied by marital status in the amount and type of leave they took after giving birth. Almost 90% of respondents took their entitlement to paid maternity leave (dropping to 81% among Solo parents, but absolute numbers of Solo parents who were working before birth are small). Meanwhile less than half of Married parents took unpaid maternity leave and only 37% of Unmarried-cohabitant mothers did so, with similar proportions taking annual leave entitlements from work to spend time with their child after birth. Table 5.8 captures the distribution of those taking and not taking different types of leave by marital status at wave 1.

Table 5.8: Proportions (%) taking leave after birth by marital status at W1

Paid maternity leave	<i>Married</i>	<i>Unmarried-cohabitant</i>	<i>Solo</i>	<i>Total % (N)</i>
Took leave	90.5	87.5	81.8	89
No leave taken	9.5	12.5	18.2	10.8
<i>Total N</i>	<i>3648</i>	<i>981</i>	<i>322</i>	<i>(4951)</i>
Unpaid maternity leave				
Took leave	47	37.5	21	43
No leave taken	53	62.6	79	57
<i>Total N</i>	<i>3638</i>	<i>978</i>	<i>320</i>	<i>(4936)</i>
Annual leave				
Took leave	48.8	36	30	45
No leave taken	51	64	70	55
<i>Total N</i>	<i>3639</i>	<i>977</i>	<i>321</i>	<i>(4937)</i>

Note: figures are row %; population weighted tables; p=.000 for each indicator; Refusals/DKs excluded; highest row percentages highlighted

There is some overlap in the types of leave that parents took after birth. While 90% of women took paid maternity leave it was also seen that:

- 37% of those who took paid maternity leave also took unpaid maternity leave
- 5% of people took neither paid nor unpaid maternity leave

This latter group of women taking neither type of leave were seen in regression analysis to be almost twice as likely to be Solo parents rather than Married parents ($p < .10$), and were more likely to be younger, poorly educated, less well-off and with larger families already.

Maternity leave association with SDQ scores

Fig. 5.1 looks at whether taking or abstaining from certain types of leave (at wave 1) is associated with child scores on the SDQ measure of difficulties (at wave 2). There appears to be some variation across marital status among the small number of people who did not take paid maternity leave, such that Unmarried-cohabitant parents' children score much higher than the children of Married parents in terms of social and behavioural difficulties.⁵⁶ When controlling for other factors relevant to explaining variation in SDQ scores⁵⁷, whether or not parents took **paid maternity leave does not have a significant association** nor is the effect of this variable seen to vary by marital status (i.e. there is no interaction). Recall that only about 10% of respondents who had been working did not take paid maternity leave and that non-receipt of paid maternity leave is explicable in terms of socio-demographic characteristics. Variation in SDQ scores is also explicable in terms of such characteristics.

Looking to **unpaid maternity leave**, Fig. 5.2 shows a substantial 1-pt gap between Married and Unmarried-cohabitant parents among those who did not take unpaid maternity leave; the children of UC parents appear to have more difficulties as measured by the SDQ scale. Controlling for the other factors which help to account for variation in SDQ scores shows a significant effect: not taking unpaid maternity leave predicts higher levels of infant socio-behavioural difficulties. More than this, there is in fact a *significant interaction between marital status and unpaid maternity leave* in the determination of SDQ scores. In other words, taking (or not taking) unpaid maternity leave impacts on SDQ scores and this effect varies according to whether the parents are Married or Unmarried-cohabitant.

⁵⁶ We exclude Solo parents from consideration here due to very small cell sizes and the relatively low proportion of Solo parents who were working before birth.

⁵⁷ Controls used are the same as in Model 2, section 4.4, subsection titled 'Predicting children's SDQ Total Difficulty scores'.

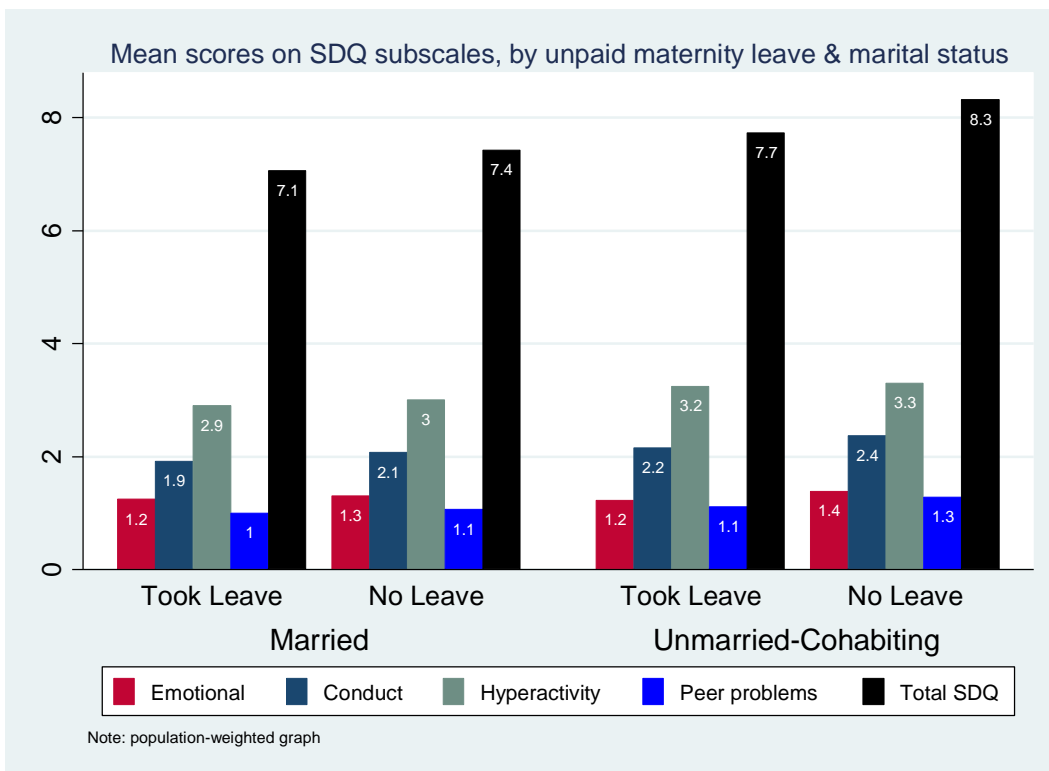
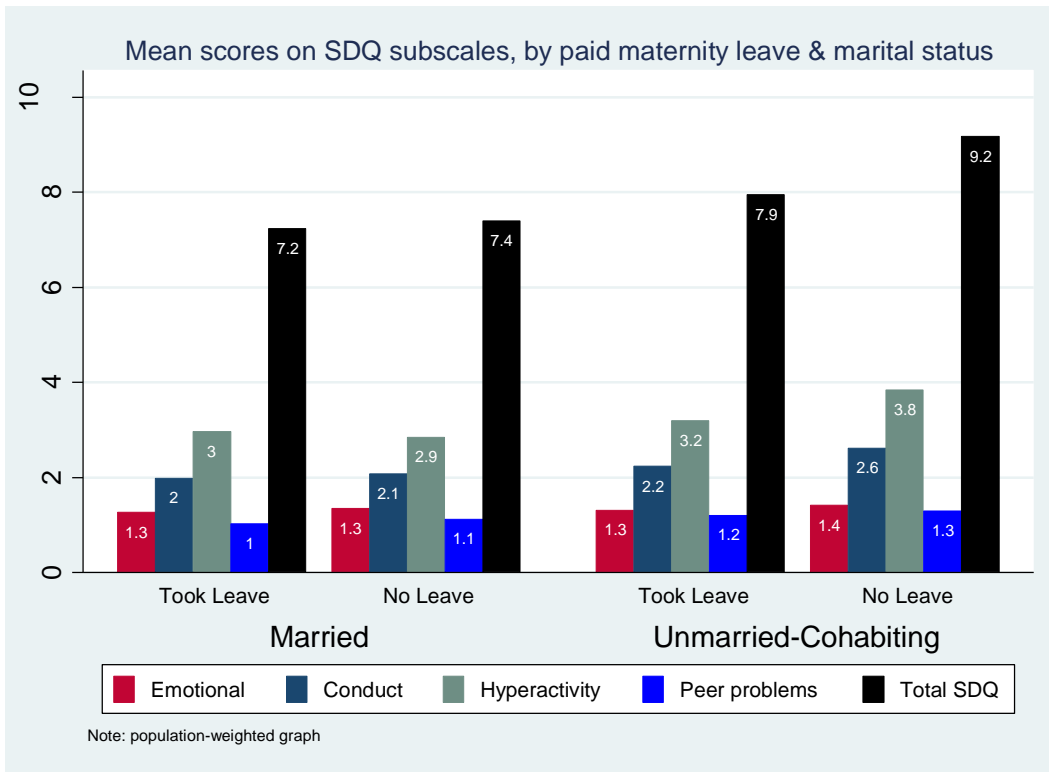


Fig. 5.1 (above) & Fig. 5.2 (below)

Calculating predicted SDQ scores from this interactive model, holding other covariates at their means, gives the results in Table 5.9. The effect is greater for UC parents; children of those UC parents who did not take unpaid maternity leave are predicted to have scores on the SDQ index 1.2 points higher than children of those UC parents who did take unpaid maternity leave. SDQ scores among those who did not take unpaid maternity leave are also slightly higher for UC parents than for Married parents. These results remain even accounting for a range of other determinants of infant socio-behavioural difficulties.

Table 5.9: Marital status and unpaid maternity leave interaction, predicting SDQ scores age 3

<i>Predicted SDQ score</i>	<i>Married</i>	<i>Unmarried-cohabitant</i>
Took unpaid maternity leave	7.14*	6.31*
Did not take unpaid maternity leave	7.51*	7.55*

* $p < .05$; marginal effects predicted at means of other covariates

Finally we looked to variation in difficulties according to whether or not the mother used some of her **annual leave** entitlement after birth. Despite the appearance of a gap between Married and UC parents in SDQ scores there was *no significant interaction* of annual leave with marital status when controlling for other factors in the full model.

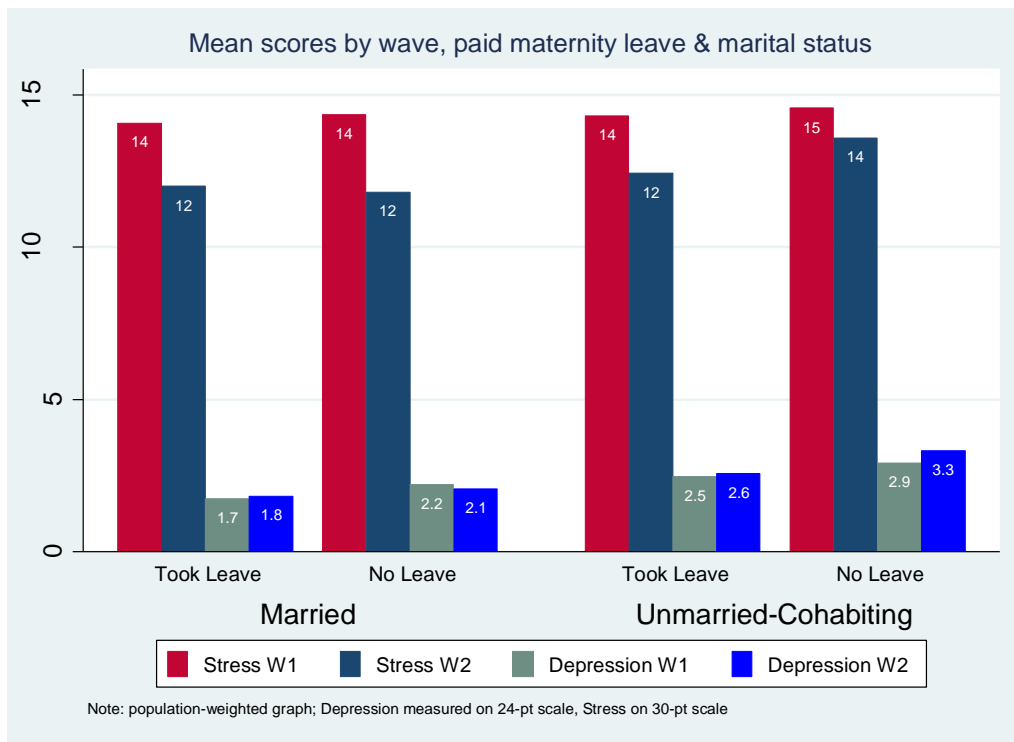
Maternity leave association with Child's physical abilities at 3 years

A number of models were run to assess whether the mother's taking different types of maternity leave after birth were associated with the **child's physical abilities** at age 3, such as the ability to throw a ball overhand, copy a vertical line, stand on one leg etc. There were no significant associations when controlling for other relevant determinants.

Maternity leave association with parental Stress and Depression

Looking to PCG **stress and depression** scores there appeared to be higher stress and depression scores at wave 2 for Unmarried-cohabitant parents when compared to Married parents, Fig. 5.3. However, there was no significant association of any of the maternity or annual leave indicators with change in PCG stress or depression from wave 1 to wave 2 when controlling for other factors. Whether or not respondents took any of these types of leave did not tell us anything meaningful about changes in their reported stress or depression levels and these were explained instead by other background characteristics.

Fig. 5.3



Maternity leave association with Parent-child relationship & with Parenting style

There were no significant associations of different types of maternity/annual leave with either of the Pianta scales for **positivity or conflict** measuring the quality of the parent-child relationship, when controlling for other factors, nor with any of the three scales measuring parenting style in terms of **warmth, consistency and hostility**, when controlling for other factors.

Length of leave

Length of different types of maternity leave taken was seen to vary significantly by marital status, see Table 5.10.

Table 5.10: Mean length of maternity leave in weeks by marital status

Mean length of leave (weeks)	Married	Unmarried- cohabitant	Solo	Total
Paid maternity leave	25.6	25.4	25.2	25.5
Unpaid maternity leave	10	10.5	11.7	10.1
Annual leave	4	3.5	3.3	3.9

Note: Solo parents N for unpaid maternity and for annual leave <100; population weighted table, all indicators significantly associated with marital status, $p < .01$

5.4. Welfare

The term ‘welfare’ is here construed broadly to encompass both the general welfare of families, in the sense of being able to make ends meet, and the specific use of state-provided (social) welfare benefits. The GUI dataset allows us to look at the ease with which people feel they can make ends meet and also at how these perceptions have changed over time. This change over time coincides with a period of severe economic difficulty in Ireland. Table 5.11 shows how these perceptions have changed from wave 1 to wave 2. For example, of those reporting in wave 1 that they could ‘fairly easily’ make ends meet in their household, 37.5% report that they can still make ends meet ‘fairly easily’ at wave 2 (blue shaded box), but a similar proportion of 39% now report that they can make ends meet only ‘with some difficulty’ while 3% of respondents do so ‘with great difficulty’.

Greater difficulty making ends meet (change over time)

Table 5.11: Change over time in difficulty of making ends meet

W1	W2						Total %	Total N
	With great difficulty	With difficulty	With some difficulty	Fairly easily	Easily	Very easily		
With great difficulty	43	18.3	29.5	6.94	1.14	1.13	100	435
With difficulty	20.13	29.23	40.5	8.65	1.27	0.22	100	752
With some difficulty	8.87	19.11	52.85	15.76	3.07	0.34	100	2940
Fairly easily	3.32	8.13	39.37	37.54	9.5	2.14	100	3771
Easily	1.5	5.11	22.65	42.54	22.29	5.9	100	1400
Very easily	3.04	2.92	15	27.13	25.62	26.29	100	487
Total	7.97	13.01	39.77	27.3	8.94	2.99	100	-
Total N	742	1193	3802	2750	956	342	-	9785

Note: figures are row percentages; W1 to W2 correspondence highlighted; population weighted table

Overall, 43% of those sampled reported increased difficulty over time associated with making ends meet in their household. There was no variation by marital status in this regard. Controlling for other factors and modelling whether respondents reported an increased difficulty making ends meet shows:

- **Marital status:** no effect
- **Lower likelihood:** those in lower income quintiles, and those with higher levels of education ($p < .10$), were less likely to have experienced greater difficulty in making ends meet over time; those who experienced crisis pregnancy were significantly less likely to have encountered increased difficulty over time
- **Higher likelihood:** Smoking while pregnant, living rurally ($p < .10$) and feeling that one didn't have sufficient support outside the home ($p < .10$) were associated with an increased likelihood of finding it more difficult to make ends meet by wave 2 than at wave 1

Poverty

Poverty can be defined in a number of ways, often focusing either on income measures or on measures of material deprivation (Nolan and Whelan, 1996). Across Europe, an agreed and widely used measure of income poverty, or the 'at risk of poverty threshold', is taken as 60% of median equivalised household income. In 2011 for Ireland, the year when wave 2 data for GUI were collected, this threshold was €10,889 according to national figures from the Central Statistics Office (CSO, 2013). This implies median income of €18,148.

The GUI weighted data-based estimate of median income is €15,678 for wave 2, implying a poverty threshold of €9,406. We utilise the CSO estimate as this is based on a threshold applicable to the population of Ireland and so may be more readily interpretable, whereas a GUI-specific threshold would apply only to the population of parents in Ireland with 3 year old infants in 2011. Utilising the CSO cut-off indicates that 26% of parents with 3 year olds were at risk of income poverty in 2011; this is out of line with the overall CSO estimate for the general population of 16% at risk of poverty (CSO, 2013). There is much variation by marital status in terms of those experiencing income poverty with Solo parents being more frequently at risk, see Table 5.12:

Table 5.12: Proportions at risk of income poverty by W2 marital status

<i>At risk of income poverty...</i>	<i>Married</i>	<i>Unmarried- cohabitant</i>	<i>Solo</i>	<i>Total</i>
Not at risk	81.1	62.8	46.2	73.9
At risk of Poverty	18.9	37.2	53.8	26.1
Total	100	100	100	100

Note: population weighted table; $p = .000$; highest row percentages highlighted

Change over time in welfare usage

Welfare usage in terms of whether households entered into 'welfare receipt' was seen to change over time. We consider change in welfare usage in terms of households that transitioned into receipt of welfare by wave 2 where they had been receiving no social welfare payments (other than universal entitlements) at wave 1. Transition into receipt of social welfare payments varied by marital status, see Table 5.13.

Table 5.13: Transition into welfare receipt over time by marital status

<i>Has household transitioned into welfare receipt since wave 1?</i>	<i>Married</i>	<i>Unmarried-Cohabitant</i>	<i>Solo</i>	<i>Total %</i>	<i>Total N</i>
No	79	53	32	72	5524
Yes	21	47	68	28	2136
Total N	6056	907	697	100	7660

Note: population weighted table; $p=.000$; % in receipt of social welfare payments at W2 who were not in receipt at W1; highest row percentages highlighted

Transition into welfare receipt

Modelling transition into welfare receipt controlling for marital status and other factors shows:

- **Marital status:** Unmarried-cohabitant parents were 1.7 times more likely than Married parents to transition into welfare receipt, while Solo parents were 3 times more likely than Married parents to do so; Solo parents are 1.8 times more likely than Unmarried-cohabitant parents to do so
- **Higher likelihood:** those in lower income quintiles at wave 1 were more likely to transition into welfare receipt over time; smoking while pregnant, being in poor health, family history of poverty ($p<.10$), or living in rural not urban areas ($p<.10$) are all associated with a higher likelihood of transitioning into welfare receipt over time
- **Lower likelihood:** those with higher levels of education are less likely to have transitioned into welfare receipt (Degree holders were half as likely as Secondary school completers to do so); older parents and native English speakers were less likely to make this transition

5.5. OPFP: One Parent Family Payment

The policy context and changes thereto are discussed at the beginning of this chapter.

Receipt of OPFP

In total, 9% of respondents sampled in wave 2 (N=776) are in receipt of OPFP. The vast majority of these are Solo parents, however 55 UC parents and 2 Married parents say they are in receipt of OPFP which may be anomalous (random error) or may represent improper claiming of this benefit given that these respondents are also all recorded as cohabiting with a partner or may be due to the social welfare system lagging behind changes in people's cohabitation arrangements. The data show:

- 60% of all Solo parents are in receipt of OPFP at wave 2, compared to 27% at wave 1
- Of those in receipt of OPFP, 27% are recorded as working at wave 2
- Of those not in receipt of OPFP, about half (47%) are working at wave 2
- Of those not in receipt of OPFP and not working, 46% are on other welfare benefits
 - Of those on welfare benefits, 16% are on disability, 20% are on JSA, 7% are on Illness benefit, 6% are on Back to Education allowance

Fig. 5.4

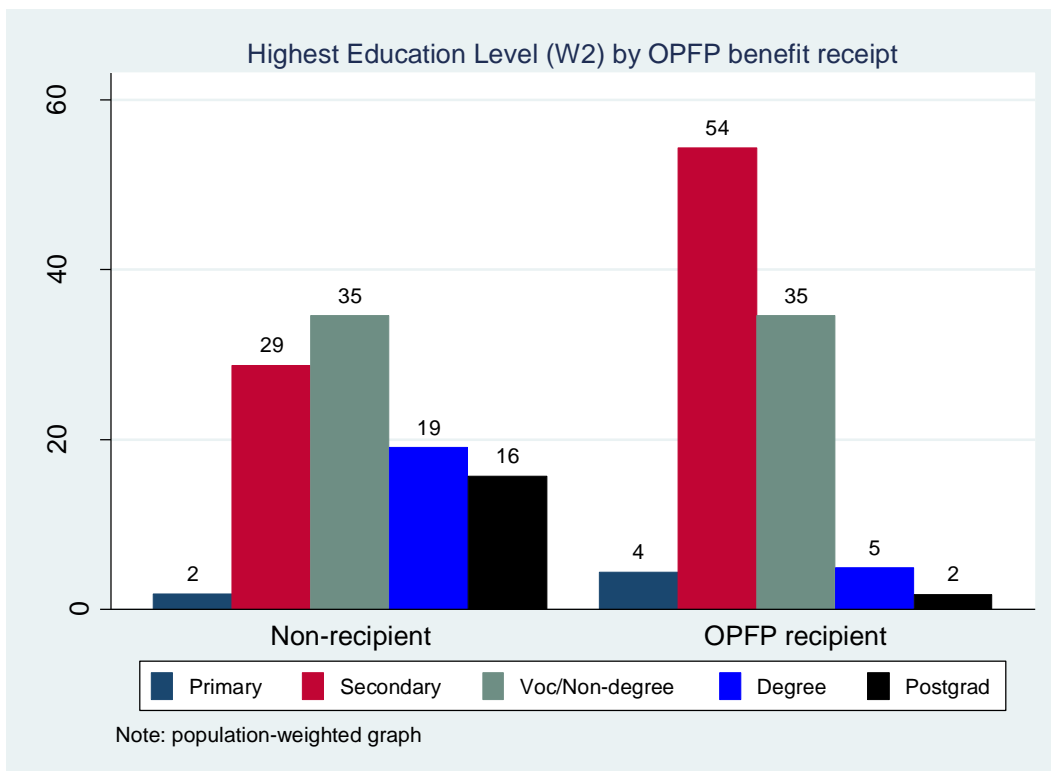
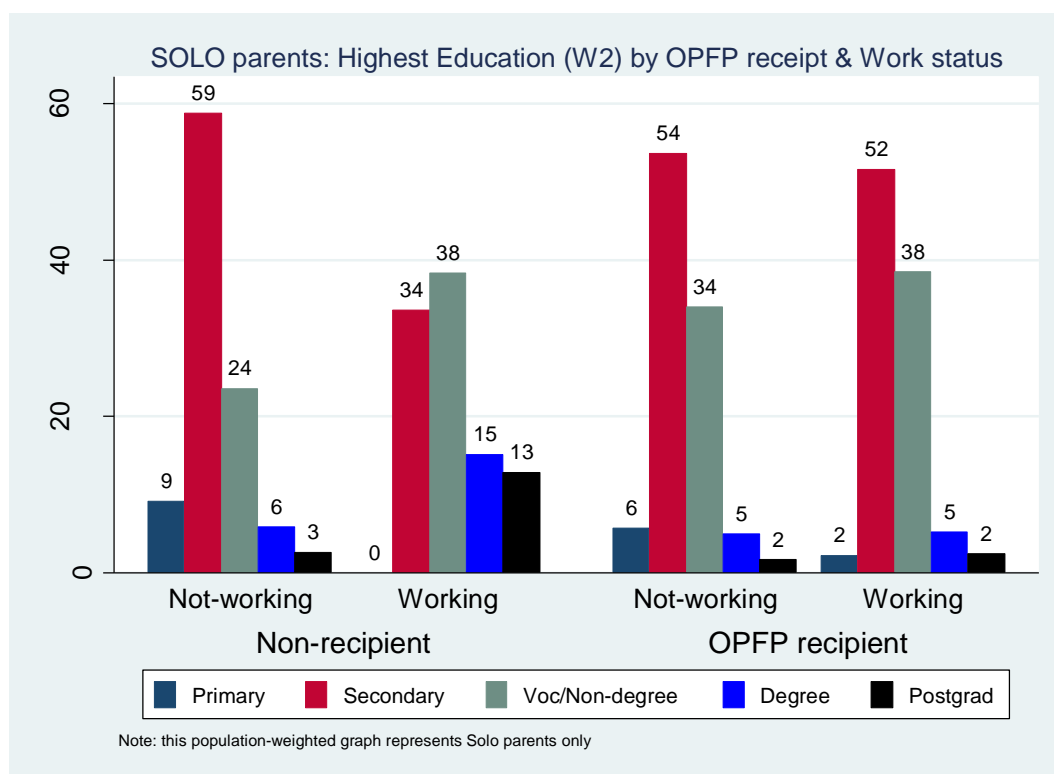


Fig. 5.5



Labour market readiness of those on OPFP

Looking at the distribution of educational qualifications by OPFP-recipientcy shows clear differences. Fig. 5.4 shows the proportions of respondents in the sample by the highest educational level achieved. While about 1 in 5 respondents who are not on OPFP possess a third-level Degree, this drops to 1 in 20 among those who are claiming OPFP. Over half of those on OPFP have attained only Secondary education as their highest level, which is much higher than the 19% in the population. This may impact negatively on their employment prospects.

As the majority of OPFP claimants are Solo parents we also look specifically at the highest educational levels of Solo parents, as categorised by their OPFP-recipientcy status and their employment status, Fig. 5.5. As a group, Solo parents on OPFP and not working (at wave 2) possess a somewhat poorer 'education profile' than those on OPFP and also working, though the groups are very similar. Slightly fewer possess post-Secondary vocational education in the non-working group. However for those on OPFP in general the incidence of Degree holders is much less than that for those Solo parents who are employed and not in receipt of OPFP benefit (5% vs. 15%). Among non-working Solo parents those claiming OPFP are actually somewhat better educated on average than non-claimants, with 41% holding post-Secondary qualifications compared to 33% of non-working non-claimants.

Positive educational change and OPFP

Looking to the proportions of respondents who experienced a positive educational change since wave 1 (i.e. increasing their highest level of educational attainment) we see that a higher proportion of those on OPFP (22%) increased their education level, compared to the rest of the population (16%) and this association was significant ($p=.000$).⁵⁸ This association was also significant ($p<.10$) even controlling for other factors that may lead to positive educational change; those who entered into OPFP receipt between waves of the study were 40% more likely than those who had not done so to record a higher level of education by wave 2 (see previous section in this chapter). Over two-thirds of the improvements in educational attainment by OPFP recipients were accounted for by attainment of 'Vocational/Non-degree' qualifications.

Current economic status

Differences also obtain across OPFP reciprocity in terms of current economic status at W2, see Table 5.14. Of those who are not currently working, 30% of those on OPFP have never worked; this compares with 13% of the rest of sample.⁵⁹ Of this 30%, over half ranked a preference to look after their children themselves as one of their top three reasons for not working.

Time out of labour market

Of those not currently working who had previously held a job, a smaller proportion of those on OPFP had held a job within the last three years compared to those not in receipt of OPFP, see Fig. 5.6. This may be negatively associated with labour market outcomes as those who have been out of the labour market for longer are at greater risk of their skills becoming obsolete and may find it harder to gain re-entry to the labour market. Marriage and childbearing is linked consistently in research both to labour market entry/exit and to career disadvantages for women in terms of wage disparities and career progression (Drobnic et al., 1999; Waldfogel, 1998). The difference in time spent out of the labour market is significant controlling for other factors: among those not currently working who had previously worked, OPFP recipients were out of the labour market for longer.

⁵⁸ It should be borne in mind that the absolute number of OPFP recipients undergoing a positive educational change over time was small, $N=155$.

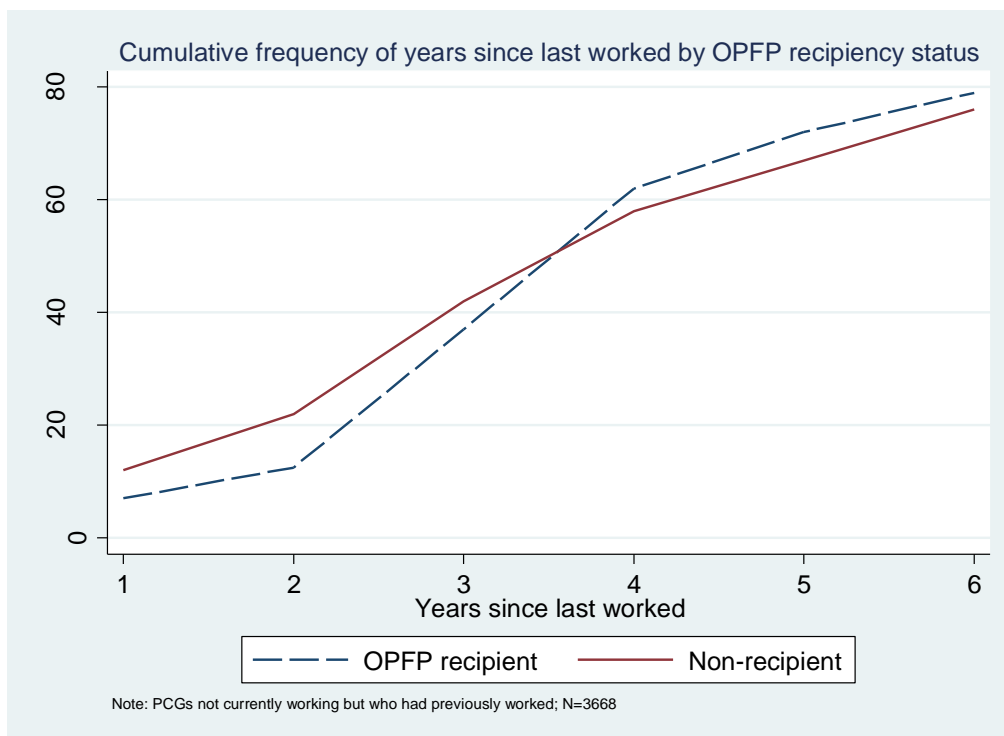
⁵⁹ Total N for this item = 4386; a tiny number of cases ($N=6$) held a part-time job at W2 never having had a full-time job.

Table 5.14: W2 economic status of those on OPFP by economic status

	Non-recipient	OPFP recipient	Total %	Total N
Working	55.5	28	53	5407
Student	1.9	8	2.5	243
Unemployed	4.8	13	5.6	516
Homemaker	35.2	50	36.6	3411
Other	2.5	1	2.4	210
Total %	100	100	100	-
Total N	9004	783	-	9787

Note: population weighted table, $p=.000$; shaded boxes indicate highest row percentage

Fig. 5.6



Model of being a non-working (non-active) OPFP recipient

We model the likelihood of being a ‘non-working OPFP recipient’, where this is defined as somebody who is claiming OPFP, and who is not already employed, not engaged in full-time education, not engaged in unspecified ‘other’ activities, and not technically unemployed (i.e. not working but actively seeking work). Essentially we are interested in the characteristics of those OPFP recipients who are not labour market active. Analysis of the ‘risk factors’ associated with being a non-working OPFP recipient shows:

- **Family transition:** Unmarried-cohabitant parents who transition into Solo parenthood are almost four times more likely than other respondents to be non-working recipients of OPFP
- **Higher likelihood:** those in lower income quintiles, those who feel they do not receive sufficient help outside the home, those who smoked while pregnant, or are in bad health, or who had experience of crisis pregnancy are all more likely to be in this group of non-working recipients of OPFP; those who experienced crisis pregnancy are twice as likely as those who did not to be in this group
- **Lower likelihood:** those with levels of education higher than Secondary level, as well as older parents and non-native English speakers are all less likely to be in this group

Transition into work & OPFP recipiency

Transition into OPFP itself did not predict transition into work, however being an OPFP recipient at W2 was significantly associated with a higher likelihood of having transitioned into work by W2:

- those who were claiming OPFP at wave 2 were 1.5 times more likely than non-claimants to have transitioned into work between waves ($p < .10$), controlling for other factors including whether the respondent improved their highest level of education between waves of GUI
- This may suggest that OPFP is beneficial in helping parents to secure employment⁶⁰

These results are presented in the Appendix regression tables for the Work and Welfare chapter under the section heading ‘*Change over time in OPFP, Education and Work*’.

⁶⁰ While there is no evidence that those who *transitioned* into OPFP were more likely to have transitioned into work, when controlling for other factors, i.e. the finding of an effect applies only to those claiming OPFP *at wave 2*, it may be that mere entry into OPFP did not help entry into work, but that being in receipt of OPFP facilitated labour market entry; there was no association when constraining the model to look specifically at transition from ‘unemployment’ into work.

5.6. Summary and Policy Implications: Work and Welfare

Employment and employment transitions

General

- A greater proportion of Solo parents improved their level of education over time than parents from other marital status groups
- However this difference was accounted for by pre-existing differences in income and education
- Almost one-quarter of those with Secondary education as their highest level at W1 reported a higher level of education (almost entirely Vocational/Non-degree) by W2

Positive educational change over time

- Unmarried-cohabitant and Solo parents were significantly less likely than Married parents to improve their level of education over time if they had been working at wave 1, controlling for other factors
- Solo parents who transitioned into cohabitancy and had been previously labour market inactive were more than twice as likely as other parents to improve their level of education and this effect was highly significant
- Those in higher income brackets were more likely to have improved their education
- Women with larger families at wave 2 were less likely to have improved their education level over time ($p < .10$), highlighting perhaps the importance of appropriate and affordable childcare services for women with large families who may wish to improve their education over time
- Labour market-inactive women at wave 1 who were in bad health were significantly less likely to have improved their education over time
- Having experienced crisis pregnancy was associated with a higher likelihood of improving one's level of education. Why this might be so is unclear but qualitative research with women who experienced CP may help to understand the processes behind this finding. It may be that this unexpected pregnancy was highly stressful for the women involved precisely because it interrupted their studies, to which they later returned

Positive educational change over time & OPFP

- Entering into receipt of the One Parent Family Payment (OPFP) between waves 1 and 2 of the GUI study was associated with a higher likelihood of improving one's level of education
- Those who were employed at W1 and who entered into receipt of OPFP were more than twice as likely to have also improved their educational level over time
- There was a higher incidence of part-time work among those on OPFP (at W2) who improved their education

Current economic status and change over time

- Over 70% of those who were Homemakers at wave 1 were still Homemakers by wave 2
- Over 80% of those who were Working at wave 1 were still Working by wave 2, while 13% had become homemakers and 3% were unemployed

Transition into unemployment

- Unmarried-cohabitant PCGs were more likely than Married PCGs to transition into unemployment by wave 2, having been previously employed at wave 1
- This difference could not be accounted for in terms of pre-existing differences in education or other background characteristics
- However this was related to the greater propensity of Married parents to hold 'better' jobs than UC parents; the job profile and income profile of UC parents is poorer relative to Married parents
- Education generally was not associated with likelihood of transitioning into unemployment; Income was however associated, with transition into unemployment more likely to affect the less well-off

Transition into work

- The likelihood of transition into labour market activity did not vary by marital status
- Having a higher level of education or being in a higher household income bracket were associated with a higher likelihood of moving from non-work into work over time
- Improving one's level of education between waves of the study was also associated with a higher likelihood of transitioning into work
- Having a relatively large family or having more children between waves was associated with a lower likelihood of transition into work

Household income by marital status

- Mean equivalised household income declined by almost €4,000 for Married parents between waves 1 and 2
- Mean equivalised household income declined by almost €4,300 for Unmarried-cohabitant parents between waves 1 and 2
- Decline in mean household income for Solo parents was much smaller at about €900 between waves 1 and 2
- The gap in mean equivalised household income between Married and UC parents increased slightly between waves 1 and 2 and amounted to €4,615 by wave 2
- The gap in mean equivalised household income between Married parents and Solo parents narrowed over time but still amounted to €7,829 by wave 2
- Differences in education accounted for 44-45% of the gap between UC and Married parents mean household income
- Differences in education accounted for 34-38% of the gap between Solo parents and Married parents mean household income

Maternity Leave: incidence and impacts

General

- Wave 1 data showed that there were significant associations between marital status and the type or extent of maternity leave taken
- Solo parents who had been employed were less likely to take any form of post-birth leave, even including their statutory entitlement
- Taking unpaid maternity leave varied by marital status: One fifth (21%) of Solo parents took this leave, compared to about half of Married parents (47%), and 37% of UC parents
- Most people took their paid maternity leave entitlements. Less than half of women (37%) who took paid maternity leave also took their unpaid maternity leave entitlement

Impacts on children: socio-behavioural outcomes

- There was no association of not taking paid maternity leave with infant socio-behavioural outcomes as measured by SDQ scores
- Not taking unpaid maternity leave was associated with worse outcomes for children, i.e. higher SDQ scores

- This effect varied by marital status and was seen to be greater for Unmarried-cohabitant parents. Children of UC parents who had not taken unpaid maternity leave had higher levels of difficulties than children of Married parents who had likewise not taken such leave
- There was no impact of not taking annual leave post-birth on infant behavioural outcomes
- Taking or not taking maternity leave (paid or unpaid) or annual leave showed no association with children's physical development, or with PCG stress, depression, or parenting style or parent-child conflict

Welfare

- 43% of respondents reported that 'making ends meet' was more difficult at wave 2 than they had indicated at wave 1. This did not vary by marital status
- Having higher levels of education and having external support from family and friends outside the home were 'protective factors' against this
- Those in lower income quintiles were less likely to have reported encountering greater difficulty by wave 2
- About 26% of families overall were classified as 'at risk of income poverty' rising to 54% among Solo parent families

Change over time in welfare usage

- One-in-five Married parents entered into receipt of social welfare benefits of some sort between waves 1 and 2 of the study. The corresponding figure for UC parents was almost one-in-two (47%), while for Solo parents it was two-in-three (68%)
- These differences remained when accounting for pre-existing differences in terms of income, education and other background characteristics: Solo parents were more likely than either cohabitant group to have entered into receipt of welfare benefits, and UC parents were significantly more likely than Married parents to have done so
- Poor health, low income, low education and class factors such as a family history of low income were associated with a higher likelihood of entering into benefit receipt

One Parent Family Payment (OPFP)

General

- 60% of all Solo parents are in receipt of OPFP at wave 2
- Of those Solo parents in receipt of OPFP, 27% are recorded as working at wave 2
- Of those Solo parents not in receipt of OPFP, about half (47%) are working at wave 2

Labour market readiness of those on OPFP

- Education levels generally are poor amongst recipients of OPFP
- The educational profile of the group of Solo parents who are not working at wave 2 is similar, regardless of whether they are in receipt of OPFP
- However the educational profile of non-working Solo parents on OPFP is poor in comparison to working OPFP-recipients and poorer again when compared to Solo parents who are working and not in receipt of OPFP
- Solo parent OPFP recipients hold a Degree-level education with only one-third the frequency of non-OPFP recipient Solo parents
- Of those in receipt of OPFP who are not currently working, 30% have 'never worked'
- Among those not currently working who had previously worked, OPFP recipients had been out of the labour market for longer

Transition into OPFP receipt over time

- Transition into OPFP receipt was associated with positive educational change over time, i.e transitioning to a higher level of education
- Recipients of OPFP at wave 2 were more likely to have transitioned into employment over time from a prior position of non-work ($p < .10$)

Non-labour market active OPFP recipients, characteristics

- Unmarried-cohabitant parents who transition into Solo parenthood are almost four times more likely than other respondents to be non-working recipients of OPFP
- Being less well-off, poorly educated, relatively young, in bad health, or having experienced a crisis pregnancy were all characteristics of non-active OPFP recipients

Policy implications

- Educational improvement between GUI waves has been shown here to be associated with a higher likelihood of transition into work. Where improving the labour market readiness of non-labour market active women through education is an ongoing policy concern, support should be directed towards those groups less likely to seek improved education and most in need of such support. At the same time, in the context of scarce resources, policymakers may have more initial success targeting those whose 'resource-need' is lower given their closer proximity to the labour market, i.e. those who have been out of the labour market for a shorter period of time will face lower barriers to re-entry than those who have been non-active for a longer period. Adequate childcare arrangements will be an important consideration in securing human capital gains for non-labour market active parents through education. Existing schemes such as the CETS (Childcare Education and Training Support) tie childcare provision to specific types of vocational training course. Targeting supports at courses of greatest labour market relevance and at individuals facing lower labour market barriers seems likely to bring the greatest gains
- Changes were effected in Budget 2013 in rates of maternity leave paid but not in the number of weeks of maternity leave to which women are statutorily entitled. As women's leave-taking habits are highly policy responsive with regard to paid statutory entitlements it seems unlikely that these changes will impact on whether women take the full extent of their paid maternity leave; most will continue to do so. However, if the reduction in rates creates financial difficulties for some women it may result in an earlier return to work or it may reduce the amount of unpaid maternity leave women take after their paid statutory entitlement. These findings show much variation by marital and cohabitancy status in whether or not women take unpaid maternity leave. Further, the findings show positive impacts on children in terms of socio-behavioural outcomes where parents took unpaid maternity leave. The impact of not taking this leave was seen to vary by marital status, having a greater impact on children of Unmarried-cohabitant parents. In light of this, monitoring the impact of maternity leave rate changes on unpaid maternity leave-taking seems advisable. Likewise, the potential for non-Married parents and their families to be adversely affected by these changes should be taken into account by policymakers
- For those already in work, Unmarried-cohabitant parents and Solo parents were less likely than Married parents to have improved their education over time. This may suggest the

need to examine the adequacy or flexibility of in-work supports for parents in these groups who may wish to improve their education

- The greater vulnerability of certain Unmarried-cohabitant parents to entering into unemployment, due in part to their differing employment profiles (holding managerial-level jobs with less frequency than Married parents), underscores the potential individual and labour market gains to be made by improving education levels

One Parent Family Payment

- Among Solo parents, OPFP receipt was associated with positive educational change and with transition into work. Given that 'earnings disregards' operate for this welfare benefit the reduction of these disregards (from €130 in 2012 to €60 by Jan 2016 in line with the government's plans) may act to discourage OPFP recipients from transitioning into the workplace or pursuing education while perhaps supporting a part-time income with OPFP. This situation should be monitored going forward, in light of these findings
- The finding that claiming OPFP was associated with positive educational change between waves for those who were working at wave 1 may have further implications given that from the beginning of 2014 those claiming OPFP will no longer be allowed to claim a training allowance if attending a SOLAS (formerly FÁS) training course nor will they be allowed to claim another welfare payment if they enter on to a Community Employment (CE) scheme. If the detected effect was in part due to the availability of a training allowance for OPFP recipients (or extra resources arising from benefits attached to CE) then this policy change may have negative implications for the educational and labour market attainment of Solo parents
- A number of factors are of concern regarding the labour market readiness of OPFP recipients given the impending change to age thresholds for OPFP where recipients will be moved off OPFP onto another welfare benefit once their child reaches the age of 7 (effective for all recipients from July 2015). Education levels are poor relative to working Solo parents (whether on OPFP or not), 30% of those on OPFP and not working have 'never worked' and so may not possess even the 'soft skills' associated with the modern workplace and, of those who have worked before, OPFP recipients have been out of the labour market for a longer time than non-recipients. At a minimum, information campaigns to raise awareness about educational and training options and other more active measures to give people work experience will help in the transition out of OPFP. The adequacy of existing services must

also be taken into account and due consideration given to provision of new services where required given that 63,000 recipients of OPFP will be moved to other welfare benefits, mainly Jobseeker Allowance Transition, by July 2015; however a recipient is not required to be available for full-time work and genuinely seeking work until their youngest child reaches 14 years of age. This will be a critical period for facilitating and supporting former OPFP recipients as they prepare to transition into the labour market

- There is no intention as of yet to reduce the OPFP age threshold below 7 years of age. From the perspective of this infant cohort analysis, protecting the threshold at this level may be beneficial given the implication of OPFP receipt in educational improvement of primary caregivers over time. Future data, waves 3 and 4 of the GUI study, could allow for charting of educational and employment outcomes of those on OPFP over a longer duration

References

- Ahlstrom D (2013) Girls outperform boys in higher-level Leaving Cert subjects. *Irish Times*, Dublin, 16th August, Available from: <http://www.irishtimes.com/news/education/girls-outperform-boys-in-higher-level-leaving-cert-subjects-1.1495467>.
- Aldenderfer MS and Blashfield R (1984) *Cluster analysis*. Quantitative applications in the social sciences, London: Sage Publications, Inc.
- Amato PR and Gilbreth JG (1999) Nonresident fathers and children's well-being: A meta-analysis. *Journal of Marriage and the Family*, 557–573.
- Anthony LG, Anthony BJ, Glanville DN, et al. (2005) The relationships between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development*, 14(2), 133–154.
- Aylward GP (2005) Neurodevelopmental outcomes of infants born prematurely. *Journal of Developmental & Behavioral Pediatrics*, 26(6), 427–440.
- Bailey KD (1994) *Typologies and taxonomies: An introduction to classification techniques*. London: Sage Publications, Inc.
- Barber JS, Axinn WG and Thornton A (1999) Unwanted childbearing, health, and mother-child relationships. *Journal of health and social behavior*, 231–257.
- Baydar N and Brooks-Gunn J (1991) Effects of maternal employment and child-care arrangements on preschoolers' cognitive and behavioral outcomes: Evidence from the Children of the National Longitudinal Survey of Youth. *Developmental Psychology; Developmental Psychology*, 27(6), 932.
- Becker GS (2009) *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press, Available from: <http://books.google.co.uk/books?hl=en&lr=&id=9t69ilCmrZ0C&oi=fnd&pg=PR9&dq=labour+market+returns+to+++human+capital+theory+education&ots=WvEni1NymS&sig=Y2R5H81PrTqZ8Og5hinpBivQptk> (accessed 29 January 2014).
- Belsky J and Rovine MJ (1988) Nonmaternal care in the first year of life and the security of infant-parent attachment. *Child development*, 157–167.
- Berger L, Brooks-Gunn J, Paxson C, et al. (2008) First-year maternal employment and child outcomes: Differences across racial and ethnic groups. *Children and youth services review*, 30(4), 365–387.
- Berger LM, Hill J and Waldfogel J (2005) Maternity leave, early maternal employment and child health and development in the US*. *The Economic Journal*, 115(501), F29–F47.
- Berry JO and Jones WH (1995) The parental stress scale: Initial psychometric evidence. *Journal of Social and Personal Relationships*, 12(3), 463–472.
- BIS (2011) *The returns to higher education qualifications*. London: Dept for Business, Innovation and Skills.

- Bradley RH and Corwyn RF (2002) Socioeconomic status and child development. *Annual review of psychology*, 53(1), 371–399.
- Brooks-Gunn J and Duncan GJ (1997) The effects of poverty on children. *The future of children*, 55–71.
- Brooks-Gunn J., Han WJ and Waldfogel J (2002) Maternal employment and child cognitive outcomes in the first three years of life: The NICHD study of early child care. *Child Development*, 73(4), 1052–1072.
- Brooks-Gunn Jeanne, Han W-J and Waldfogel J (2002) Maternal employment and child cognitive outcomes in the first three years of life: The NICHD study of early child care. *Child development*, 73(4), 1052–1072.
- Brown GW and Moran PM (1997) Single mothers, poverty and depression. *Psychological medicine*, 27(1), 21–33.
- Buchmann C and DiPrete TA (2006) The growing female advantage in college completion: The role of family background and academic achievement. *American Sociological Review*, 71(4), 515–541.
- Burchinal MR, Roberts JE, Riggins Jr R, et al. (2000) Relating quality of center-based child care to early cognitive and language development longitudinally. *Child Development*, 71(2), 339–357.
- Carlson MJ and Corcoran ME (2001) Family structure and children's behavioral and cognitive outcomes. *Journal of Marriage and Family*, 63(3), 779–792.
- Carlson MJ, McLanahan SS and Brooks-Gunn J (2008) Coparenting and nonresident fathers' involvement with young children after a nonmarital birth. *Demography*, 45(2), 461–488.
- Carr-Hill RA, Rice N and Roland M (1996) Socioeconomic determinants of rates of consultation in general practice based on fourth national morbidity survey of general practices. *Bmj*, 312(7037), 1008–1012.
- Cheng D, Schwarz EB, Douglas E, et al. (2009) Unintended pregnancy and associated maternal preconception, prenatal and postpartum behaviors. *Contraception*, 79(3), 194–198.
- Christakis DA, Zimmerman FJ, DiGiuseppe DL, et al. (2004) Early television exposure and subsequent attentional problems in children. *Pediatrics*, 113(4), 708–713.
- Cole TJ, Bellizzi MC, Flegal KM, et al. (2000) Establishing a standard definition for child overweight and obesity worldwide: international survey. *Bmj*, 320(7244), 1240.
- Cooper CE, McLanahan SS, Meadows SO, et al. (2009) Family structure transitions and maternal parenting stress. *Journal of Marriage and Family*, 71(3), 558–574.
- Corrigan O (2013) *See How They Grow: Solo and Unmarried-cohabitant parenthood and Crisis Pregnancy in Ireland*. Dublin: Treoir.
- Crnic KA, Gaze C and Hoffman C (2005) Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. *Infant and Child Development*, 14(2), 117–132.

- CSO (2013) *Survey on Income and Living Conditions (SILC) 2011 & revised 2010 results*. Dublin, Ireland: Central Statistics Office, Available from: http://www.cso.ie/en/media/csoie/releasespublications/documents/silc/2011/silc_2011.pdf.
- Curtis LJ, Dooley MD, Lipman EL, et al. (2001) The role of permanent income and family structure in the determination of child health in Canada. *Health Economics*, 10(4), 287–302.
- Deater-Deckard K (1998) Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychology: Science and Practice*, 5(3), 314–332.
- DeKlyen M, Brooks-Gunn J, McLanahan S, et al. (2006) The mental health of married, cohabiting, and non-coresident parents with infants. *Journal Information*, 96(10).
- Denham SA (1989) Maternal Affect and Toddlers' 'Socio-emotional competence'. *American Journal of Orthopsychiatry*, 59(3), 368–376.
- Denham SA (1993) Maternal Emotional Responsiveness and Toddlers' Social-Emotional Competence. *Journal of Child Psychology and Psychiatry*, 34(5), 715–728.
- Denham SA, Renwick SM and Holt RW (1991) Working and playing together: Prediction of preschool social-emotional competence from mother-child interaction. *Child Development*, 62(2), 242–249.
- Denham SA, Mitchell-Copeland J, Strandberg K, et al. (1997) Parental contributions to preschoolers' emotional competence: Direct and indirect effects. *Motivation and Emotion*, 21(1), 65–86.
- Desai S, Chase-Lansdale PL and Michael RT (1989) Mother or market? Effects of maternal employment on the intellectual ability of 4-year-old children. *Demography*, 26(4), 545–561.
- Dougherty C (2003) *Why is the rate of return to schooling higher for women than for men?* Centre for Economic Performance Discussion Paper, London: Centre for Economic Performance, London School of Economics, Available from: <http://eprints.lse.ac.uk/20034/>.
- Downey DB (1995) When bigger is not better: Family size, parental resources, and children's educational performance. *American Sociological Review*, 746–761.
- Drobnic S, Blossfeld H-P and Rohwer G (1999) Dynamics of women's employment patterns over the family life course: A comparison of the United States and Germany. *Journal of Marriage and the Family*, 133–146.
- DSP (2012) *A Review of Department of Social Protection Employment Support Schemes*. Dublin, Ireland: Department of Social Protection, Available from: <https://www.welfare.ie/en/downloads/Review%20of%20Employment%20Support%20Schemes.pdf>.
- DSP (2014a) Maternity Benefit information and rules. *Dept of Social Protection, Ireland*, Available from: <http://www.welfare.ie/en/Pages/mb.aspx>.
- DSP (2014b) One Parent Family Payment information and rules. *Dept of Social Protection, Ireland*, Available from: http://www.welfare.ie/en/Pages/278_One-Parent-Family-Payment.aspx.
- Egan N (2013) Reforms to the One Parent Family Payment (OFP). Treoir, Mayor Sq, Dublin.

- Egan N (2014) Treoir: One parent family payment question.
- Fuchs VR (2004) Reflections on the socio-economic correlates of health. *Journal of Health Economics*, 23(4), 653–661.
- Furstenberg FFJ, Morgan SP and Allison PD (1987) Paternal participation and children's well-being after marital dissolution. *American Sociological Review*, 695–701.
- Gable S and Lutz S (2000) Household, Parent, and Child Contributions to Childhood Obesity*. *Family Relations*, 49(3), 293–300.
- Gennetian LA (2005) One or two parents? Half or step siblings? The effect of family structure on young children's achievement. *Journal of Population Economics*, 18(3), 415–436.
- Goldberg S and DiVitto B (2002) Parenting children born preterm. In: *Handbook of Parenting, Vol 1: Children and parenting (2nd edition)*, New Jersey, US: Lawrence Erlbaum Associates, pp. 3–43.
- Goldenberg RL, Culhane JF, Iams JD, et al. (2008) Epidemiology and causes of preterm birth. *The Lancet*, 371(9606), 75–84.
- Goodman R (1997) The Strengths and Difficulties Questionnaire: a research note. *Journal of child psychology and psychiatry*, 38(5), 581–586.
- GUI (2011) *Growing Up In Ireland: Key Findings: Infant cohort (at 3 years); The Health of 3-year-olds*. GUI: Infant Cohort Key Findings, Dublin: Dept of Children and Youth Affairs.
- Harrison LJ (2008) Does child care quality matter. *Family Matters*, 79, 14–25.
- Herbst CM and Tekin E (2010) Child care subsidies and child development. *Economics of Education Review*, 29(4), 618–638.
- Herbst CM and Tekin E (2011) Do child care subsidies influence single mothers' decision to invest in human capital? *Economics of Education Review*, 30(5), 901–912.
- Jackson AP and Scheines R (2005) Single mothers' self-efficacy, parenting in the home environment, and children's development in a two-wave study. *Social Work Research*, 29(1), 7–20.
- Kalenkoski CM, Ribar DC and Stratton LS (2007) The effect of family structure on parents' child care time in the United States and the United Kingdom. *Review of Economics of the Household*, 5(4), 353–384.
- Kelpie C and Weston C (2014) Subsidised childcare 'needed' to get parents off the dole. *Irish Independent*, Dublin, 19th March, Available from: <http://www.independent.ie/business/personal-finance/subsidised-childcare-needed-to-get-parents-off-the-dole-30104845.html>.
- Kiernan K (2005) *Non-residential Fatherhood and Child Involvement: Evidence from the Millenium Cohort Study*. London: Centre for Analysis of Social Exclusion, LSE.
- Kimmel J (1998) Child care costs as a barrier to employment for single and married mothers. *Review of Economics and Statistics*, 80(2), 287–299.

- King V (1994) Nonresident father involvement and child well-being: Can dads make a difference? *Journal of Family Issues*, 15(1), 78–96.
- Lancaster CA, Gold KJ, Flynn HA, et al. (2010) Risk factors for depressive symptoms during pregnancy: a systematic review. *American journal of obstetrics and gynecology*, 202(1), 5–14.
- Lester BM, Garcia-Coll C, Valcarcel M, et al. (1986) Effects of atypical patterns of fetal growth on newborn (NBAS) behavior. *Child development*, 11–19.
- Lovejoy MC, Graczyk PA, O'Hare E, et al. (2000) Maternal depression and parenting behavior: A meta-analytic review. *Clinical psychology review*, 20(5), 561–592.
- Lunn P, Fahey T and Hannan C (2010) *Family Figures: Family dynamics and family types in Ireland, 1986-2006 [FSA, ESRI]*. Dublin, Ireland: ESRI/Family Support Agency.
- Masten AS and Coatsworth JD (1998) The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American psychologist*, 53(2), 205.
- McBride O, Morgan K and McGee H (2012) *Irish Contraception and Crisis Pregnancy Study 2010 [ICCP-2010]. A Survey of the General Population*. Dublin: HSE-Crisis Pregnancy Programme.
- McCashin A (1996) *Lone Mothers in Ireland: A Local Study*. Dublin: Combat Poverty Agency.
- McCrory C and Layte R (2012) Testing competing models of the Strengths and Difficulties Questionnaire's (SDQ's) factor structure for the parent-informant instrument. *Personality and Individual Differences*, 52(8), 882–887.
- McGinnity F, Murray A and McNally S (2013) *Growing Up In Ireland: Mothers' return to work and childcare choices for infants in Ireland (Report 2)*. GUI: Infant Cohort, Dublin: Dept of Children and Youth Affairs.
- McKeown K, Haase T, Pratschke J, et al. (2003) *Family Wellbeing: What makes a difference?* Dublin: Department of Social and Family Affairs; Family Support Agency.
- McLanahan S (1999) Father absence and the welfare of children. In: E. Mavis Hetherington (ed.), *Coping with divorce, single parenting, and remarriage: A risk and resiliency perspective*.
- McLeod JD and Shanahan MJ (1993) Poverty, parenting, and children's mental health. *American sociological review*, 351–366.
- McLoyd VC (1998) Socioeconomic disadvantage and child development. *American psychologist*, 53(2), 185.
- Meadows SO, McLanahan SS and Brooks-Gunn J (2007) Parental depression and anxiety and early childhood behavior problems across family types. *Journal of Marriage and Family*, 69(5), 1162–1177.
- Melhuish EC (2003) A literature review of the impact of early years provision on young children, with emphasis given to children from disadvantaged backgrounds. *London, UK: National Audit Office*, Available from: http://collection.europarchive.org/tna/20060731065549/http://www.nao.org.uk/publications/nao_reports/03-04/268_literaturereview.pdf (accessed 29 January 2014).

- Mulder EJH, Robles de Medina PG, Huizink AC, et al. (2002) Prenatal maternal stress: effects on pregnancy and the (unborn) child. *Early human development*, 70(1), 3–14.
- Murphy C, Keilthy P and Caffrey L (2008) *Lone Parents and Employment: What are the real issues?* Dublin: One Family, Available from: <http://www.onefamily.ie/wp-content/uploads/Lone-Parents-Employment-Research-Full-Report2.pdf>.
- Nixon E, Swords L and Murray A (2013) *Growing Up In Ireland: Parenting and Infant Development (Report 6)*. GUI: Infant Cohort, Dublin: Dept of Children and Youth Affairs.
- Nolan B and Whelan CT (1996) *Resources, deprivation, and poverty*. UK: OUP.
- NTO (2005) *Obesity - The policy challenges: The Report of the National Taskforce on Obesity*. Dublin: Department of Health and Children.
- OECD (2014) OECD measures of childcare costs and related work incentives. *Directorate for Employment, Labour and Social Affairs - Benefits and Wages: Statistics*, Available from: http://www.oecd.org/els/soc/Childcare_2012_EN_20140320.xlsx (accessed 28 March 2014).
- Orr ST, James SA, Burns BJ, et al. (1989) Chronic stressors and maternal depression: implications for prevention. *American Journal of Public Health*, 79(9), 1295–1296.
- Osborne C and McLanahan S (2007) Partnership Instability and Child Well-Being. *Journal of Marriage and Family*, 69(4), 1065–1083.
- Ozmert E, Toyran M and Yurdakok K (2002) Behavioral correlates of television viewing in primary school children evaluated by the child behavior checklist. *Archives of pediatrics & adolescent medicine*, 156(9), 910.
- Patterson GR, DeBaryshe BD and Ramsey E (1989) A developmental perspective on antisocial behavior. *American psychologist*, 44(2), 329.
- Pesonen A-K, Räikkönen K, Kajantie E, et al. (2006) Fetal programming of temperamental negative affectivity among children born healthy at term. *Developmental psychobiology*, 48(8), 633–643.
- Petterson SM and Albers AB (2001) Effects of poverty and maternal depression on early child development. *Child development*, 72(6), 1794–1813.
- Phillips DA and Lowenstein AE (2011) Early care, education, and child development. *Annual review of psychology*, 62, 483–500.
- Pianta R (1992) *Child-parent relationship scale*. Unpublished measure, University of Virginia, Available from: <http://curry.virginia.edu/academics/directory/robert-c.-pianta/measures>.
- Pinderhughes EE, Dodge KA, Bates JE, et al. (2000) Discipline responses: influences of parents' socioeconomic status, ethnicity, beliefs about parenting, stress, and cognitive-emotional processes. *Journal of family psychology*, 14(3), 380.
- Quail A, Williams J, McCrory C, et al. (2011) *A Summary Guide to Wave 1 of the Infant Cohort (at 9 months) of Growing Up in Ireland*. Dublin: ESRI/TCD.

- Quail A, Williams J, McCrory C, et al. (2013) *A Summary Guide to Wave 2 of the Infant Cohort (at 3 years) of Growing Up in Ireland*. Dublin: ESRI/TCD.
- Rao JN and Scott AJ (1984) On chi-squared tests for multiway contingency tables with cell proportions estimated from survey data. *The Annals of Statistics*, 46–60.
- Reichman NE, Corman H and Noonan K (2004) Effects of child health on parents' relationship status. *Demography*, 41(3), 569–584.
- Repetti RL, Taylor SE and Seeman TE (2002) Risky families: family social environments and the mental and physical health of offspring. *Psychological bulletin*, 128(2), 330.
- Russell H, Halpin B, Strandh M, et al. (2006) *Comparing the labour market effects of childbirth in Ireland, Sweden, the UK and Germany*. Available from: <http://www.esri.ie/pdf/WP170.pdf> (accessed 29 January 2014).
- S.I. No. 446 (2001) Crisis Pregnancy Agency (Establishment) Order 2001. Houses of the Oireachtas. Ireland.
- Sainsbury D (1999) *Gender and welfare state regimes*. Oxford University Press, Available from: <http://books.google.co.uk/books?hl=en&lr=&id=j38AISWiyyUC&oi=fnd&pg=PP12&dq=male+readwinner++female+child+care&ots=klkfQshw5H&sig=Zc00UXBSPg6KhKtnwVLBWTYb34U> (accessed 29 January 2014).
- Simons RL, Whitbeck LB, Beaman J, et al. (1994) The impact of mothers' parenting, involvement by nonresidential fathers, and parental conflict on the adjustment of adolescent children. *Journal of Marriage and the Family*, 356–374.
- Smeaton D (2006) Work return rates after childbirth in the UK-trends, determinants and implications: a comparison of cohorts born in 1958 and 1970. *Work, Employment & Society*, 20(1), 5–25.
- StataCorp (2009a) *Stata Base Reference Manual*. Release 11. Statistical Software, College Station, Texas: StataCorp LP.
- StataCorp (2009b) *Stata Multivariate Statistics Reference Manual*. Release 11. Statistical Software, College Station, Texas: StataCorp LP.
- Stone LL, Otten R, Engels RC, et al. (2010) Psychometric properties of the parent and teacher versions of the strengths and difficulties questionnaire for 4-to 12-year-olds: a review. *Clinical child and family psychology review*, 13(3), 254–274.
- Sylva K, Melhuish E, Sammons P, et al. (2004) *The effective provision of pre-school education (EPPE) project: Final Report: A longitudinal study funded by the DfES 1997-2004*. Institute of Education, University of London/Department for Education and Skills/Sure Start, Available from: <http://eprints.ioe.ac.uk/5309/1/sylva2004EPPEfinal.pdf> (accessed 29 January 2014).
- Takeuchi DT, Williams DR and Adair RK (1991) Economic stress in the family and children's emotional and behavioral problems. *Journal of Marriage and Family*, 1031–1041.
- Thompson Jr RJ, Merritt KA, Keith BR, et al. (1993) The role of maternal stress and family functioning in maternal distress and mother-reported and child-reported psychological adjustment of nonreferred children. *Journal of Clinical Child Psychology*, 22(1), 78–84.

- Thomson E, Hanson TL and McLanahan SS (1994) Family structure and child well-being: Economic resources vs. parental behaviors. *Social Forces*, 73(1), 221–242.
- Waldfogel J (1998) Understanding the ‘family gap’ in pay for women with children. *The Journal of Economic Perspectives*, 12(1), 137–156.
- Waldfogel J (2002) Child care, women’s employment, and child outcomes. *Journal of Population Economics*, 15(3), 527–548.
- Waldfogel J, Higuchi Y and Abe M (1999) Family leave policies and women’s retention after childbirth: Evidence from the United States, Britain, and Japan. *Journal of Population Economics*, 12(4), 523–545.
- Walker I and Zhu Y (2001) *The returns to education: Evidence from the Labour Force Surveys*. Dept for Education and Skills, Available from: <http://dera.ioe.ac.uk/4656/1/RR313.pdf> (accessed 29 January 2014).
- Webster-Stratton C and Hammond M (1988) Maternal depression and its relationship to life stress, perceptions of child behavior problems, parenting behaviors, and child conduct problems. *Journal of abnormal child psychology*, 16(3), 299–315.
- Williams J, Murray A, McCrory C, et al. (2013) *Growing Up In Ireland: Development from Birth to Three Years (Report 5)*. GUI: Infant Cohort, Dublin: Dept of Children and Youth Affairs.
- Wooldridge JM (2009) *Introductory econometrics: A modern approach*. 4th ed. Ohio, US: South Western Cengage Learning.

Technical Appendix

AI. Marital Status, Family transitions and Solo parents

Transition into different marital status

Logit models of transition into different marital status: odds ratios

	UC_M	UC_S	S_UM	UC_M	UC_S	S_UM
main						
1.inc_quintilesw1	0.367*** (0.115)	1.240 (0.669)	0.343 (0.235)	0.393** (0.175)	1.730 (1.084)	0.152* (0.148)
2.inc_quintilesw1	0.491** (0.139)	1.044 (0.524)	0.235** (0.167)	0.612 (0.202)	1.127 (0.649)	0.148* (0.155)
3.inc_quintilesw1	0.730 (0.203)	0.731 (0.372)	0.649 (0.462)	0.783 (0.257)	0.674 (0.431)	0.484 (0.457)
4.inc_quintilesw1	0.930 (0.225)	0.668 (0.316)	0.798 (0.618)	0.985 (0.256)	0.724 (0.368)	0.867 (0.848)
5b.inc_quintilesw1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
1.education_w1	2.886* (1.605)	2.205 (1.447)	0.590 (0.284)	2.406 (2.190)	2.462 (2.982)	0.337 (0.390)
2b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w1	1.213 (0.225)	0.781 (0.202)	1.331 (0.380)	1.178 (0.272)	0.846 (0.286)	1.600 (0.673)
4.education_w1	1.561* (0.365)	0.563 (0.224)	0.896 (0.518)	1.521 (0.410)	0.847 (0.379)	0.496 (0.405)
5.education_w1	1.738* (0.565)	1.482 (0.844)	0.058** (0.071)	1.902* (0.695)	2.283 (1.536)	
PCG Age at w1	0.988 (0.015)	0.935** (0.027)	0.984 (0.022)	0.960** (0.019)	0.946 (0.032)	0.954 (0.037)
Relationship 'unhappy' at w1	0.551* (0.180)	1.833* (0.644)		0.631 (0.257)	1.783 (0.709)	
Baby's health declined w1->w2	0.830 (0.167)	0.991 (0.283)	1.036 (0.283)	0.641* (0.159)	0.979 (0.407)	0.723 (0.342)
Ease of making ends meet (w1)	1.211** (0.099)	0.994 (0.109)	0.890 (0.099)	1.256** (0.134)	1.002 (0.163)	0.867 (0.164)
PCG 'doesn't get enough help'	0.835 (0.220)	0.870 (0.349)	0.568 (0.222)	0.959 (0.325)	1.010 (0.445)	0.555 (0.370)
Improved education level w1->w2	1.404 (0.315)	0.738 (0.236)	1.386 (0.377)	1.264 (0.355)	0.756 (0.343)	1.041 (0.500)
Num children in hhd increased w1->w2	1.203 (0.183)	0.356*** (0.099)	2.112*** (0.477)	1.403* (0.257)	0.282*** (0.098)	2.332** (0.893)
Num children in hsd at w1	0.997 (0.109)	1.020 (0.162)	1.193 (0.180)	0.875 (0.138)	0.822 (0.255)	0.945 (0.315)
Drank alcohol while pregnant	0.961 (0.198)	1.216 (0.351)	0.683 (0.230)	0.973 (0.236)	0.810 (0.310)	1.234 (0.581)
Smoked while pregnant	0.773 (0.148)	1.382 (0.345)	1.455 (0.344)	0.739 (0.185)	1.927** (0.623)	1.020 (0.385)
Crisis Pregnancy	0.971 (0.241)	0.980 (0.312)	0.635* (0.172)	0.783 (0.248)	0.762 (0.376)	0.809 (0.393)
Had Complications in Pregnancy	0.951 (0.156)	0.959 (0.227)	0.562** (0.139)	0.763 (0.147)	0.922 (0.288)	0.233*** (0.089)
Disability/Chronic Illness	1.103 (0.302)	0.540 (0.220)	0.825 (0.289)	1.332 (0.498)	0.174** (0.139)	0.783 (0.459)
PCG Health is Poor/Fair	0.793 (0.271)	1.751 (0.608)	0.826 (0.359)	1.035 (0.460)	1.385 (0.919)	0.631 (0.511)
PCG has family history of poverty	1.088 (0.231)	0.679 (0.218)	0.790 (0.230)	1.191 (0.322)	0.875 (0.345)	0.560 (0.263)
Rural dweller (REF: Urban)	1.186 (0.188)	0.532*** (0.117)	1.279 (0.307)	1.142 (0.223)	0.808 (0.240)	1.766 (0.686)
English is native language?(Yes=1)	1.183 (0.297)	1.329 (0.525)	1.111 (0.468)	1.830* (0.636)	1.306 (0.631)	1.143 (0.797)
Moved into Unemployment w1->w2				0.544 (0.225)	1.975 (0.864)	0.973 (0.853)
Constant	0.197** (0.125)	1.983 (2.523)	0.864 (1.014)	0.288 (0.242)	0.610 (0.880)	3.729 (7.489)
N	1354	1354	847	888	888	309
F-test	0.000	0.000	0.004	0.002	0.002	0.003
AIC	1192	693	1052	826	416	517
ll	-570.162	-320.379	-501.074	-385.890	-180.890	-233.359

Note: UC: Unmarried-cohabitant, M: Married, S: Solo, UM:Unmarried-cohabitant/Married
 * p<0.10, ** p<0.05, *** p<0.01

Impacts of Family Type Transitions: Parental stress and depression scores

These models can be found in section 3 on Parents' Health and Parenting.

Child's physical abilities at 3 years: NRF effects

Child physical ability and NRF-mother relationship quality

	1	2
main		
1.inc_quintiles _{w2}	2.479 (3.214)	0.942 (0.603)
2.inc_quintiles _{w2}	1.446 (1.831)	0.598 (0.387)
3.inc_quintiles _{w2}	1.324 (1.669)	0.799 (0.520)
4.inc_quintiles _{w2}	0.997 (1.361)	0.643 (0.450)
5b.inc_quintiles _{w2}	1.000 (.)	1.000 (.)
1.education_w2	1.553 (1.612)	1.492 (0.755)
2b.education_w2	1.000 (.)	1.000 (.)
[Education]Non-Degree	2.474** (1.033)	1.026 (0.217)
[Education]Degree	1.976 (1.406)	0.945 (0.333)
[Education]Postgrad	1.611 (2.011)	1.394 (0.734)
0b.rship_better	1.000 (.)	1.000 (.)
2.rship_better	2.079* (0.835)	1.565** (0.309)
PCG Age (w2)	1.035 (0.040)	0.987 (0.018)
PCG 'doesn't get enough help'	0.552 (0.292)	0.901 (0.246)
Crisis Pregnancy	1.350 (0.567)	1.014 (0.202)
Num of children in hhd (w2)	1.063 (0.192)	0.974 (0.106)
Drank alcohol while pregnant	1.375 (0.670)	0.914 (0.223)
Smoked while pregnant	1.327 (0.489)	1.173 (0.231)
Had Complications in Pregnancy	1.055 (0.399)	0.698* (0.135)
Disability/Chronic Illness	0.353** (0.169)	1.605* (0.453)
PCG Health is Poor/Fair	2.548 (1.511)	0.841 (0.268)
PCG has family history of poverty	0.657 (0.248)	1.061 (0.242)
Rural dweller (REF: Urban)	0.635 (0.218)	1.216 (0.232)
English is native language?(Yes=1)	1.035 (0.615)	0.851 (0.256)
Constant	2.133 (4.735)	1.797 (1.717)
N	750	752
F-test	0.089	0.561
AIC	500	1394

* p<0.10, ** p<0.05, *** p<0.01

Parental stress & frequency of NRF contact

Mother stress and change in NRF contact frequency

	1
1.inc_quintilesw2	-0.958 (1.379)
2.inc_quintilesw2	-0.443 (1.377)
3.inc_quintilesw2	0.021 (1.354)
4.inc_quintilesw2	-0.429 (1.444)
5b.inc_quintilesw2	0.000 (.)
1.education_w2	2.126 (1.341)
2b.education_w2	0.000 (.)
[Education]Non-Degree	-0.322 (0.423)
[Education]Degree	0.098 (0.781)
[Education]Postgrad	-0.234 (0.864)
1.contact_w1	-1.868*** (0.506)
2.contact_w1	-0.680 (0.524)
3.contact_w1	-1.253* (0.663)
4b.contact_w1	0.000 (.)
PCG Age (w2)	0.028 (0.041)
PCG 'doesn't get enough help'	3.444*** (0.543)
Crisis Pregnancy	1.679*** (0.407)
Num of children in hhd (w2)	-0.737*** (0.224)
Drank alcohol while pregnant	0.182 (0.526)
Smoked while pregnant	0.527 (0.412)
Had Complications in Pregnancy	0.222 (0.402)
Disability/Chronic Illness	-0.152 (0.529)
PCG Health is Poor/Fair	-0.221 (0.574)
PCG has family history of poverty	0.192 (0.471)
Rural dweller (REF: Urban)	0.096 (0.410)
English is native language?(Yes=1)	-0.796 (0.643)
Constant	14.467*** (2.208)
N	758
F-test	0.000
AIC	4397

Note: 1. contact = Daily; Ref cat is 'no contact'
 * p<0.10, ** p<0.05, *** p<0.01

Transition into work, unemployment or improved education: Non-resident father effects

Transition into unemployment over time

	sw1a	sw1b	sw1c
Moved into Unemployment w1->w2			
1b.inc_quintilesw1	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintilesw1	1.388 (0.766)	0.497 (0.341)	0.704 (0.474)
3.inc_quintilesw1	0.801 (0.582)	0.628 (0.556)	0.661 (0.623)
4.inc_quintilesw1	0.269 (0.258)	0.134 (0.219)	0.261 (0.359)
5o.inc_quintilesw1	1.000 (.)	1.000 (.)	1.000 (.)
1.education_w1	4.525 (6.364)	4.368 (7.285)	4.611 (7.041)
2b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w1	4.191** (2.492)	3.020 (2.167)	2.646* (1.564)
4.education_w1	5.076* (4.992)	7.821 (10.528)	5.326 (6.613)
5.education_w1	2.886 (3.565)	2.962 (4.054)	3.072 (3.671)
PCG Age at w1	1.002 (0.051)	1.023 (0.064)	1.010 (0.061)
Disability/Chronic Illness	0.473 (0.320)	0.378 (0.305)	0.379 (0.372)
PCG Health is Poor/Fair	0.900 (0.653)	0.727 (0.618)	0.483 (0.503)
Rural dweller (REF: Urban)	1.717 (0.822)	3.832** (2.295)	2.605 (1.609)
English is native language?(Yes=1)	2.509 (2.111)	6.360 (9.371)	3.659 (4.245)
Improved education level w1->w2	0.183** (0.156)	0.390 (0.361)	0.273 (0.251)
Num children in hhd increased w1->w2	0.417** (0.184)	0.279* (0.190)	0.383 (0.228)
Financial Contrib: Reduced over time	0.754 (0.591)		
Father-child contact increased w1->w2		0.053*** (0.055)	
Rship_qualityNC			1.000 (.)
Rship_quality_worse			0.725 (0.454)
Rship_quality_Better			0.355 (0.398)
Constant	0.008*** (0.012)	0.001*** (0.002)	0.004*** (0.008)
N	363	271	282
F-test	0.118	0.169	0.258
AIC	263	188	207
ll	-115.669	-78.100	-86.462

* p<0.10, ** p<0.05, *** p<0.01

A2. Childcare

Difficulties experienced due to childcare arrangements

Characteristics of experiencing types of difficulty due to childcare arrangements (w1): odds ratios

	JobHunt	LeaveJob	Study	LessHours
main				
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	1.078 (0.150)	1.078 (0.164)	1.180 (0.152)	1.202** (0.104)
Solo	1.726*** (0.264)	1.662*** (0.285)	1.886*** (0.310)	1.508*** (0.191)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	0.682*** (0.089)	0.989 (0.152)	0.713** (0.101)	0.978 (0.104)
3.inc_quintiles_w1	0.640*** (0.094)	0.991 (0.169)	0.791 (0.118)	0.972 (0.110)
4.inc_quintiles_w1	0.384*** (0.072)	0.617** (0.124)	0.985 (0.153)	0.883 (0.102)
5.inc_quintiles_w1	0.386*** (0.093)	0.548*** (0.127)	0.731 (0.143)	0.827 (0.106)
1.education_w1	0.530** (0.157)	0.690 (0.228)	0.545* (0.182)	0.507** (0.142)
2b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w1	1.037 (0.125)	1.142 (0.157)	1.208 (0.144)	1.213** (0.100)
4.education_w1	0.953 (0.165)	0.886 (0.151)	1.027 (0.156)	1.174 (0.115)
5.education_w1	0.823 (0.179)	0.792 (0.163)	1.508** (0.248)	1.157 (0.129)
PGC was employed at w1	0.295*** (0.038)	0.350*** (0.044)	0.852 (0.090)	1.852*** (0.142)
In regular contact w Grandparents, w1?	0.891 (0.165)	0.901 (0.187)	0.598** (0.127)	1.113 (0.179)
PCG Age at w1	0.992 (0.011)	0.994 (0.011)	0.976** (0.011)	1.005 (0.008)
PCG 'doesn't get enough help'	1.789*** (0.243)	1.465*** (0.216)	2.005*** (0.251)	1.577*** (0.147)
Crisis Pregnancy	1.286* (0.180)	1.211 (0.200)	1.826*** (0.243)	1.669*** (0.182)
Num children in hsd at w1	1.025 (0.048)	0.943 (0.056)	1.267*** (0.055)	0.998 (0.034)
Drank alcohol while pregnant	1.114 (0.142)	0.954 (0.132)	0.971 (0.112)	1.024 (0.077)
Smoked while pregnant	1.068 (0.133)	0.798 (0.116)	0.950 (0.120)	1.028 (0.094)
Had Complications in Pregnancy	1.024 (0.104)	1.411*** (0.157)	1.349*** (0.130)	1.221*** (0.077)
Disability/Chronic Illness	1.122 (0.165)	1.001 (0.173)	1.252 (0.185)	1.028 (0.104)
PCG Health is Poor/Fair	1.055 (0.183)	1.275 (0.248)	1.140 (0.198)	1.111 (0.146)
PCG has family history of poverty	1.199 (0.140)	1.230 (0.158)	1.314** (0.143)	1.404*** (0.106)
Rural dweller (REF: Urban)	0.773** (0.080)	0.801** (0.090)	0.835* (0.081)	0.751*** (0.048)
English is native language?(Yes=1)	0.686** (0.112)	0.556*** (0.091)	0.920 (0.164)	0.911 (0.103)
Constant	0.469* (0.183)	0.323*** (0.136)	0.225*** (0.093)	0.160*** (0.046)
N	9068	9068	9068	9068
F-test	0.000	0.000	0.000	0.000
AIC	4532	4222	4813	9216

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

Subjective indicators of childcare quality

Subjective childcare quality indicators

	b1	b2
main		
Married	1.000 (.)	1.000 (.)
Unmarried-cohab	1.417** (0.211)	1.310 (0.222)
Solo	1.282 (0.227)	1.511** (0.307)
1b.inc_quintiles2	1.000 (.)	1.000 (.)
2.inc_quintiles2	1.071 (0.239)	1.197 (0.292)
3.inc_quintiles2	1.035 (0.219)	1.055 (0.256)
4.inc_quintiles2	1.156 (0.238)	1.226 (0.290)
5.inc_quintiles2	1.033 (0.203)	1.373 (0.311)
cut1		
Constant	5.935*** (1.090)	9.175*** (1.940)
cut2		
Constant	110.539*** (28.733)	317.390*** (105.858)
cut3		
Constant	236.968*** (80.403)	646.263*** (269.566)
cut4		
Constant	574.325*** (225.643)	926.860*** (454.750)
N	3981	3981
F-test	0.274	0.294
AIC	3887	3178
ll	-1933.475	-1579.007

* p<0.10, ** p<0.05, *** p<0.01

Impact of childcare on positive educational change

Logit models of 'positive educational change' over time: odds ratios

	pec1	pec2	pec3	pec4
Improved education level w1->w2				
Childcare: Prevented look for job	1.130 (0.163)			
Childcare: Forced leave/reject job		1.499*** (0.211)		
Childcare: Prevented study/training			1.375** (0.185)	
Childcare: Restricted hours work/study				1.344*** (0.124)
1b.marital2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.marital2	0.764** (0.096)	0.763** (0.096)	0.765** (0.096)	0.760** (0.095)
3.marital2	0.981 (0.139)	0.976 (0.139)	0.970 (0.138)	0.971 (0.137)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	1.105 (0.138)	1.104 (0.137)	1.107 (0.138)	1.097 (0.136)
3.inc_quintiles_w1	1.596*** (0.208)	1.604*** (0.207)	1.591*** (0.206)	1.573*** (0.203)
4.inc_quintiles_w1	1.976*** (0.267)	2.009*** (0.269)	1.967*** (0.263)	1.941*** (0.260)
5.inc_quintiles_w1	1.906*** (0.290)	1.941*** (0.292)	1.908*** (0.288)	1.884*** (0.284)
1.education_w1	2.757*** (0.552)	2.782*** (0.552)	2.799*** (0.558)	2.843*** (0.567)
2b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w1	0.301*** (0.028)	0.301*** (0.028)	0.300*** (0.028)	0.297*** (0.028)
4.education_w1	0.334*** (0.036)	0.336*** (0.036)	0.333*** (0.036)	0.329*** (0.035)
5o.education_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
UC_M	1.023 (0.192)	1.033 (0.193)	1.023 (0.191)	1.023 (0.193)
UC_S	0.825 (0.229)	0.837 (0.232)	0.835 (0.231)	0.836 (0.232)
S_UM	1.575* (0.399)	1.576* (0.401)	1.591* (0.402)	1.595* (0.402)
PCG Age at w1	0.997 (0.008)	0.997 (0.008)	0.998 (0.008)	0.997 (0.008)
PCG 'doesn't get enough help'	1.374*** (0.160)	1.366*** (0.158)	1.361*** (0.159)	1.378*** (0.160)
Crisis Pregnancy	1.307** (0.174)	1.306** (0.173)	1.280* (0.171)	1.276* (0.169)
Num of children in hhd (w2)	0.937* (0.036)	0.939 (0.036)	0.934* (0.036)	0.940 (0.037)
Drank alcohol while pregnant	1.143 (0.112)	1.147 (0.112)	1.143 (0.112)	1.142 (0.112)
Smoked while pregnant	0.793** (0.085)	0.801** (0.086)	0.793** (0.086)	0.790** (0.085)
Had Complications in Pregnancy	0.980 (0.078)	0.973 (0.077)	0.973 (0.078)	0.973 (0.078)
Disability/Chronic Illness	1.003 (0.122)	1.002 (0.122)	1.001 (0.122)	0.997 (0.121)
PCG Health is Poor/Fair	0.784 (0.128)	0.775 (0.128)	0.780 (0.128)	0.783 (0.128)
PCG has family history of poverty	0.983 (0.093)	0.978 (0.093)	0.981 (0.093)	0.967 (0.092)
Rural dweller (REF: Urban)	0.925 (0.073)	0.929 (0.073)	0.927 (0.073)	0.934 (0.074)
English is native language?(Yes=1)	0.601*** (0.066)	0.611*** (0.068)	0.603*** (0.067)	0.599*** (0.066)
Constant	0.526** (0.156)	0.498** (0.146)	0.514** (0.151)	0.511** (0.150)
N	7376	7376	7376	7376
F-test	0.000	0.000	0.000	0.000
AIC	6899	6887	6892	6885
R2				

* p<0.10, ** p<0.05, *** p<0.01

Transition into unemployment by W2 (from being 'employed' at W1) & Childcare

Transition into unemployment from employment w1->w2

	1	2	3	4
Moved into Unemployment w1->w2				
1b.marital1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.marital1	2.287*** (0.566)	2.279*** (0.564)	2.286*** (0.565)	2.295*** (0.569)
3.marital1	1.569 (0.578)	1.559 (0.572)	1.567 (0.578)	1.586 (0.591)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	1.151 (0.331)	1.158 (0.333)	1.153 (0.331)	1.161 (0.335)
3.inc_quintiles_w1	0.730 (0.217)	0.736 (0.216)	0.732 (0.214)	0.734 (0.215)
4.inc_quintiles_w1	0.560** (0.165)	0.565* (0.166)	0.562** (0.164)	0.563** (0.165)
5.inc_quintiles_w1	0.400*** (0.131)	0.404*** (0.132)	0.402*** (0.131)	0.402*** (0.130)
1b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.education_w1	0.412 (0.298)	0.416 (0.304)	0.412 (0.298)	0.420 (0.302)
3.education_w1	0.620 (0.448)	0.623 (0.456)	0.620 (0.449)	0.634 (0.457)
4.education_w1	0.425 (0.316)	0.430 (0.322)	0.426 (0.316)	0.435 (0.321)
5.education_w1	0.670 (0.495)	0.678 (0.507)	0.671 (0.496)	0.686 (0.505)
o.PGC was employed at w1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
UC_M	0.729 (0.280)	0.732 (0.282)	0.730 (0.281)	0.727 (0.279)
UC_S	1.821 (0.788)	1.804 (0.787)	1.818 (0.788)	1.811 (0.779)
S_UM	1.306 (0.845)	1.302 (0.844)	1.308 (0.847)	1.284 (0.828)
PCG Age at w1	0.990 (0.023)	0.990 (0.023)	0.990 (0.023)	0.989 (0.023)
PCG 'doesn't get enough help'	1.181 (0.310)	1.171 (0.309)	1.179 (0.305)	1.185 (0.311)
Crisis Pregnancy	0.850 (0.278)	0.851 (0.277)	0.848 (0.280)	0.853 (0.278)
Num children in hsd at w1	0.856 (0.103)	0.855 (0.103)	0.855 (0.103)	0.858 (0.103)
Drank alcohol while pregnant	0.875 (0.204)	0.873 (0.204)	0.874 (0.204)	0.875 (0.204)
Smoked while pregnant	1.265 (0.297)	1.274 (0.300)	1.265 (0.297)	1.260 (0.298)
Had Complications in Pregnancy	0.909 (0.161)	0.906 (0.160)	0.909 (0.161)	0.914 (0.162)
Disability/Chronic Illness	0.875 (0.238)	0.877 (0.238)	0.875 (0.238)	0.874 (0.238)
PCG Health is Poor/Fair	1.308 (0.445)	1.309 (0.443)	1.309 (0.444)	1.312 (0.445)
PCG has family history of poverty	1.109 (0.249)	1.098 (0.249)	1.107 (0.246)	1.116 (0.247)
Rural dweller (REF: Urban)	0.907 (0.170)	0.907 (0.170)	0.907 (0.170)	0.902 (0.169)
English is native language?(Yes=1)	1.275 (0.318)	1.282 (0.320)	1.276 (0.318)	1.272 (0.318)
childcare: Prevented look for job	0.948 (0.421)			
Childcare: Forced leave/reject job		1.217 (0.486)		
Childcare: Prevented study/training			1.004 (0.350)	
Childcare: Restricted hours work/study				0.888 (0.184)
Constant	0.128* (0.137)	0.123* (0.134)	0.127* (0.136)	0.130* (0.139)
N	5188	5188	5188	5188
F-test	0.000	0.000	0.000	0.000
AIC	1588	1588	1588	1588
ll	-767.0	-766.9	-767.0	-766.8

* p<0.10, ** p<0.05, *** p<0.01

Transition into unemployment w1->w2, childcare interactions

	1	2
Moved into Unemployment w1->w2		
1b.marital1	1.000 (.)	1.000 (.)
2.marital1	2.238*** (0.561)	2.759*** (0.719)
3.marital1	1.802 (0.679)	2.385** (0.949)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	1.155 (0.333)	1.185 (0.346)
3.inc_quintiles_w1	0.734 (0.215)	0.757 (0.224)
4.inc_quintiles_w1	0.563* (0.165)	0.576* (0.171)
5.inc_quintiles_w1	0.407*** (0.132)	0.416*** (0.136)
1b.education_w1	1.000 (.)	1.000 (.)
2.education_w1	0.453 (0.336)	0.489 (0.348)
3.education_w1	0.682 (0.505)	0.737 (0.527)
4.education_w1	0.462 (0.350)	0.498 (0.365)
5.education_w1	0.725 (0.546)	0.811 (0.591)
o.PGC was employed at w1	1.000 (.)	1.000 (.)
UC_M	0.727 (0.281)	0.716 (0.273)
UC_S	1.814 (0.795)	1.795 (0.759)
S_UM	1.194 (0.773)	1.088 (0.703)
PCG Age at w1	0.992 (0.023)	0.988 (0.023)
PCG 'doesn't get enough help'	1.192 (0.307)	1.154 (0.306)
Crisis Pregnancy	0.886 (0.288)	0.887 (0.287)
Num children in hsd at w1	0.851 (0.102)	0.856 (0.103)
Drank alcohol while pregnant	0.865 (0.204)	0.867 (0.205)
Smoked while pregnant	1.275 (0.298)	1.220 (0.292)
Had Complications in Pregnancy	0.907 (0.161)	0.914 (0.162)
Disability/Chronic Illness	0.853 (0.236)	0.858 (0.238)
PCG Health is Poor/Fair	1.308 (0.444)	1.319 (0.454)
PCG has family history of poverty	1.087 (0.244)	1.104 (0.244)
Rural dweller (REF: Urban)	0.915 (0.172)	0.925 (0.173)
English is native language?(Yes=1)	1.258 (0.314)	1.265 (0.318)
0b.Childcare: Prevented study/training	1.000 (.)	
1.Childcare: Prevented study/training	1.215 (0.481)	
1b.marital1#0b.ccw1_prevstudy	1.000 (.)	
1b.marital1#1o.ccw1_prevstudy	1.000 (.)	
2o.marital1#0b.ccw1_prevstudy	1.000 (.)	
2.marital1#1.ccw1_prevstudy	1.303 (1.007)	
3o.marital1#0b.ccw1_prevstudy	1.000 (.)	
3.marital1#1.ccw1_prevstudy	0.109* (0.125)	
0b.Childcare: Restricted hours work/st		1.000 (.)
1.Childcare: Restricted hours work/stu		1.379 (0.336)
1b.marital1#0b.ccw1_lesshrs		1.000 (.)
1b.marital1#1o.ccw1_lesshrs		1.000 (.)
2o.marital1#0b.ccw1_lesshrs		1.000 (.)
2.marital1#1.ccw1_lesshrs		0.477 (0.231)
3o.marital1#0b.ccw1_lesshrs		1.000 (.)
3.marital1#1.ccw1_lesshrs		0.198** (0.137)
Constant	0.107** (0.117)	0.100** (0.107)
N	5188	5188
F-test	0.000	0.000
AIC	1587	1581
ll	-764.4	-761.6

* p<0.10, ** p<0.05, *** p<0.01

A3. Parents' health and parenting style

Change in Depression scores (multinomial logit)

Change in Depression score W1 -> W2 (odds ratios)

	Lower Depression Score	Higher Depression Score
REFERENCE: NO CHANGE IN SCORE		
1b.Married	1 (.)	1 (.)
2.Unmarried-cohabitant	1.239* (0.14)	1.438*** (0.168)
3.Solo	1.344* (0.207)	1.571*** (0.246)
1.inc_quintilesw2	1.027 (0.133)	1.191 (0.155)
2.inc_quintilesw2	1.07 (0.127)	1.320** (0.154)
3.inc_quintilesw2	1.205* (0.123)	1.016 (0.107)
4.inc_quintilesw2	0.947 (0.091)	0.953 (0.093)
5b.inc_quintilesw2	1 (.)	1 (.)
1.education_w2	1.021 (0.353)	0.639 (0.228)
2b.education_w2	1 (.)	1 (.)
3.education_w2	0.98 (0.091)	0.998 (0.094)
4.education_w2	1.003 (0.107)	1.071 (0.115)
5.education_w2	1.08 (0.127)	1.165 (0.137)
0b.stress_no change	1 (.)	1 (.)
1.stress_higher	1.568*** (0.189)	1.164 (0.14)
2.stress_lower	1.009 (0.134)	1.446*** (0.187)
Pianta: Positive aspects scale	1.005 (0.019)	1.014 (0.019)
Pianta: Conflict scale	1.019** (0.008)	1.025*** (0.008)
UC_M	1.179 (0.207)	1.419** (0.25)
UC_S	1.296	1.731*

	(0.395)	(0.498)
S_UM	1.153	1.36
	(0.31)	(0.387)
PCG Age (W2)	0.995	1.005
	(0.008)	(0.008)
PCG 'doesn't get enough help'	1.424***	1.955***
	(0.166)	(0.218)
Greater Difficulty making ends meet = 1	0.98	1.265***
	(0.066)	(0.085)
Grandparent babysits regularly=1	0.952	0.935
	(0.072)	(0.073)
Parenting: Warmth index	1.04	0.941
	(0.102)	(0.092)
Parenting: Hostility index	1.509***	1.492***
	(0.126)	(0.129)
Parenting: Consistency index	1.019	0.961
	(0.052)	(0.048)
Crisis Pregnancy	1.714***	1.096
	(0.246)	(0.169)
Num of children in hhd (W2)	0.851***	0.928**
	(0.032)	(0.035)
Drank alcohol while pregnant	0.968	1.111
	(0.079)	(0.09)
Smoked while pregnant	1.091	1.006
	(0.111)	(0.105)
Had Complications in Pregnancy	1.056	1.062
	(0.073)	(0.074)
Disability/Chronic Illness	1.329**	1.475***
	(0.157)	(0.174)
PCG Health is Poor/Fair	1.633***	1.147
	(0.269)	(0.203)
PCG has family history of poverty	1.350***	1.244**
	(0.119)	(0.11)
Rural dweller (REF: Urban)	1.013	1.021
	(0.07)	(0.071)
English is native language?(Yes=1)	1.111	1.047
	(0.138)	(0.13)
Constant	0.176*	0.148**
	(0.157)	(0.126)
<hr/>		
N		7913
F-test		0.000
AIC		17165
log likelihood		-8512
<hr/>		

***p<.01, **p<.05, *p<.10

Change in stress scores W1->W2 (multinomial logit)**Change in Stress score W1 -> W2
(odds ratios)**

REFERENCE: NO CHANGE IN SCORE	Lower Stress Score	Higher Stress Score
1b.Married	1 (.)	1 (.)
2.Unmarried-cohabitant	1.275 (0.22)	1.192 (0.223)
3.Solo	1.604** (0.383)	1.720** (0.435)
1.inc_quintilesw2	1.082 (0.203)	1.143 (0.231)
2.inc_quintilesw2	1.071 (0.183)	1.23 (0.226)
3.inc_quintilesw2	1.15 (0.181)	1.229 (0.209)
4.inc_quintilesw2	1.223 (0.18)	1.321* (0.21)
5b.inc_quintilesw2	1 (.)	1 (.)
1.education_w2	1.525 (0.778)	1.01 (0.6)
2b.education_w2	1 (.)	1 (.)
3.education_w2	1.101 (0.154)	1.054 (0.159)
4.education_w2	1.127 (0.185)	1.265 (0.223)
5.education_w2	1.279 (0.227)	1.410* (0.269)
0b.depress_no change	1 (.)	1 (.)
1.depress_higher	1.576*** (0.19)	1.01 (0.134)
2.depress_lower	1.167 (0.14)	1.442*** (0.187)
Pianta: Positive aspects scale	1.048* (0.028)	1.011 (0.027)
Pianta: Conflict scale	0.986 (0.011)	1.038*** (0.012)
UC_M	0.991 (0.257)	1.257 (0.347)
UC_S	1.008 (0.44)	0.774 (0.35)
S_UM	1.013 (0.373)	0.937 (0.371)

PCG Age (W2)	0.999 (0.012)	1.005 (0.014)
PCG 'doesn't get enough help'	0.95 (0.154)	1.17 (0.199)
Greater Difficulty making ends meet = 1	0.817** (0.081)	0.952 (0.102)
Grandparent babysits regularly=1	0.835 (0.092)	0.918 (0.11)
Parenting: Warmth index	1.09 (0.16)	1.254 (0.198)
Parenting: Hostility index	0.861 (0.108)	1.116 (0.148)
Parenting: Consistency index	1.027 (0.076)	1.008 (0.081)
Crisis Pregnancy	1.36 (0.308)	1.367 (0.325)
Num of children in hhd (W2)	1.236*** (0.075)	0.852** (0.06)
Drank alcohol while pregnant	1.244* (0.155)	1.102 (0.148)
Smoked while pregnant	0.829 (0.12)	0.927 (0.144)
Had Complications in Pregnancy	0.775** (0.079)	0.927 (0.101)
Disability/Chronic Illness	1.003 (0.161)	1.132 (0.193)
PCG Health is Poor/Fair	1.14 (0.261)	0.924 (0.226)
PCG has family history of poverty	0.955 (0.123)	0.792* (0.112)
Rural dweller (REF: Urban)	0.99 (0.101)	0.893 (0.099)
English is native language?(Yes=1)	0.816 (0.147)	0.807 (0.158)
Constant	1.17 (1.463)	0.311 (0.406)
N		7913
F-test		0.000
AIC		12960
log likelihood		-6409

***p<.01, **p<.05, *p<.10

Stress and Depression scores of PCG at wave 2

Stress & Depression scores at wave 2

	Stress	Depress
Married	0.000 (.)	0.000 (.)
Unmarried-cohab	0.041 (0.162)	0.365** (0.145)
Solo	0.835*** (0.205)	0.429** (0.197)
1.inc_quintilesw2	0.151 (0.180)	0.589*** (0.154)
2.inc_quintilesw2	0.286* (0.162)	0.691*** (0.136)
3.inc_quintilesw2	-0.014 (0.143)	0.231** (0.112)
4.inc_quintilesw2	0.111 (0.136)	0.143 (0.103)
5b.inc_quintilesw2	0.000 (.)	0.000 (.)
1.education_w2	0.131 (0.546)	-1.071*** (0.374)
2b.education_w2	0.000 (.)	0.000 (.)
3.education_w2	0.020 (0.130)	-0.102 (0.114)
4.education_w2	0.302** (0.148)	-0.088 (0.122)
5.education_w2	0.349** (0.158)	0.003 (0.130)
Stress score at w1	0.318*** (0.013)	
UC_M	0.491* (0.257)	0.351 (0.217)
UC_S	-0.045 (0.377)	0.678 (0.466)
S_UM	0.317 (0.354)	-0.297 (0.330)
PCG Age (w2)	0.014 (0.012)	-0.004 (0.009)
PCG 'doesn't get enough help'	1.393*** (0.152)	1.110*** (0.148)
Crisis Pregnancy	0.852*** (0.192)	0.494** (0.216)
Num of children in hhd (w2)	-0.632*** (0.051)	-0.001 (0.045)
Drank alcohol while pregnant	0.237** (0.118)	0.323*** (0.102)
Smoked while pregnant	0.126 (0.143)	0.394*** (0.142)
Had Complications in Pregnancy	0.438*** (0.098)	0.077 (0.084)
Disability/Chronic Illness	0.545*** (0.153)	0.951*** (0.170)
PCG Health is Poor/Fair	0.370* (0.202)	0.691*** (0.251)
PCG has family history of poverty	0.031 (0.126)	0.215* (0.120)
Rural dweller (REF: Urban)	-0.177* (0.099)	-0.124 (0.088)
English is native language?(Yes=1)	-0.861*** (0.155)	-0.076 (0.141)
Depression score at w1		0.380*** (0.021)
Constant	8.154*** (0.495)	0.955** (0.379)
N	8735	8793
F-test	0.000	0.000
AIC	47816	44930

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad
 * p<0.10, ** p<0.05, *** p<0.01

Stress at wave 2 and childcare difficulties at wave 1

Stress at wave 2 and childcare difficulties at wave 1

	st2a	st2b	st2c	st2d	st2e
Married	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Unmarried-cohab	0.041 (0.162)	0.040 (0.162)	0.041 (0.162)	0.034 (0.162)	0.040 (0.162)
Solo	0.835*** (0.205)	0.820*** (0.206)	0.829*** (0.206)	0.821*** (0.205)	0.823*** (0.206)
1.inc_quintilesw2	0.151 (0.180)	0.147 (0.180)	0.142 (0.180)	0.153 (0.180)	0.136 (0.181)
2.inc_quintilesw2	0.286* (0.162)	0.285* (0.162)	0.281* (0.162)	0.286* (0.162)	0.276* (0.162)
3.inc_quintilesw2	-0.014 (0.143)	-0.016 (0.143)	-0.020 (0.143)	-0.015 (0.143)	-0.022 (0.143)
4.inc_quintilesw2	0.111 (0.136)	0.110 (0.135)	0.112 (0.135)	0.107 (0.135)	0.108 (0.136)
5b.inc_quintilesw2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
1.education_w2	0.131 (0.546)	0.152 (0.546)	0.140 (0.546)	0.151 (0.545)	0.143 (0.545)
2b.education_w2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
3.education_w2	0.020 (0.130)	0.018 (0.130)	0.015 (0.130)	0.007 (0.130)	0.021 (0.130)
4.education_w2	0.302** (0.148)	0.298** (0.148)	0.302** (0.148)	0.292** (0.148)	0.303** (0.148)
5.education_w2	0.349** (0.158)	0.343** (0.158)	0.348** (0.158)	0.332** (0.158)	0.352** (0.158)
Stress score at w1	0.318*** (0.013)	0.316*** (0.013)	0.317*** (0.013)	0.315*** (0.013)	0.317*** (0.013)
UC_M	0.491* (0.257)	0.489* (0.256)	0.492* (0.256)	0.485* (0.255)	0.488* (0.256)
UC_S	-0.045 (0.377)	-0.039 (0.378)	-0.038 (0.378)	-0.038 (0.378)	-0.045 (0.379)
S_UM	0.317 (0.354)	0.315 (0.354)	0.311 (0.353)	0.327 (0.354)	0.303 (0.354)
PCG Age (w2)	0.014 (0.012)	0.014 (0.012)	0.014 (0.012)	0.013 (0.012)	0.014 (0.012)
PCG 'doesn't get enough help'	1.393*** (0.152)	1.382*** (0.152)	1.390*** (0.152)	1.390*** (0.152)	1.385*** (0.152)
Crisis Pregnancy	0.852*** (0.192)	0.836*** (0.192)	0.849*** (0.192)	0.836*** (0.192)	0.846*** (0.192)
Num of children in hhd (w2)	-0.632*** (0.051)	-0.635*** (0.051)	-0.631*** (0.051)	-0.629*** (0.051)	-0.633*** (0.051)
Drank alcohol while pregnant	0.237** (0.118)	0.237** (0.118)	0.238** (0.118)	0.234** (0.118)	0.236** (0.118)
Smoked while pregnant	0.126 (0.143)	0.126 (0.143)	0.128 (0.143)	0.124 (0.143)	0.125 (0.143)
Had Complications in Pregnancy	0.438*** (0.098)	0.434*** (0.098)	0.437*** (0.098)	0.433*** (0.098)	0.439*** (0.098)
Disability/Chronic Illness	0.545*** (0.153)	0.543*** (0.153)	0.546*** (0.153)	0.545*** (0.153)	0.542*** (0.153)
PCG Health is Poor/Fair	0.370* (0.202)	0.368* (0.202)	0.367* (0.202)	0.370* (0.202)	0.373* (0.202)
PCG has family history of poverty	0.031 (0.126)	0.028 (0.126)	0.029 (0.126)	0.020 (0.126)	0.029 (0.126)
Rural dweller (REF: Urban)	-0.177* (0.099)	-0.175* (0.099)	-0.174* (0.099)	-0.168* (0.099)	-0.174* (0.099)
English is native language?(Yes=1)	-0.861*** (0.155)	-0.859*** (0.155)	-0.853*** (0.155)	-0.862*** (0.155)	-0.855*** (0.155)
Childcare: Prevented study/training		0.266 (0.188)			
Childcare: Forced leave/reject job			0.177 (0.218)		
Childcare: Restricted hours work/study				0.238** (0.119)	
Childcare: Prevented look for job					0.221 (0.204)
Constant	8.154*** (0.495)	8.160*** (0.495)	8.145*** (0.494)	8.157*** (0.495)	8.155*** (0.494)
N	8735	8735	8735	8735	8735
F-test	0.000	0.000	0.000	0.000	0.000
AIC	47816	47815	47817	47812	47816

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

Pianta scales (col's 1 & 2) and parenting style indicators (3, 4,5)

Parent-child relationship and parenting styles

	Conflict	Positive	Consistent	Warmth	Hostility
Married	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Unmarried-cohab	0.098 (0.187)	0.039 (0.077)	-0.050* (0.030)	-0.010 (0.015)	-0.016 (0.017)
Solo	0.072 (0.249)	0.015 (0.110)	-0.027 (0.040)	0.004 (0.018)	-0.051** (0.024)
1.inc_quintilesw2	0.016 (0.215)	0.127 (0.099)	-0.092*** (0.033)	0.003 (0.016)	-0.038* (0.020)
2.inc_quintilesw2	0.000 (0.200)	0.132 (0.089)	-0.119*** (0.032)	-0.018 (0.016)	-0.044*** (0.018)
3.inc_quintilesw2	-0.307* (0.172)	-0.028 (0.081)	0.004 (0.026)	-0.005 (0.014)	-0.010 (0.016)
4.inc_quintilesw2	-0.275* (0.160)	0.087 (0.069)	-0.024 (0.024)	-0.015 (0.013)	0.017 (0.015)
5b.inc_quintilesw2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
1.education_w2	-0.890* (0.513)	-0.352 (0.280)	-0.261** (0.104)	0.060 (0.039)	-0.070 (0.056)
2b.education_w2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
3.education_w2	0.316** (0.154)	0.056 (0.074)	0.109*** (0.025)	0.001 (0.012)	0.038*** (0.014)
4.education_w2	0.565*** (0.175)	0.008 (0.082)	0.188*** (0.029)	-0.037** (0.014)	0.043*** (0.017)
5.education_w2	0.160 (0.192)	0.065 (0.088)	0.237*** (0.030)	-0.025 (0.016)	0.079*** (0.018)
Parenting: warmth index	-0.400** (0.169)	0.927*** (0.103)	-0.027 (0.026)		-0.219*** (0.015)
Parenting: Hostility index	3.095*** (0.147)	-0.074 (0.072)	-0.273*** (0.024)	-0.163*** (0.012)	
Parenting: Consistency index	-0.181** (0.088)	0.090** (0.040)		-0.007 (0.007)	-0.094*** (0.008)
SDQ Total difficulties score	0.446*** (0.016)	-0.091*** (0.009)	-0.028*** (0.003)	-0.002 (0.001)	0.023*** (0.002)
Depress_NoChange	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Depress_Decrease	0.237* (0.137)	0.034 (0.063)	0.013 (0.022)	0.004 (0.011)	0.056*** (0.013)
Depress_Increase	0.266* (0.136)	0.076 (0.062)	-0.007 (0.023)	-0.006 (0.011)	0.051*** (0.013)
Stress_NoChange	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Stress_Decrease	-0.171 (0.206)	0.152 (0.103)	0.006 (0.033)	0.009 (0.018)	-0.019 (0.020)
Stress_Increase	0.527** (0.224)	0.071 (0.108)	0.012 (0.036)	0.027 (0.019)	0.010 (0.021)
UC_M	-0.210 (0.252)	0.136 (0.112)	-0.000 (0.047)	0.020 (0.020)	0.031 (0.028)
UC_S	0.571 (0.575)	0.033 (0.235)	-0.006 (0.075)	0.010 (0.032)	-0.028 (0.038)
S_UM	-0.098 (0.465)	-0.016 (0.226)	0.001 (0.079)	0.000 (0.041)	-0.032 (0.038)
PCG Age (w2)	-0.002 (0.013)	-0.002 (0.005)	-0.005** (0.002)	0.000 (0.001)	-0.002* (0.001)
PCG 'doesn't get enough help'	0.681*** (0.180)	0.026 (0.086)	-0.026 (0.029)	-0.019 (0.014)	0.044*** (0.017)
Crisis Pregnancy	0.462* (0.244)	-0.007 (0.117)	0.029 (0.038)	0.006 (0.018)	0.016 (0.022)
Baby is Male (M=1)	-0.398*** (0.111)	-0.257*** (0.050)	0.032* (0.018)	0.011 (0.009)	0.015 (0.010)
Num of children in hhd (w2)	-0.098 (0.062)	-0.036 (0.032)	-0.055*** (0.011)	-0.031*** (0.005)	0.006 (0.006)
Grandparent babysits regularly=1	-0.142 (0.128)	0.053 (0.056)	-0.053** (0.020)	-0.000 (0.010)	0.003 (0.012)
Drank alcohol while pregnant	0.280** (0.135)	-0.045 (0.058)	0.012 (0.022)	-0.033*** (0.011)	0.024* (0.013)
Smoked while pregnant	0.035 (0.168)	-0.087 (0.077)	-0.092*** (0.029)	-0.007 (0.013)	-0.042*** (0.016)
Had Complications in Pregnancy	-0.029 (0.117)	-0.061 (0.055)	0.028 (0.018)	0.010 (0.009)	0.006 (0.011)
Disability/Chronic Illness	0.396** (0.187)	0.105 (0.076)	0.042 (0.030)	0.009 (0.014)	-0.000 (0.017)
PCG Health is Poor/Fair	0.436 (0.281)	-0.019 (0.117)	0.002 (0.044)	0.038** (0.019)	-0.022 (0.026)
PCG has family history of poverty	0.279* (0.153)	0.058 (0.060)	0.052** (0.024)	0.010 (0.012)	-0.012 (0.014)
Rural dweller (REF: Urban)	-0.155 (0.116)	0.020 (0.052)	0.024 (0.019)	-0.040*** (0.009)	0.001 (0.011)
English is native language?(Yes=1)	-0.669*** (0.226)	0.060 (0.089)	0.144*** (0.031)	-0.004 (0.017)	0.054*** (0.020)
Pianta: Positive aspects scale	-0.136*** (0.036)		0.012** (0.005)	0.032*** (0.003)	-0.003 (0.003)
Pianta: Conflict scale		-0.026*** (0.007)	-0.005** (0.002)	-0.003** (0.001)	0.027*** (0.001)
Constant	14.348*** (1.582)	30.203*** (0.626)	4.510*** (0.239)	4.158*** (0.138)	2.689*** (0.140)
N	7915	7915	7915	7915	7915
F-test	0.000	0.000	0.000	0.000	0.000
AIC	45077	32032	16111	5326	7626

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad
 * p<0.10, ** p<0.05, *** p<0.01

Parent-child activities: reading, alphabet, counting, physical games

Days per week spent on activities

	Reading	Alphabet	Counting	PhysGames
Married	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.058 (0.087)	0.068 (0.101)	0.018 (0.083)	-0.085 (0.079)
Solo	-0.175 (0.113)	0.201 (0.125)	0.078 (0.097)	-0.248** (0.108)
1b.inc_quintiles_w2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2.inc_quintiles_w2	0.025 (0.092)	-0.177* (0.102)	-0.147* (0.082)	-0.169* (0.087)
3.inc_quintiles_w2	0.152* (0.091)	-0.300*** (0.105)	-0.092 (0.084)	-0.120 (0.088)
4.inc_quintiles_w2	0.304*** (0.095)	-0.319*** (0.111)	-0.257*** (0.090)	-0.195** (0.094)
5.inc_quintiles_w2	0.481*** (0.096)	-0.300** (0.118)	-0.224** (0.097)	-0.348*** (0.102)
1b.education_w2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2.education_w2	0.795*** (0.297)	-0.280 (0.300)	0.323 (0.261)	0.074 (0.236)
3.education_w2	1.057*** (0.297)	-0.428 (0.301)	0.218 (0.262)	0.044 (0.237)
4.education_w2	1.406*** (0.298)	-0.464 (0.305)	0.357 (0.264)	0.153 (0.241)
5.education_w2	1.640*** (0.299)	-0.635** (0.309)	0.448* (0.267)	0.173 (0.244)
UC_M	-0.136 (0.125)	0.257* (0.153)	0.284** (0.119)	0.068 (0.135)
UC_S	-0.088 (0.208)	-0.181 (0.248)	-0.017 (0.190)	0.199 (0.214)
S_UM	-0.471** (0.217)	0.045 (0.256)	0.161 (0.192)	-0.116 (0.195)
PCG Age (w2)	0.026*** (0.006)	-0.006 (0.007)	0.001 (0.006)	-0.004 (0.006)
PCG is in work at w2 (Y=1)	-0.205*** (0.056)	-0.137** (0.070)	-0.142** (0.057)	-0.116** (0.059)
PCG 'doesn't get enough help'	-0.015 (0.074)	-0.162* (0.092)	-0.079 (0.078)	-0.227*** (0.078)
Crisis Pregnancy	-0.078 (0.105)	0.059 (0.118)	-0.089 (0.095)	-0.011 (0.104)
Num of children in hhd (w2)	-0.254*** (0.028)	-0.187*** (0.032)	-0.154*** (0.027)	0.076*** (0.028)
Drank alcohol while pregnant	-0.135** (0.061)	-0.465*** (0.074)	-0.299*** (0.063)	-0.189*** (0.061)
Smoked while pregnant	-0.160** (0.078)	0.048 (0.090)	0.126* (0.071)	0.073 (0.075)
Had Complications in Pregnancy	0.053 (0.050)	0.051 (0.062)	0.073 (0.050)	0.036 (0.052)
Disability/Chronic Illness	0.036 (0.086)	0.140 (0.098)	-0.050 (0.081)	0.072 (0.081)
PCG Health is Poor/Fair	-0.070 (0.116)	0.050 (0.136)	0.060 (0.110)	-0.113 (0.111)
PCG has family history of poverty	-0.165** (0.069)	-0.038 (0.078)	-0.061 (0.064)	0.037 (0.064)
Rural dweller (REF: Urban)	-0.122** (0.051)	-0.239*** (0.062)	-0.140*** (0.050)	0.024 (0.052)
English is native language?(Yes=1)	0.678*** (0.084)	0.251*** (0.093)	0.366*** (0.077)	0.232*** (0.080)
Constant	3.534*** (0.376)	5.122*** (0.398)	5.183*** (0.344)	4.998*** (0.316)
N	8828	8827	8826	8827
F-test	0.000	0.000	0.000	0.000
AIC	36234	40176	36741	37138

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

TV habits

TV: minutes per day and presence in child's room

	Minutes	Odds-ratio
main		
Married	0.000	1.000
	(.)	(.)
Unmarried-cohab	0.365	1.328**
	(3.356)	(0.159)
Solo	-0.060	2.155***
	(4.198)	(0.280)
1b.inc_quintiles_w2	0.000	1.000
	(.)	(.)
2.inc_quintiles_w2	4.903	0.982
	(3.471)	(0.106)
3.inc_quintiles_w2	-1.013	0.794*
	(3.402)	(0.096)
4.inc_quintiles_w2	-6.474*	0.737**
	(3.410)	(0.103)
5.inc_quintiles_w2	-14.826***	0.582***
	(3.565)	(0.096)
1b.education_w2	0.000	1.000
	(.)	(.)
2.education_w2	-8.987	1.246
	(10.866)	(0.347)
3.education_w2	-19.124*	0.942
	(10.869)	(0.267)
4.education_w2	-27.861**	0.498**
	(10.962)	(0.148)
5.education_w2	-37.338***	0.292***
	(10.946)	(0.095)
UC_M	0.549	1.288
	(4.198)	(0.242)
UC_S	-2.788	0.742
	(7.467)	(0.174)
S_UM	9.746	1.754**
	(7.806)	(0.394)
PCG Age (w2)	-0.901***	0.966***
	(0.221)	(0.008)
PCG is in work at w2 (Y=1)	-5.411**	0.966
	(2.106)	(0.086)
PCG 'doesn't get enough help'	0.240	0.800*
	(2.667)	(0.104)
Crisis Pregnancy	0.370	0.947
	(3.810)	(0.123)
Num of children in hhd (w2)	0.217	1.118***
	(1.076)	(0.043)
Drank alcohol while pregnant	1.503	0.889
	(2.175)	(0.093)
Smoked while pregnant	9.489***	1.372***
	(3.019)	(0.133)
Had Complications in Pregnancy	-1.873	1.105
	(1.841)	(0.089)
Disability/Chronic Illness	0.343	0.936
	(2.954)	(0.113)
PCG Health is Poor/Fair	8.232*	1.412**
	(4.620)	(0.206)
PCG has family history of poverty	1.551	1.318***
	(2.352)	(0.120)
Rural dweller (REF: Urban)	-2.528	0.903
	(1.880)	(0.072)
English is native language?(Yes=1)	-16.476***	0.626***
	(3.215)	(0.065)
Constant	185.453***	0.879
	(13.686)	(0.366)
N	8824	8828
F-test	0.000	0.000
AIC	99681	6929

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

A4. Child health and wellbeing

Baby's current health

Baby's current health: v.healthy->Healthy->Sometimes ill->Always Unwell

	1	2
Married	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.130 (0.097)	-0.164 (0.101)
Solo	0.261** (0.118)	0.166 (0.123)
1b.inc_quintiles2	0.000 (.)	0.000 (.)
2.inc_quintiles2	0.181* (0.102)	0.181* (0.105)
3.inc_quintiles2	0.070 (0.104)	0.098 (0.107)
4.inc_quintiles2	0.123 (0.107)	0.152 (0.110)
5.inc_quintiles2	0.083 (0.114)	0.130 (0.116)
[Education]Primary	0.000 (.)	0.000 (.)
REF[Education]Secondary	0.044 (0.311)	-0.050 (0.324)
[Education]Non-Degree	0.010 (0.310)	-0.081 (0.324)
[Education]Degree	0.041 (0.315)	-0.073 (0.328)
[Education]Postgrad	0.102 (0.318)	-0.012 (0.331)
UC_M	-0.316** (0.155)	-0.352** (0.157)
UC_S	-0.194 (0.226)	-0.229 (0.232)
S_UM	0.237 (0.219)	0.223 (0.224)
PCG Age (w2)	-0.008 (0.007)	-0.009 (0.007)
Crisis Pregnancy	0.297*** (0.114)	0.195 (0.119)
Num of children in hhd (w2)	-0.116*** (0.034)	-0.098*** (0.035)
Drank alcohol while pregnant	0.128* (0.073)	0.094 (0.074)
Smoked while pregnant	0.027 (0.089)	0.012 (0.092)
Had Complications in Pregnancy	0.296*** (0.061)	0.297*** (0.062)
Disability/Chronic Illness	0.491*** (0.089)	0.388*** (0.093)
PCG Health is Poor/Fair	0.547*** (0.119)	0.463*** (0.121)
PCG has family history of poverty	0.180** (0.075)	0.114 (0.077)
Rural dweller (REF: Urban)	0.025 (0.062)	0.044 (0.063)
English is native language?(Yes=1)	-0.114 (0.089)	-0.085 (0.093)
Gestational age at birth (wks)		-0.060*** (0.014)
Pianta: Conflict scale		0.028*** (0.007)
Parenting: Hostility index		0.083 (0.072)
Stress score at w2		0.023*** (0.009)
Depression score at w2		0.032*** (0.010)

cut1		
Constant	1.104*** (0.385)	-0.389 (0.699)
cut2		
Constant	3.760*** (0.395)	2.307*** (0.702)
cut3		
Constant	5.657*** (0.468)	4.306*** (0.753)
cut4		
Constant	7.867*** (0.782)	
N	8832	8723
F-test	0.000	0.000
AIC	11299	10979

Note: order logistic model, coeff's are odds-ratios

* p<0.10, ** p<0.05, *** p<0.01

Decline in baby's health over time

Decline in baby's health from w1->2

	1	2
bhealth_decline		
Married	1.000 (.)	1.000 (.)
Unmarried-cohab	0.947 (0.103)	0.924 (0.104)
Solo	1.354** (0.175)	1.262* (0.167)
1b.inc_quintilesw2	1.000 (.)	1.000 (.)
2.inc_quintilesw2	1.115 (0.124)	1.114 (0.126)
3.inc_quintilesw2	1.058 (0.121)	1.069 (0.125)
4.inc_quintilesw2	1.027 (0.121)	1.048 (0.126)
5.inc_quintilesw2	1.002 (0.125)	1.028 (0.130)
[Education]Primary	1.000 (.)	1.000 (.)
REF[Education]Secondary	1.252 (0.415)	1.189 (0.400)
[Education]Non-Degree	1.148 (0.380)	1.091 (0.367)
[Education]Degree	1.254 (0.424)	1.186 (0.407)
[Education]Postgrad	1.231 (0.421)	1.166 (0.405)
UC_M	0.865 (0.146)	0.856 (0.149)
UC_S	0.853 (0.201)	0.791 (0.190)
S_UM	1.269 (0.284)	1.291 (0.297)
PCG Age (w2)	0.994 (0.007)	0.996 (0.008)
Crisis Pregnancy	1.287** (0.155)	1.171 (0.145)
Num of children in hhd (w2)	0.874*** (0.033)	0.892*** (0.035)
Drank alcohol while pregnant	1.089 (0.090)	1.061 (0.089)
Smoked while pregnant	1.049 (0.102)	1.033 (0.103)
Had Complications in Pregnancy	1.212*** (0.083)	1.194** (0.083)
Disability/Chronic Illness	1.370*** (0.136)	1.294** (0.133)
PCG Health is Poor/Fair	1.460*** (0.188)	1.353** (0.177)
PCG has family history of poverty	1.214** (0.101)	1.157* (0.098)
Rural dweller (REF: Urban)	1.033 (0.072)	1.043 (0.073)
English is native language?(Yes=1)	1.041 (0.108)	1.084 (0.116)
Gestational age at birth (wks)	0.966** (0.014)	0.967* (0.018)
Child's weight at birth (grams)		1.000 (0.000)
Stress score at w2		1.017* (0.010)
Depression score at w2		1.023** (0.010)
Pianta: Conflict scale		1.032*** (0.008)
Parenting: Hostility index		1.015 (0.081)
Constant	0.676 (0.486)	0.310 (0.240)
N	8810	8635
F-test	0.000	0.000
AIC	8175	7959

Note: coefficients are odds-ratios

* p<0.10, ** p<0.05, *** p<0.01

Injury requiring hospitalisation

Injury requiring hospitalisation

	1	2
injury		
Married	1.000 (.)	1.000 (.)
Unmarried-cohab	1.159 (0.134)	1.143 (0.134)
Solo	1.510*** (0.202)	1.514*** (0.206)
1b.inc_quintilesw2	1.000 (.)	1.000 (.)
2.inc_quintilesw2	0.872 (0.103)	0.850 (0.102)
3.inc_quintilesw2	1.084 (0.128)	1.066 (0.128)
4.inc_quintilesw2	0.989 (0.124)	0.977 (0.123)
5.inc_quintilesw2	0.887 (0.115)	0.863 (0.114)
[Education]Primary	1.000 (.)	1.000 (.)
REF[Education]Secondary	1.194 (0.394)	1.189 (0.403)
[Education]Non-Degree	1.538 (0.506)	1.525 (0.515)
[Education]Degree	1.189 (0.398)	1.170 (0.403)
[Education]Postgrad	1.417 (0.477)	1.366 (0.473)
UC_M	1.351* (0.229)	1.356* (0.232)
UC_S	1.084 (0.267)	1.080 (0.266)
S_UM	1.362 (0.353)	1.441 (0.375)
PCG Age (w2)	0.996 (0.008)	0.997 (0.008)
Crisis Pregnancy	1.311** (0.163)	1.255* (0.159)
Num of children in hhd (w2)	1.080** (0.040)	1.082** (0.041)
Drank alcohol while pregnant	1.024 (0.085)	1.008 (0.085)
Smoked while pregnant	0.882 (0.091)	0.907 (0.095)
Had Complications in Pregnancy	1.125 (0.080)	1.137* (0.082)
Disability/Chronic Illness	1.315*** (0.138)	1.326*** (0.142)
PCG Health is Poor/Fair	1.065 (0.153)	1.055 (0.154)
PCG has family history of poverty	1.019 (0.089)	1.008 (0.090)
Rural dweller (REF: Urban)	0.722*** (0.051)	0.727*** (0.052)
English is native language?(Yes=1)	1.270** (0.144)	1.311** (0.155)
Gestational age at birth (wks)	1.052** (0.021)	1.029 (0.024)
Stress score at w2		1.001 (0.010)
Depression score at w2		1.009 (0.010)
Pianta: Conflict scale		1.006 (0.008)
Parenting: Hostility index		1.159* (0.097)
Parenting: Consistency index		1.093* (0.057)
Parenting: Warmth index		1.081 (0.107)
Child's weight at birth (grams)		1.000** (0.000)
Constant	0.023*** (0.021)	0.011*** (0.012)
N	8795	8620
F-test	0.000	0.000
AIC	7730	7576

* p<0.10, ** p<0.05, *** p<0.01

Use of medical services

Use of medical services, freq of visits: Sociodemographic controls

	GP	Const	PHN	PN	AE	Psych	Socwk
Married	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.383*** (0.131)	-0.115 (0.074)	-0.033 (0.030)	-0.026 (0.023)	0.006 (0.036)	-0.011 (0.018)	0.024 (0.022)
Solo	0.217 (0.192)	-0.077 (0.084)	0.094 (0.073)	0.034 (0.037)	0.043 (0.037)	-0.004 (0.025)	0.066* (0.036)
1b.inc_quintiles2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2.inc_quintiles2	-0.343** (0.160)	0.205** (0.091)	0.015 (0.039)	0.024 (0.035)	-0.033 (0.030)	0.051** (0.023)	-0.019 (0.037)
3.inc_quintiles2	-0.426*** (0.153)	-0.015 (0.057)	-0.009 (0.048)	-0.047 (0.033)	-0.011 (0.028)	-0.001 (0.016)	-0.023 (0.029)
4.inc_quintiles2	-0.583*** (0.145)	-0.037 (0.061)	-0.071* (0.037)	-0.071** (0.032)	0.001 (0.031)	-0.002 (0.018)	-0.018 (0.027)
5.inc_quintiles2	-0.618*** (0.149)	0.015 (0.067)	-0.070* (0.037)	-0.086*** (0.029)	-0.007 (0.036)	0.004 (0.022)	-0.006 (0.031)
[Education]Primary	0.633 (0.590)	-0.327*** (0.106)	-0.138** (0.069)	-0.034 (0.049)	-0.057 (0.067)	-0.029 (0.030)	0.276 (0.252)
REF[Education]Secondary	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
[Education]Non-Degree	-0.313** (0.124)	-0.108 (0.067)	0.018 (0.030)	0.017 (0.027)	0.041* (0.024)	-0.008 (0.018)	-0.016 (0.020)
[Education]Degree	-0.311** (0.132)	-0.104 (0.066)	0.059 (0.045)	-0.004 (0.023)	0.006 (0.024)	-0.022 (0.017)	-0.015 (0.019)
[Education]Postgrad	-0.210 (0.138)	-0.019 (0.083)	0.017 (0.031)	-0.013 (0.022)	0.011 (0.026)	-0.017 (0.021)	-0.017 (0.018)
UC_M	-0.404** (0.169)	-0.003 (0.145)	0.012 (0.056)	0.014 (0.050)	-0.014 (0.038)	0.001 (0.043)	0.019 (0.026)
UC_S	0.273 (0.739)	0.020 (0.154)	-0.016 (0.110)	-0.026 (0.086)	0.128* (0.074)	-0.006 (0.030)	0.024 (0.084)
S_UM	0.277 (0.312)	0.146 (0.174)	0.018 (0.077)	-0.010 (0.042)	0.057 (0.077)	-0.046*** (0.017)	0.079 (0.079)
PCG Age (w2)	-0.036*** (0.012)	0.006 (0.006)	-0.006** (0.003)	-0.005* (0.002)	-0.005*** (0.002)	-0.001 (0.002)	-0.002 (0.002)
Crisis Pregnancy	0.397** (0.196)	0.178** (0.084)	0.013 (0.046)	-0.008 (0.031)	0.101** (0.044)	-0.011 (0.021)	0.109 (0.073)
Num of children in hhd (w2)	-0.342*** (0.053)	-0.077*** (0.028)	0.048*** (0.014)	0.000 (0.013)	0.003 (0.011)	0.007 (0.007)	0.013* (0.007)
Drank alcohol while pregnant	-0.050 (0.102)	-0.043 (0.049)	0.045 (0.036)	0.019 (0.033)	0.039 (0.024)	-0.002 (0.014)	-0.015 (0.014)
Smoked while pregnant	-0.177 (0.135)	0.102 (0.102)	-0.038 (0.029)	-0.039 (0.024)	-0.006 (0.027)	0.007 (0.024)	-0.042 (0.034)
Had Complications in Pregnancy	0.294*** (0.090)	0.056 (0.040)	0.072*** (0.026)	0.028 (0.020)	0.035** (0.018)	0.013 (0.012)	0.028 (0.019)
Disability/Chronic Illness	0.576*** (0.156)	0.117* (0.069)	0.097** (0.041)	0.047 (0.034)	0.115*** (0.035)	0.026 (0.025)	0.010 (0.021)
PCG Health is Poor/Fair	0.467** (0.236)	0.106 (0.090)	0.055 (0.075)	0.042 (0.063)	0.086* (0.051)	0.014 (0.027)	0.024 (0.038)
PCG has family history of poverty	0.208* (0.119)	0.017 (0.051)	-0.015 (0.027)	-0.048** (0.020)	0.048* (0.025)	0.008 (0.016)	0.019 (0.020)
Rural dweller (REF: Urban)	-0.210** (0.085)	0.003 (0.041)	-0.085*** (0.024)	0.022 (0.016)	-0.097*** (0.017)	0.007 (0.011)	-0.024 (0.015)
English is native language?(Yes=1)	0.295** (0.127)	0.062 (0.061)	-0.003 (0.049)	-0.016 (0.046)	0.036 (0.024)	0.014 (0.014)	-0.036 (0.038)
Constant	4.658*** (0.428)	0.417** (0.201)	0.609*** (0.140)	0.304** (0.119)	0.436*** (0.069)	0.023 (0.053)	0.142 (0.112)
N	8816	8820	8822	8822	8823	8824	8820
F-test	0.000	0.000	0.000	0.002	0.000	0.250	0.309
AIC	45564	36095	23547	16761	16622	13915	18439

* p<0.10, ** p<0.05, *** p<0.01

Use of medical services: Sociodemographic controls plus stress, medical card, infant birthweight & gestational age

	GP	Const	PHN	PN	AE	Psych	Socwk
Married	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.488*** (0.132)	-0.108 (0.071)	-0.023 (0.029)	-0.033 (0.024)	0.001 (0.038)	-0.004 (0.017)	0.021 (0.022)
Solo	-0.126 (0.201)	-0.124 (0.083)	0.088 (0.065)	0.009 (0.042)	0.031 (0.040)	-0.005 (0.023)	0.049 (0.038)
1b.inc_quintilesw2	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
2.inc_quintilesw2	-0.275* (0.164)	0.176** (0.084)	0.032 (0.034)	0.027 (0.035)	-0.036 (0.030)	0.045** (0.021)	-0.023 (0.038)
3.inc_quintilesw2	-0.155 (0.165)	0.035 (0.065)	0.018 (0.049)	-0.030 (0.030)	-0.001 (0.031)	0.004 (0.016)	-0.021 (0.030)
4.inc_quintilesw2	-0.182 (0.162)	0.027 (0.075)	-0.051 (0.036)	-0.047 (0.029)	0.013 (0.033)	0.001 (0.017)	-0.018 (0.029)
5.inc_quintilesw2	-0.166 (0.166)	0.078 (0.082)	-0.048 (0.036)	-0.058** (0.028)	0.006 (0.038)	0.008 (0.023)	-0.005 (0.032)
Full_MedicalCard	0.895*** (0.132)	0.086 (0.081)	-0.011 (0.038)	0.049** (0.024)	0.016 (0.026)	-0.009 (0.019)	-0.002 (0.020)
GP_Only_Card	0.412** (0.204)	-0.020 (0.094)	-0.025 (0.054)	-0.018 (0.032)	0.004 (0.035)	-0.007 (0.028)	-0.026* (0.015)
No_MedicalCard	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Child's weight at birth (grams)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000** (0.000)	-0.000 (0.000)	-0.000 (0.000)
Gestational age at birth (wks)	-0.073*** (0.027)	-0.055*** (0.015)	-0.023*** (0.007)	-0.014** (0.007)	-0.017*** (0.006)	-0.007** (0.003)	-0.001 (0.004)
Stress score at w2	0.048*** (0.012)	0.020*** (0.007)	0.017*** (0.004)	0.002 (0.002)	0.007*** (0.002)	0.008*** (0.002)	0.009*** (0.003)
Depression score at w2	0.025* (0.015)	0.013 (0.009)	0.007* (0.004)	0.008** (0.004)	0.002 (0.003)	0.003 (0.002)	0.002 (0.003)
[Education]Primary	0.514 (0.602)	-0.310*** (0.103)	-0.124* (0.068)	-0.029 (0.050)	-0.061 (0.069)	-0.016 (0.029)	0.278 (0.252)
REF[Education]Secondary	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
[Education]Non-Degree	-0.241* (0.124)	-0.086 (0.063)	-0.004 (0.027)	0.023 (0.028)	0.037 (0.024)	-0.006 (0.017)	-0.019 (0.020)
[Education]Degree	-0.221* (0.133)	-0.074 (0.064)	0.050 (0.047)	0.003 (0.023)	0.001 (0.025)	-0.019 (0.016)	-0.024 (0.019)
[Education]Postgrad	-0.135 (0.139)	0.013 (0.080)	0.003 (0.033)	-0.007 (0.023)	0.005 (0.027)	-0.015 (0.021)	-0.026 (0.018)
UC_M	-0.409** (0.172)	0.004 (0.143)	0.016 (0.058)	0.014 (0.051)	-0.015 (0.039)	0.002 (0.044)	0.014 (0.026)
UC_S	0.280 (0.756)	0.008 (0.158)	-0.034 (0.108)	-0.089 (0.062)	0.126* (0.075)	-0.009 (0.030)	0.028 (0.085)
S_UM	0.127 (0.324)	0.160 (0.178)	0.010 (0.075)	-0.018 (0.043)	0.066 (0.079)	-0.045*** (0.017)	0.080 (0.082)
PCG Age (w2)	-0.031** (0.012)	0.000 (0.005)	-0.005** (0.002)	-0.004* (0.002)	-0.005** (0.002)	-0.002 (0.001)	-0.002 (0.002)
Crisis Pregnancy	0.232 (0.200)	0.142* (0.086)	-0.014 (0.046)	-0.016 (0.032)	0.086* (0.045)	-0.022 (0.021)	0.097 (0.073)
Num of children in hhd (w2)	-0.336*** (0.054)	-0.052** (0.025)	0.047*** (0.011)	-0.003 (0.013)	0.004 (0.012)	0.014** (0.007)	0.018** (0.007)
Drank alcohol while pregnant	-0.052 (0.103)	-0.032 (0.047)	0.006 (0.023)	0.017 (0.033)	0.035 (0.024)	-0.009 (0.013)	-0.019 (0.014)
Smoked while pregnant	-0.245* (0.139)	0.017 (0.081)	-0.031 (0.027)	-0.047* (0.026)	-0.000 (0.027)	-0.008 (0.019)	-0.044 (0.033)
Had Complications in Pregnancy	0.299*** (0.091)	0.073* (0.040)	0.055** (0.024)	0.027 (0.020)	0.035* (0.018)	0.012 (0.012)	0.025 (0.019)
Disability/Chronic Illness	0.453*** (0.160)	0.078 (0.065)	0.039 (0.033)	0.015 (0.030)	0.103*** (0.034)	0.009 (0.023)	0.001 (0.021)
PCG Health is Poor/Fair	0.378 (0.235)	0.068 (0.094)	-0.036 (0.049)	0.020 (0.060)	0.061 (0.053)	-0.003 (0.025)	0.014 (0.038)
PCG has family history of poverty	0.156 (0.121)	0.015 (0.050)	-0.017 (0.025)	-0.050** (0.021)	0.045* (0.025)	0.009 (0.015)	0.016 (0.021)
Rural dweller (REF: Urban)	-0.202** (0.085)	0.006 (0.040)	-0.068*** (0.024)	0.022 (0.015)	-0.092*** (0.017)	0.010 (0.011)	-0.020 (0.016)
English is native language?(Yes=1)	0.412*** (0.131)	0.088 (0.063)	0.062** (0.030)	-0.011 (0.047)	0.050** (0.024)	0.028** (0.013)	-0.028 (0.039)
Constant	6.005*** (1.079)	2.604*** (0.661)	1.102*** (0.282)	0.741** (0.370)	0.890*** (0.230)	0.244* (0.137)	0.061 (0.173)
N	8640	8645	8646	8645	8646	8647	8643
F-test	0.000	0.000	0.000	0.025	0.000	0.006	0.213
AIC	44545	34228	22510	16133	16304	12835	18185

* p<0.10, ** p<0.05, *** p<0.01

Increase in GP usage over time

	gpu1	gpu2
gp_chgpos		
Married	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.074 (0.087)	-0.129 (0.089)
Solo	0.008 (0.108)	-0.122 (0.113)
1b.inc_quintiles2	0.000 (.)	0.000 (.)
2.inc_quintiles2	-0.102 (0.090)	-0.080 (0.092)
3.inc_quintiles2	-0.124 (0.091)	-0.001 (0.096)
4.inc_quintiles2	-0.208** (0.094)	-0.040 (0.102)
5.inc_quintiles2	-0.180* (0.100)	-0.005 (0.108)
1b.education_w2	0.000 (.)	0.000 (.)
2.education_w2	-0.164 (0.246)	-0.063 (0.252)
[Education]Non-Degree	-0.132 (0.246)	0.002 (0.252)
[Education]Degree	-0.245 (0.251)	-0.082 (0.257)
[Education]Postgrad	-0.326 (0.254)	-0.168 (0.260)
UC_M	-0.237* (0.136)	-0.233* (0.138)
UC_S	-0.259 (0.217)	-0.286 (0.223)
S_UM	-0.436** (0.200)	-0.465** (0.206)
PCG Age (w2)	0.001 (0.006)	0.003 (0.006)
Crisis Pregnancy	0.067 (0.102)	0.056 (0.104)
Num of children in hhd (w2)	-0.176*** (0.030)	-0.182*** (0.031)
Drank alcohol while pregnant	0.037 (0.066)	0.040 (0.066)
Smoked while pregnant	0.017 (0.079)	-0.011 (0.080)
Had Complications in Pregnancy	0.028 (0.055)	0.040 (0.056)
Disability/Chronic Illness	0.106 (0.086)	0.119 (0.087)
PCG Health is Poor/Fair	-0.099 (0.118)	-0.116 (0.120)
PCG has family history of poverty	-0.016 (0.068)	-0.037 (0.069)
Rural dweller (REF: Urban)	-0.153*** (0.055)	-0.162*** (0.056)
English is native language?(Yes=1)	-0.150* (0.080)	-0.065 (0.084)
Full_MedicalCard		0.368*** (0.079)
GP_Only_Card		0.336** (0.138)
No_MedicalCard		0.000 (.)
Child's weight at birth (grams)		-0.000 (0.000)
Gestational age at birth (wks)		-0.011 (0.016)
0b.stress_tri		0.000 (.)
1.stress_tri		0.033 (0.100)
2.stress_tri		0.050 (0.107)
0b.depress_tri		0.000 (.)
1.depress_tri		-0.014 (0.067)
2.depress_tri		0.116* (0.067)
Constant	0.359 (0.333)	0.528 (0.660)
N	8765	8557
F-test	0.000	0.000
AIC	11495	11204

* p<0.10, ** p<0.05, *** p<0.01

Indicators of child development

Logistic models: Indicators of children's development, Model 1 (Odds ratios)

	stand	ball	line	grip
main				
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	1.096 (0.138)	1.042 (0.197)	1.150 (0.208)	1.055 (0.090)
Solo	0.949 (0.139)	0.625** (0.123)	0.824 (0.151)	0.925 (0.097)
1.inc_quintiles2	0.871 (0.125)	1.328 (0.298)	0.886 (0.171)	1.014 (0.097)
2.inc_quintiles2	0.845 (0.111)	1.065 (0.209)	0.705** (0.121)	0.934 (0.083)
3.inc_quintiles2	0.836 (0.101)	1.030 (0.186)	0.763* (0.122)	0.870* (0.070)
4.inc_quintiles2	0.946 (0.112)	1.130 (0.210)	0.697** (0.110)	0.974 (0.074)
5b.inc_quintiles2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
1.education_w2	1.810 (0.703)	1.969 (1.221)	0.992 (0.359)	1.031 (0.253)
2b.education_w2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w2	1.126 (0.112)	1.257 (0.189)	1.224* (0.149)	1.081 (0.075)
4.education_w2	1.086 (0.126)	1.298 (0.228)	1.197 (0.174)	1.065 (0.086)
5.education_w2	1.168 (0.151)	1.295 (0.251)	1.302 (0.227)	1.113 (0.099)
UC_M	0.909 (0.177)	0.963 (0.277)	0.682* (0.148)	0.943 (0.121)
UC_S	0.902 (0.258)	1.379 (0.550)	0.735 (0.245)	0.891 (0.180)
S_UM	0.863 (0.240)	1.268 (0.572)	0.878 (0.332)	1.399* (0.283)
age2_pcgw2	0.997 (0.009)	1.001 (0.013)	1.009 (0.011)	0.992 (0.006)
PCG 'doesn't get enough help'	0.957 (0.106)	0.784 (0.131)	0.853 (0.118)	0.905 (0.070)
Crisis Pregnancy	0.914 (0.127)	1.099 (0.236)	0.897 (0.153)	0.877 (0.087)
Num of children in hhd (w2)	1.057 (0.042)	0.886** (0.054)	0.924 (0.049)	0.997 (0.027)
Drank alcohol while pregnant	0.968 (0.090)	0.824 (0.115)	1.130 (0.132)	0.952 (0.060)
Smoked while pregnant	0.998 (0.110)	1.147 (0.192)	1.002 (0.135)	0.975 (0.074)
Had Complications in Pregnancy	0.812*** (0.063)	0.819* (0.096)	1.019 (0.101)	0.843*** (0.045)
Disability/Chronic Illness	0.983 (0.117)	0.866 (0.160)	1.051 (0.158)	1.076 (0.090)
PCG Health is Poor/Fair	0.895 (0.140)	1.110 (0.285)	0.767 (0.138)	0.920 (0.104)
PCG has family history of poverty	0.868 (0.079)	1.036 (0.144)	0.806* (0.091)	1.033 (0.067)
Rural dweller (REF: Urban)	0.955 (0.074)	1.016 (0.117)	0.984 (0.098)	1.065 (0.056)
English is native language?(Yes=1)	1.315** (0.143)	1.460** (0.236)	1.070 (0.151)	0.937 (0.073)
Constant	6.598*** (2.295)	13.046*** (6.888)	11.233*** (4.767)	1.448 (0.342)
N	8746	8794	8791	8791
F-test	0.072	0.161	0.009	0.135
AIC	6903	3662	4851	12174

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

Logistic models: Indicators of children's development, Model 2 (Odds ratios)

	stand	ball	line	grip
main				
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	1.066 (0.138)	1.004 (0.193)	1.108 (0.209)	1.034 (0.089)
Solo	0.954 (0.145)	0.647** (0.130)	0.864 (0.161)	0.947 (0.101)
1.inc_quintiles2	0.927 (0.135)	1.408 (0.323)	0.952 (0.186)	1.029 (0.100)
2.inc_quintiles2	0.931 (0.124)	1.121 (0.224)	0.829 (0.144)	0.950 (0.086)
3.inc_quintiles2	0.854 (0.103)	1.030 (0.189)	0.792 (0.129)	0.885 (0.072)
4.inc_quintiles2	0.957 (0.114)	1.085 (0.205)	0.715** (0.115)	0.993 (0.077)
5b.inc_quintiles2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
1.education_w2	1.955* (0.769)	2.197 (1.424)	1.224 (0.478)	1.060 (0.263)
2b.education_w2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w2	1.083 (0.109)	1.263 (0.190)	1.164 (0.146)	1.067 (0.076)
4.education_w2	1.009 (0.118)	1.261 (0.225)	1.081 (0.161)	1.049 (0.086)
5.education_w2	1.094 (0.144)	1.171 (0.229)	1.157 (0.207)	1.111 (0.101)
UC_M	0.860 (0.168)	0.940 (0.268)	0.639** (0.142)	0.930 (0.122)
UC_S	0.898 (0.271)	1.413 (0.595)	0.716 (0.260)	0.928 (0.193)
S_UM	0.842 (0.243)	1.377 (0.672)	0.953 (0.360)	1.518** (0.316)
PCG Age (w2)	0.998 (0.009)	0.999 (0.013)	1.012 (0.011)	0.994 (0.006)
Stress score at w2	0.999 (0.010)	0.975 (0.016)	0.943*** (0.011)	0.983** (0.007)
Child's weight at birth (grams)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000*** (0.000)
Gestational age at birth (wks)	1.050** (0.022)	1.024 (0.034)	1.020 (0.030)	1.051*** (0.017)
Parenting: Warmth index	1.001 (0.106)	1.017 (0.154)	0.853 (0.121)	1.006 (0.076)
Parenting: Hostility index	0.996 (0.094)	1.155 (0.153)	1.404*** (0.164)	0.909 (0.059)
Parenting: Consistency index	1.236*** (0.069)	1.313*** (0.102)	1.404*** (0.095)	1.047 (0.040)
Pianta: Positive aspects scale	1.138*** (0.021)	1.141*** (0.024)	1.171*** (0.024)	1.076*** (0.015)
Pianta: Conflict scale	1.018** (0.009)	1.007 (0.013)	1.002 (0.011)	1.006 (0.006)
PCG 'doesn't get enough help'	0.956 (0.110)	0.810 (0.138)	0.967 (0.143)	0.957 (0.076)
Crisis Pregnancy	0.911 (0.131)	1.106 (0.242)	0.960 (0.167)	0.919 (0.093)
Num of children in hhd (w2)	1.083** (0.044)	0.903* (0.056)	0.895** (0.048)	0.994 (0.028)
Drank alcohol while pregnant	0.982 (0.093)	0.857 (0.120)	1.135 (0.136)	0.976 (0.062)
Smoked while pregnant	1.040 (0.120)	1.252 (0.218)	1.098 (0.159)	0.969 (0.075)
Had Complications in Pregnancy	0.811*** (0.064)	0.838 (0.101)	1.064 (0.108)	0.844*** (0.045)
Disability/Chronic Illness	0.964 (0.119)	0.881 (0.171)	1.058 (0.162)	1.092 (0.094)
PCG Health is Poor/Fair	0.934 (0.151)	1.282 (0.340)	0.786 (0.147)	0.965 (0.112)
PCG has family history of poverty	0.870 (0.082)	1.000 (0.142)	0.799* (0.092)	1.036 (0.069)
Rural dweller (REF: Urban)	0.930 (0.074)	0.964 (0.115)	0.920 (0.094)	1.058 (0.057)
English is native language?(Yes=1)	1.236* (0.138)	1.299 (0.208)	0.964 (0.140)	0.886 (0.071)
Constant	0.004*** (0.005)	0.011*** (0.017)	0.016*** (0.024)	0.031*** (0.027)
N	8563	8611	8608	8608
F-test	0.000	0.000	0.000	0.000
AIC	6619	3505	4563	11873

Note: Education: 1=Primary, 2=Secondary, 3=non-Degree, 4=Degree, 5=Postgrad

* p<0.10, ** p<0.05, *** p<0.01

Child SDQ (social and behavioural difficulties) scores

SDQ scores	1	2
Married	0.000 (.)	0.000 (.)
Unmarried-cohab	-0.024 (0.198)	-0.100 (0.153)
Solo	0.792*** (0.243)	0.496** (0.199)
1.inc_quintilesw2	0.965*** (0.215)	0.671*** (0.170)
2.inc_quintilesw2	1.209*** (0.194)	0.788*** (0.155)
3.inc_quintilesw2	0.874*** (0.169)	0.714*** (0.137)
4.inc_quintilesw2	0.264* (0.153)	0.207 (0.127)
[REF]5_inc_quintilesw2	0.000 (.)	0.000 (.)
[Education]Primary	0.357 (0.583)	0.693 (0.460)
REF[Education]Secondary	0.000 (.)	0.000 (.)
[Education]Non-Degree	-0.421*** (0.160)	-0.343*** (0.128)
[Education]Degree	-0.873*** (0.175)	-0.822*** (0.142)
[Education]Postgrad	-0.753*** (0.188)	-0.581*** (0.159)
UC_M	0.449 (0.299)	0.271 (0.227)
UC_S	0.269 (0.493)	0.074 (0.411)
S_UM	1.263*** (0.477)	1.016*** (0.333)
PCG Age (w2)	-0.076*** (0.013)	-0.051*** (0.011)
PCG 'doesn't get enough help'	1.008*** (0.188)	0.034 (0.146)
Crisis Pregnancy	0.669*** (0.233)	0.251 (0.195)
Baby is Male (M=1)	0.884*** (0.113)	0.628*** (0.090)
Num of children in hhd (w2)	-0.189*** (0.064)	-0.162*** (0.051)
Drank alcohol while pregnant	0.302** (0.143)	-0.105 (0.116)
Smoked while pregnant	0.528*** (0.176)	0.300** (0.140)
Had Complications in Pregnancy	0.297** (0.118)	0.163* (0.095)
Disability/Chronic Illness	0.407** (0.188)	0.174 (0.149)
PCG Health is Poor/Fair	1.134*** (0.273)	0.616*** (0.209)
PCG has family history of poverty	0.275* (0.150)	0.218* (0.119)
Rural dweller (REF: Urban)	-0.062 (0.119)	-0.010 (0.095)
English is native language?(Yes=1)	-0.768*** (0.182)	-0.117 (0.153)
Parenting: warmth index		-0.205 (0.132)
Parenting: Hostility index		1.774*** (0.117)
Parenting: Consistency index		-0.747*** (0.074)
Pianta: Positive aspects scale		-0.324*** (0.031)
Pianta: Conflict scale		0.305*** (0.011)
[REF]Depression_NoChange		0.000 (.)
LowerDepression		0.131 (0.112)
HigherDepression		0.328*** (0.116)
[REF]Stress_NoChange		0.000 (.)
LowerStress		-0.084 (0.163)
HigherStress		0.407** (0.180)
Constant	10.053*** (0.554)	15.961*** (1.368)
N	8826	8682
F-test	0.000	0.000
AIC	51202	46330

* p<0.10, ** p<0.05, *** p<0.01

Obesity & Overweight incidence among study children, by gender

Obesity (cols 1,2) & Overweight (cols 3,4): odds-ratios

	F	M	F	M
main				
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	0.714 (0.229)	1.119 (0.319)	1.335* (0.215)	0.900 (0.154)
Solo	0.569* (0.192)	0.939 (0.354)	1.314 (0.273)	1.367 (0.293)
1.inc_quintiles2	1.115 (0.371)	3.491*** (1.130)	0.955 (0.185)	1.034 (0.193)
2.inc_quintiles2	0.618 (0.201)	3.481*** (1.122)	0.883 (0.155)	1.014 (0.168)
3.inc_quintiles2	0.900 (0.251)	1.268 (0.421)	0.762* (0.122)	1.180 (0.177)
4.inc_quintiles2	1.001 (0.271)	0.834 (0.278)	1.001 (0.148)	0.954 (0.139)
[REF]5_inc_quintiles2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
[Education]Primary	2.096 (1.273)	2.487* (1.265)	0.682 (0.336)	0.659 (0.330)
REF[Education]Secondary	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
[Education]Non-Degree	1.041 (0.237)	0.922 (0.213)	1.030 (0.136)	1.026 (0.137)
[Education]Degree	0.835 (0.235)	0.868 (0.258)	1.160 (0.178)	1.217 (0.187)
[Education]Postgrad	0.763 (0.232)	1.118 (0.343)	0.890 (0.163)	1.120 (0.192)
Stress score at w2	0.992 (0.026)	1.015 (0.025)	1.013 (0.014)	1.011 (0.015)
Depression score at w2	1.050** (0.021)	0.954 (0.031)	0.996 (0.017)	1.030* (0.017)
Parenting: Warmth index	1.417 (0.411)	1.214 (0.326)	1.330* (0.218)	1.150 (0.174)
Parenting: Hostility index	1.097 (0.223)	0.916 (0.227)	0.988 (0.125)	0.960 (0.117)
Parenting: Consistency index	0.763** (0.090)	0.840 (0.102)	0.842** (0.061)	0.808*** (0.054)
Pianta: Positive aspects scale	1.061 (0.048)	0.965 (0.040)	1.016 (0.038)	0.995 (0.024)
Pianta: Conflict scale	0.994 (0.019)	0.980 (0.021)	0.985 (0.011)	0.986 (0.012)
UC_M	0.975 (0.413)	0.953 (0.432)	1.154 (0.287)	1.123 (0.257)
UC_S	0.352 (0.310)	0.613 (0.521)	0.903 (0.346)	0.888 (0.325)
S_UM	0.212** (0.150)	0.807 (0.494)	1.475 (0.533)	1.507 (0.508)
PCG Age (w2)	0.973 (0.022)	1.039* (0.022)	0.991 (0.011)	0.987 (0.012)
PCG 'doesn't get enough help'	0.677 (0.200)	0.955 (0.297)	0.993 (0.161)	0.892 (0.144)
Crisis Pregnancy	1.026 (0.328)	1.386 (0.475)	0.680* (0.136)	1.333 (0.248)
Num of children in hhd (w2)	0.968 (0.105)	0.641*** (0.064)	1.002 (0.055)	1.068 (0.059)
Grandparent babysits regularly=1	1.040 (0.195)	0.850 (0.192)	1.041 (0.119)	0.879 (0.103)
Drank alcohol while pregnant	0.638** (0.144)	0.664 (0.169)	1.135 (0.135)	0.875 (0.108)
Smoked while pregnant	2.611*** (0.579)	1.532 (0.434)	1.155 (0.167)	1.137 (0.171)
Had Complications in Pregnancy	1.086 (0.183)	0.970 (0.182)	0.994 (0.103)	1.036 (0.106)
Disability/Chronic Illness	0.703 (0.209)	0.856 (0.252)	0.938 (0.152)	0.823 (0.136)
PCG Health is Poor/Fair	1.433 (0.465)	1.010 (0.412)	1.090 (0.256)	0.836 (0.184)
PCG has family history of poverty	1.166 (0.260)	0.892 (0.210)	1.239* (0.152)	1.315** (0.162)
Rural dweller (REF: Urban)	1.303 (0.227)	1.309 (0.279)	1.061 (0.109)	1.214* (0.130)
English is native language?(Yes=1)	0.870 (0.289)	1.053 (0.327)	1.377* (0.261)	1.054 (0.191)
Child's weight at birth (grams)	1.001*** (0.000)	1.001*** (0.000)	1.001*** (0.000)	1.001*** (0.000)
Gestational age at birth (wks)	0.924 (0.045)	1.010 (0.067)	0.931** (0.029)	0.885*** (0.027)
Constant	0.010* (0.028)	0.001** (0.003)	0.170 (0.323)	4.320 (7.151)
N	3774	3906	3774	3906
F-test	0.000	0.000	0.003	0.000
AIC	1612	1452	3650	3780
ll	-770	-690	-1789	-1854

* p<0.10, ** p<0.05, *** p<0.01

Healthy and unhealthy foods

Logistic models of child having foods at least once in previous 24 hours

	fruit	veg	chips	sweets	fizzy
main					
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	0.931 (0.133)	0.740** (0.088)	1.099 (0.106)	0.940 (0.082)	1.032 (0.099)
Solo	0.866 (0.141)	0.878 (0.122)	1.002 (0.118)	1.010 (0.108)	1.299** (0.156)
1b.inc_quintiles _{w2}	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles _{w2}	0.897 (0.124)	0.979 (0.115)	0.961 (0.091)	1.096 (0.096)	1.004 (0.096)
3.inc_quintiles _{w2}	0.808 (0.119)	1.138 (0.142)	0.865 (0.087)	0.989 (0.089)	1.037 (0.104)
4.inc_quintiles _{w2}	0.869 (0.140)	1.071 (0.144)	0.888 (0.096)	1.086 (0.105)	1.068 (0.113)
5.inc_quintiles _{w2}	1.231 (0.232)	1.218 (0.180)	0.716*** (0.085)	0.893 (0.092)	1.006 (0.115)
[Education]Primary	1.037 (0.349)	1.377 (0.409)	1.328 (0.332)	1.166 (0.296)	1.618* (0.409)
REF[Education]Secondary	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
[Education]Non-Degree	1.520*** (0.158)	1.192* (0.111)	0.780*** (0.060)	0.865** (0.062)	0.936 (0.072)
[Education]Degree	2.353*** (0.328)	1.583*** (0.188)	0.721*** (0.068)	0.836** (0.070)	0.811** (0.075)
[Education]Postgrad	2.721*** (0.454)	1.371** (0.177)	0.613*** (0.066)	0.754*** (0.070)	0.812** (0.084)
UC_M	0.684* (0.152)	0.808 (0.142)	1.162 (0.180)	0.958 (0.129)	0.919 (0.137)
UC_S	0.812 (0.258)	0.616* (0.162)	0.865 (0.200)	1.479* (0.312)	0.813 (0.177)
S_UM	0.685 (0.188)	1.017 (0.263)	1.314 (0.273)	1.431* (0.292)	1.028 (0.218)
PCG Age (w2)	0.984* (0.009)	0.995 (0.008)	0.979*** (0.007)	1.013** (0.006)	0.976*** (0.007)
PCG 'doesn't get enough help'	1.188 (0.179)	1.004 (0.112)	0.940 (0.090)	0.805*** (0.065)	1.003 (0.090)
Crisis Pregnancy	1.009 (0.161)	0.952 (0.127)	1.104 (0.120)	1.212* (0.122)	1.214* (0.130)
Num of children in hhd (w2)	1.006 (0.046)	0.944 (0.037)	1.098*** (0.036)	0.949* (0.027)	1.109*** (0.035)
Drank alcohol while pregnant	1.096 (0.123)	1.060 (0.098)	1.080 (0.081)	1.019 (0.065)	1.079 (0.076)
Smoked while pregnant	0.826* (0.095)	1.087 (0.117)	1.141 (0.097)	1.008 (0.078)	1.106 (0.092)
Had Complications in Pregnancy	0.891 (0.084)	0.881* (0.068)	0.950 (0.060)	1.009 (0.054)	1.025 (0.061)
Disability/Chronic Illness	0.919 (0.129)	0.861 (0.099)	0.904 (0.090)	0.926 (0.079)	0.991 (0.095)
PCG Health is Poor/Fair	1.177 (0.217)	1.125 (0.166)	1.353** (0.166)	0.918 (0.106)	0.960 (0.122)
PCG has family history of poverty	1.053 (0.116)	0.849* (0.076)	1.080 (0.081)	1.037 (0.068)	0.980 (0.073)
Rural dweller (REF: Urban)	1.015 (0.093)	1.189** (0.090)	0.834*** (0.052)	1.144** (0.061)	1.078 (0.065)
English is native language?(Yes=1)	0.749* (0.120)	1.072 (0.130)	1.073 (0.111)	0.677*** (0.061)	1.685*** (0.187)
Gestational age at birth (wks)	0.997 (0.025)	0.975 (0.022)	0.983 (0.018)	1.022 (0.016)	0.969* (0.017)
Child's weight at birth (grams)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)	1.000 (0.000)
Stress score at w2	0.985 (0.012)	0.975** (0.010)	0.990 (0.008)	0.980*** (0.007)	0.987 (0.008)
Depression score at w2	0.986 (0.013)	1.002 (0.011)	1.021** (0.009)	1.016* (0.008)	1.005 (0.009)
Parenting: Warmth index	0.859 (0.114)	0.988 (0.104)	0.982 (0.083)	0.842** (0.063)	0.968 (0.080)
Parenting: Consistency index	1.174** (0.073)	1.148*** (0.058)	0.852*** (0.037)	0.893*** (0.034)	0.866*** (0.036)
Parenting: Hostility index	1.014 (0.116)	0.947 (0.088)	1.049 (0.077)	1.136** (0.074)	1.175** (0.084)
Pianta: Positive aspects scale	1.058*** (0.023)	1.034** (0.018)	0.971** (0.015)	1.028* (0.015)	1.030* (0.017)
Pianta: Conflict scale	1.000 (0.010)	0.995 (0.008)	0.989 (0.007)	1.016*** (0.006)	1.004 (0.007)
In regular contact w Grandparents, w2?	1.141 (0.207)	1.041 (0.152)	0.736*** (0.087)	1.139 (0.125)	0.874 (0.114)
PCG is in work at w2 (Y=1)	1.030 (0.109)	1.116 (0.095)	1.037 (0.072)	1.028 (0.062)	1.129* (0.076)
Constant	1.725 (2.357)	3.854 (4.366)	20.167*** (19.202)	0.360 (0.307)	0.985 (0.948)
N	8625	8625	8623	8624	8626
F-test	0.000	0.000	0.000	0.000	0.000
AIC	5660	7346	9828	11859	10320
ll	-2793	-3636	-4877	-5892	-5123

* p<0.10, ** p<0.05, *** p<0.01

Eating habits

ordered Logistic models of child 'eating whenever' or eating 'when bored'

	whenever	whenever	Bored	Bored
main				
Married	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
Unmarried-cohab	0.911 (0.072)	0.890 (0.071)	1.037 (0.102)	0.999 (0.101)
Solo	0.725*** (0.074)	0.692*** (0.073)	0.979 (0.119)	0.877 (0.113)
1b.inc_quintiles _{w2}	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles _{w2}	0.973 (0.080)	0.932 (0.078)	1.115 (0.109)	1.079 (0.111)
3.inc_quintiles _{w2}	0.998 (0.083)	0.994 (0.084)	0.991 (0.099)	1.003 (0.107)
4.inc_quintiles _{w2}	0.907 (0.076)	0.884 (0.076)	1.253** (0.127)	1.273** (0.139)
5.inc_quintiles _{w2}	1.025 (0.090)	1.027 (0.094)	1.113 (0.120)	1.176 (0.137)
1b.education_w2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.education_w2	0.638 (0.179)	0.678 (0.188)	0.610 (0.190)	0.591 (0.194)
[Education]Non-Degree	0.655 (0.184)	0.743 (0.207)	0.665 (0.207)	0.669 (0.220)
[Education]Degree	0.671 (0.190)	0.769 (0.216)	0.670 (0.211)	0.661 (0.220)
[Education]Postgrad	0.765 (0.218)	0.899 (0.255)	0.633 (0.201)	0.637 (0.213)
UC_M	0.848 (0.097)	0.841 (0.100)	0.974 (0.144)	0.947 (0.141)
UC_S	1.442* (0.296)	1.474* (0.310)	0.698 (0.165)	0.700 (0.177)
S_UM	0.811 (0.162)	0.782 (0.153)	0.668* (0.163)	0.595** (0.147)
PCG Age (w2)	1.007 (0.006)	1.006 (0.006)	0.999 (0.006)	1.003 (0.007)
PCG 'doesn't get enough help'	1.117 (0.076)	1.040 (0.074)	1.193** (0.099)	0.990 (0.088)
Crisis Pregnancy	1.297*** (0.119)	1.221** (0.115)	1.159 (0.130)	1.102 (0.129)
Num of children in hhd (w2)	0.937** (0.024)	0.937** (0.025)	1.038 (0.031)	1.022 (0.034)
Drank alcohol while pregnant	1.091 (0.062)	1.060 (0.061)	1.271*** (0.084)	1.189** (0.081)
Smoked while pregnant	1.198** (0.085)	1.151* (0.083)	0.919 (0.080)	0.896 (0.082)
Had Complications in Pregnancy	0.978 (0.046)	0.972 (0.047)	0.921 (0.054)	0.900* (0.054)
Disability/Chronic Illness	1.076 (0.084)	1.098 (0.089)	1.010 (0.094)	0.993 (0.098)
PCG Health is Poor/Fair	1.024 (0.109)	0.998 (0.106)	0.869 (0.113)	0.834 (0.112)
PCG has family history of poverty	1.205*** (0.072)	1.218*** (0.074)	1.011 (0.072)	1.007 (0.074)
Rural dweller (REF: Urban)	0.898** (0.043)	0.900** (0.044)	1.024 (0.060)	1.029 (0.062)
English is native language?(Yes=1)	0.620*** (0.049)	0.694*** (0.065)	0.567*** (0.049)	0.676*** (0.069)
Gestational age at birth (wks)		1.002 (0.014)		1.015 (0.018)
Child's weight at birth (grams)		1.000 (0.000)		1.000 (0.000)
Stress score at w2		1.013* (0.007)		1.018** (0.009)
Depression score at w2		1.000 (0.008)		1.001 (0.010)
Parenting: Warmth index		0.946 (0.061)		0.745*** (0.059)
Parenting: Consistency index		0.664*** (0.025)		0.751*** (0.032)
Parenting: Hostility index		1.126** (0.068)		1.523*** (0.109)
Pianta: Positive aspects scale		1.004 (0.013)		0.983 (0.014)
Pianta: Conflict scale		1.004 (0.006)		1.023*** (0.007)
In regular contact w Grandparents, w2?		1.006 (0.108)		0.809* (0.102)
PCG is in Work at w2 (Y=1)		1.102* (0.059)		1.016 (0.069)
cut1				
Constant	0.168*** (0.058)	0.068*** (0.060)	1.245 (0.484)	0.427 (0.424)
cut2				
Constant	0.551* (0.191)	0.229* (0.203)	4.003*** (1.571)	1.421 (1.411)
cut3				
Constant	2.783*** (0.969)	1.199 (1.059)	45.346*** (19.161)	16.575*** (16.632)
cut4				
Constant	9.919*** (3.491)	4.337* (3.835)	280.233*** (127.985)	115.417*** (117.991)
N	8825	8627	8822	8625
F-test	0.000	0.000	0.000	0.000
AIC	25283	24476	14206	13494
ll	-12612	-12198	-7074	-6707

* p<0.10, ** p<0.05, *** p<0.01

A5. Work and Welfare

Positive educational change over time

Positive educational change over time, w1->w2

	All	All	Not-work	working
Improved education level w1->w2				
1b.marital2	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.marital2	0.765** (0.096)	0.758** (0.096)	0.894 (0.172)	0.657** (0.113)
3.marital2	0.988 (0.140)	0.849 (0.138)	1.161 (0.241)	0.576** (0.161)
1b.inc_quintilesw1	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintilesw1	1.096 (0.136)	1.109 (0.138)	0.869 (0.135)	1.605** (0.356)
3.inc_quintilesw1	1.580*** (0.203)	1.602*** (0.207)	1.679*** (0.299)	1.664** (0.354)
4.inc_quintilesw1	1.948*** (0.260)	1.979*** (0.265)	2.568*** (0.554)	1.934*** (0.408)
5.inc_quintilesw1	1.878*** (0.283)	1.908*** (0.288)	1.187 (0.364)	2.224*** (0.499)
[Education]Primary	2.724*** (0.543)	2.730*** (0.546)	3.070*** (0.708)	2.777** (1.239)
REF[Education]Secondary	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
[Education]Non-Degree	0.301*** (0.028)	0.301*** (0.028)	0.233*** (0.037)	0.335*** (0.040)
[Education]Degree	0.334*** (0.036)	0.334*** (0.036)	0.277*** (0.055)	0.346*** (0.046)
[Education]Postgrad	1.000 (.)	1.000 (.)	1.000 (.)	1.000 (.)
UC_M	1.025 (0.192)	1.027 (0.192)	1.323 (0.403)	0.865 (0.205)
UC_S	0.826 (0.230)	0.844 (0.235)	0.848 (0.314)	0.930 (0.405)
S_UM	1.583* (0.401)	1.540* (0.396)	2.318*** (0.696)	0.734 (0.403)
PCG Age at w1	0.997 (0.008)	0.998 (0.008)	1.005 (0.011)	0.987 (0.012)
PCG 'doesn't get enough help'	1.383*** (0.160)	1.383*** (0.161)	1.494** (0.262)	1.237 (0.200)
Crisis Pregnancy	1.313** (0.174)	1.314** (0.174)	1.174 (0.209)	1.438* (0.280)
Num of children in hhd (w2)	0.937* (0.036)	0.937* (0.036)	0.900* (0.050)	1.007 (0.057)
Drank alcohol while pregnant	1.144 (0.112)	1.136 (0.111)	1.077 (0.181)	1.175 (0.141)
Smoked while pregnant	0.792** (0.085)	0.791** (0.085)	0.657*** (0.100)	0.968 (0.147)
Had Complications in Pregnancy	0.980 (0.078)	0.984 (0.079)	1.190 (0.148)	0.873 (0.091)
Disability/Chronic Illness	1.006 (0.123)	1.012 (0.123)	1.101 (0.193)	0.973 (0.169)
PCG Health is Poor/Fair	0.783 (0.128)	0.774 (0.126)	0.621** (0.145)	0.894 (0.213)
PCG has family history of poverty	0.986 (0.094)	0.980 (0.093)	0.909 (0.130)	1.014 (0.127)
Rural dweller (REF: Urban)	0.923 (0.073)	0.924 (0.073)	0.970 (0.118)	0.890 (0.093)
English is native language?(Yes=1)	0.599*** (0.066)	0.593*** (0.066)	0.531*** (0.084)	0.603*** (0.097)
Transitioned into OPFP receipt w1->w2		1.433* (0.273)	1.093 (0.254)	2.195** (0.729)
Constant	0.541** (0.158)	0.525** (0.154)	0.419** (0.169)	0.708 (0.320)
N	7376	7376	3167	4209
F-test	0.000	0.000	0.000	0.000
AIC	6898	6893	3027	3839

Note: Postgraduates excluded as already at highest level

* p<0.10, ** p<0.05, *** p<0.01

Transition into work, unemployment, and from home duties->work

Transition into Unemployment or Work

	UnempTran	WorkTrans	HomeToWork
main			
1b.marital1	1.000 (.)	1.000 (.)	1.000 (.)
2.marital1	2.515*** (0.668)	0.903 (0.141)	0.949 (0.197)
3.marital1	1.744 (0.672)	0.781 (0.149)	0.771 (0.170)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	1.182 (0.349)	0.891 (0.134)	1.053 (0.178)
3.inc_quintiles_w1	0.721 (0.218)	0.848 (0.126)	1.279 (0.225)
4.inc_quintiles_w1	0.609 (0.185)	0.432*** (0.074)	1.407* (0.279)
5.inc_quintiles_w1	0.445** (0.152)	0.369*** (0.074)	1.855*** (0.418)
1.education_w1	2.478 (1.804)	0.202*** (0.098)	0.191*** (0.096)
2b.education_w1	1.000 (.)	1.000 (.)	1.000 (.)
3.education_w1	1.395 (0.347)	1.090 (0.139)	1.543*** (0.234)
4.education_w1	0.949 (0.296)	1.492*** (0.225)	2.464*** (0.434)
5.education_w1	1.391 (0.473)	1.455** (0.256)	3.317*** (0.721)
Improved education level w1->w2	1.026 (0.274)	1.330** (0.181)	1.677*** (0.280)
UC_M	0.597 (0.249)	1.282 (0.350)	0.898 (0.313)
UC_S	1.403 (0.608)	1.014 (0.347)	1.286 (0.553)
S_UM	1.315 (0.854)	1.379 (0.460)	2.054* (0.760)
PCG Age at w1	0.983 (0.024)	1.002 (0.010)	1.014 (0.012)
PCG 'doesn't get enough help'	1.407 (0.375)	1.172 (0.173)	0.878 (0.154)
Crisis Pregnancy	0.817 (0.277)	1.176 (0.198)	1.199 (0.241)
Num children in hhd increased w1->w2	0.767 (0.149)	0.660*** (0.066)	0.587*** (0.070)
Num children in hsd at w1	0.865 (0.112)	0.836*** (0.047)	0.673*** (0.044)
Drank alcohol while pregnant	0.889 (0.223)	1.160 (0.133)	1.239 (0.174)
Smoked while pregnant	1.357 (0.332)	0.857 (0.120)	0.931 (0.156)
Had Complications in Pregnancy	0.947 (0.177)	0.885 (0.090)	0.909 (0.109)
Disability/Chronic Illness	0.872 (0.247)	0.991 (0.146)	0.901 (0.148)
PCG Health is Poor/Fair	1.133 (0.393)	1.024 (0.206)	0.933 (0.210)
PCG has family history of poverty	0.937 (0.224)	0.761** (0.096)	0.880 (0.130)
Rural dweller (REF: Urban)	0.977 (0.195)	1.090 (0.108)	1.299** (0.158)
English is native language?(Yes=1)	1.211 (0.310)	0.995 (0.135)	1.117 (0.180)
Constant	0.058*** (0.045)	0.130*** (0.050)	0.097*** (0.047)
N	5127	8564	2943
F-test	0.000	0.000	0.000
AIC	1449	4718	2618
ll	-696	-2331	-1281

* p<0.10, ** p<0.05, *** p<0.01

.
.

Maternity leave association with SDQ scores**SDQ scores**

	Paid	Unpaid	Annual	Interact
Married	0 (.)	0 (.)	0 (.)	0 (.)
Unmarried-cohab	-0.268 (0.23)	-0.287 (0.229)	-0.281 (0.231)	-0.827*** (0.287)
1.inc_quintiles2	1.203*** (0.31)	1.177*** (0.307)	1.189*** (0.316)	1.150*** (0.305)
2.inc_quintiles2	0.489** (0.23)	0.439* (0.232)	0.473** (0.23)	0.441* (0.232)
3.inc_quintiles2	0.537*** (0.192)	0.507*** (0.194)	0.519*** (0.193)	0.522*** (0.194)
4.inc_quintiles2	0.082 (0.162)	0.064 (0.162)	0.073 (0.162)	0.078 (0.162)
[REF]5_inc_quintiles2	0 (.)	0 (.)	0 (.)	0 (.)
[Education]Primary	2.708*** (1.024)	2.665*** (1.002)	2.680*** (1.01)	2.702*** (0.995)
REF[Education]Secondary	0 (.)	0 (.)	0 (.)	0 (.)
[Education]Non-Degree	-0.441** (0.222)	-0.424* (0.222)	-0.422* (0.223)	-0.432* (0.222)
[Education]Degree	-0.974*** (0.232)	-0.956*** (0.232)	-0.963*** (0.232)	-0.967*** (0.232)
[Education]Postgrad	-0.956*** (0.247)	-0.959*** (0.247)	-0.940*** (0.248)	-0.966*** (0.247)
Parenting: Warmth index	-0.385* (0.2)	-0.388* (0.199)	-0.385* (0.2)	-0.381* (0.2)
Parenting: Hostility index	1.823*** (0.171)	1.818*** (0.17)	1.822*** (0.171)	1.827*** (0.17)
Parenting: Consistency index	-0.393*** (0.108)	-0.392*** (0.108)	-0.396*** (0.108)	-0.392*** (0.108)
Pianta: Positive aspects scale	-0.350*** (0.045)	-0.351*** (0.045)	-0.350*** (0.045)	-0.350*** (0.045)
Pianta: Conflict scale	0.293*** (0.016)	0.294*** (0.016)	0.293*** (0.016)	0.293*** (0.016)
[REF]Depression_NoChange	0 (.)	0 (.)	0 (.)	0 (.)
LowerDepression	0.119 (0.15)	0.112 (0.15)	0.117 (0.15)	0.114 (0.15)
HigherDepression	0.434*** (0.162)	0.423*** (0.161)	0.432*** (0.162)	0.433*** (0.161)

[REF]Stress_NoChange	0	0	0	0
	(.)	(.)	(.)	(.)
LowerStress	-0.11	-0.109	-0.116	-0.115
	(0.246)	(0.245)	(0.245)	(0.245)
HigherStress	0.355	0.371	0.352	0.37
	(0.268)	(0.268)	(0.267)	(0.268)
UC_M	0.116	0.111	0.11	0.116
	(0.306)	(0.307)	(0.306)	(0.307)
S_UM	1.562***	1.542***	1.556***	1.461**
	(0.574)	(0.572)	(0.57)	(0.575)
PCG Age (W2)	-0.062***	-0.061***	-0.061***	-0.060***
	(0.016)	(0.016)	(0.016)	(0.016)
PCG 'doesn't get enough help'	-0.092	-0.088	-0.091	-0.096
	(0.229)	(0.228)	(0.229)	(0.229)
Crisis Pregnancy	0.135	0.131	0.137	0.135
	(0.316)	(0.315)	(0.316)	(0.316)
Baby is Male (M=1)	0.378***	0.374***	0.368***	0.383***
	(0.127)	(0.127)	(0.127)	(0.127)
Num of children in hhd (W2)	-0.202**	-0.202**	-0.209**	-0.202**
	(0.082)	(0.082)	(0.082)	(0.082)
Grandparent babysits regularly=1	-0.19	-0.193	-0.193	-0.192
	(0.143)	(0.143)	(0.143)	(0.142)
Drank alcohol while pregnant	-0.13	-0.113	-0.125	-0.112
	(0.159)	(0.159)	(0.159)	(0.159)
Smoked while pregnant	0.376*	0.364	0.364	0.369*
	(0.224)	(0.225)	(0.224)	(0.224)
Had Complications in Pregnancy	0.285**	0.300**	0.290**	0.291**
	(0.134)	(0.135)	(0.134)	(0.134)
Disability/Chronic Illness	-0.172	-0.181	-0.179	-0.184
	(0.225)	(0.226)	(0.226)	(0.225)
PCG Health is Poor/Fair	0.195	0.188	0.171	0.187
	(0.303)	(0.301)	(0.304)	(0.3)
PCG has family history of poverty	0.334*	0.325*	0.334*	0.326*
	(0.186)	(0.185)	(0.185)	(0.184)
Rural dweller (REF: Urban)	-0.037	-0.052	-0.048	-0.046
	(0.138)	(0.138)	(0.138)	(0.138)
English is native language?(Yes=1)	-0.239	-0.235	-0.224	-0.253
	(0.242)	(0.244)	(0.242)	(0.244)
Maternity leave (Paid), 1=DIDN'T take	0.006			
	(0.207)			
Maternity leave(Unpaid), 1=DIDN'T take		0.274**		
		(0.131)		
Maternity (Annual lv), 1=DIDN'T take			0.161	
			(0.135)	
1b.Maternity leave(Unpaid), 1=DIDN'T take				0
				(.)

2.Maternity leave(Unpaid), 1=DIDN'T take				0.169 (0.139)
1b.marital2#1b.matern_unpaid				0 (.)
1b.marital2#2o.matern_unpaid				0 (.)
2o.marital2#1b.matern_unpaid				0 (.)
2.marital2#2.matern_unpaid				0.867** (0.379)
Constant	17.338*** (1.981)	16.955*** (1.958)	17.072*** (1.952)	17.160*** (1.961)
N	3590	3586	3587	3586
F-test	0	0	0	0
AIC	18784	18758	18770	18754

* p<0.10, ** p<0.05, *** p<0.01

Greater difficulty making ends meet (change over time)

Difficulty making ends meet has increased over time

	1
endsmeet_chgb	
1b.marital2	1.000 (.)
2.marital2	0.966 (0.084)
3.marital2	1.219* (0.139)
1.inc_quintiles_w1	0.754*** (0.080)
2.inc_quintiles_w1	0.780*** (0.073)
3.inc_quintiles_w1	0.879 (0.075)
4.inc_quintiles_w1	1.081 (0.083)
5b.inc_quintiles_w1	1.000 (.)
1.education_w1	0.846 (0.170)
2b.education_w1	1.000 (.)
3.education_w1	0.916 (0.064)
4.education_w1	0.863* (0.069)
5.education_w1	0.827** (0.079)
welfdep	0.651*** (0.078)
Improved education level w1->w2	1.018 (0.079)
UC_M	0.995 (0.136)
UC_S	1.000 (0.213)
S_UM	0.965 (0.210)
PCG Age at w1	1.005 (0.006)
PCG 'doesn't get enough help'	1.150* (0.091)
Crisis Pregnancy	0.768** (0.080)
Num of children in hhd (w2)	1.036 (0.029)
Drank alcohol while pregnant	1.023 (0.066)
Smoked while pregnant	1.219** (0.095)
Had Complications in Pregnancy	0.980 (0.053)
Disability/Chronic Illness	1.028 (0.088)
PCG Health is Poor/Fair	0.931 (0.109)
PCG has family history of poverty	0.976 (0.066)
Rural dweller (REF: Urban)	1.093 (0.060)
English is native language?(Yes=1)	1.131 (0.095)
Constant	0.622** (0.140)
N	8523
F-test	0.000
AIC	11585
ll	-5764.253

* p<0.10, ** p<0.05, *** p<0.01

Transition into welfare receipt over time

Transition into welfare receipt over time

	1
welf_chg	
1b.marital1	1.000 (.)
2.marital1	1.663*** (0.197)
3.marital1	3.068*** (0.507)
1b.inc_quintilesw1	1.000 (.)
2.inc_quintilesw1	0.625*** (0.075)
3.inc_quintilesw1	0.419*** (0.050)
4.inc_quintilesw1	0.274*** (0.034)
5.inc_quintilesw1	0.189*** (0.027)
1.education_w1	0.841 (0.242)
2b.education_w1	1.000 (.)
3.education_w1	0.686*** (0.061)
4.education_w1	0.495*** (0.053)
5.education_w1	0.458*** (0.062)
Improved education level w1->w2	0.908 (0.094)
UC_M	0.750 (0.146)
UC_S	1.556 (0.443)
S_UM	0.790 (0.234)
PCG Age at w1	0.971*** (0.008)
PCG 'doesn't get enough help'	1.080 (0.122)
Crisis Pregnancy	1.054 (0.144)
Num children in hsd at w1	1.000 (0.041)
Drank alcohol while pregnant	0.911 (0.084)
Smoked while pregnant	1.291** (0.137)
Had Complications in Pregnancy	1.117 (0.085)
Disability/Chronic Illness	1.208 (0.147)
PCG Health is Poor/Fair	1.365** (0.214)
PCG has family history of poverty	1.171* (0.109)
Rural dweller (REF: Urban)	1.145* (0.087)
English is native language?(Yes=1)	0.774** (0.084)
Constant	2.785*** (0.792)
N	6808
F-test	0.000
AIC	6778
ll	-3362.116

* p<0.10, ** p<0.05, *** p<0.01

Model of being a non-working (non-active) OPFP recipient

	o2
opfp_nonwork	
1.inc_quintiles_w2	25.744*** (13.860)
2.inc_quintiles_w2	15.183*** (8.113)
3.inc_quintiles_w2	7.339*** (4.078)
4o.inc_quintiles_w2	1.000 (.)
5b.inc_quintiles_w2	1.000 (.)
1.education_w2	1.371 (0.561)
2b.education_w2	1.000 (.)
3.education_w2	0.793 (0.133)
4.education_w2	0.305*** (0.092)
5.education_w2	0.260** (0.149)
o.UC_M	1.000 (.)
UC_S	3.680*** (1.019)
S_UM	0.574 (0.208)
PCG Age (w2)	0.902*** (0.016)
PCG 'doesn't get enough help'	1.764*** (0.384)
Crisis Pregnancy	2.048*** (0.365)
Num of children in hhd (w2)	0.956 (0.073)
Drank alcohol while pregnant	1.018 (0.204)
Smoked while pregnant	1.558*** (0.242)
Had Complications in Pregnancy	1.016 (0.160)
Disability/Chronic Illness	0.970 (0.214)
PCG Health is Poor/Fair	1.663** (0.418)
PCG has family history of poverty	1.274 (0.215)
Rural dweller (REF: Urban)	0.585*** (0.089)
English is native language?(Yes=1)	1.522* (0.353)
Constant	0.093*** (0.073)
N	6602
F-test	0.000
AIC	2409
ll	-1182.723

* p<0.10, ** p<0.05, *** p<0.01

Change over time in OPFP, Education and Work

	EducChg	WorkTrans
main		
1b.marital1	1.000 (.)	1.000 (.)
2.marital1	0.827 (0.101)	0.906 (0.142)
3.marital1	0.888 (0.146)	0.610** (0.127)
1b.inc_quintiles_w1	1.000 (.)	1.000 (.)
2.inc_quintiles_w1	1.091 (0.136)	0.898 (0.135)
3.inc_quintiles_w1	1.544*** (0.203)	0.862 (0.129)
4.inc_quintiles_w1	1.838*** (0.260)	0.439*** (0.075)
5.inc_quintiles_w1	1.767*** (0.280)	0.376*** (0.076)
1.education_w1	2.801*** (0.558)	0.203*** (0.098)
2b.education_w1	1.000 (.)	1.000 (.)
3.education_w1	0.295*** (0.027)	1.094 (0.139)
4.education_w1	0.327*** (0.035)	1.498*** (0.226)
5o.education_w1	1.000 (.)	1.468** (0.259)
Transitioned into OPFP receipt w1->w2	1.400* (0.253)	
PGC was employed at w1	1.234** (0.110)	
UC_M	1.268 (0.264)	1.297 (0.354)
UC_S	0.904 (0.252)	0.833 (0.306)
S_UM	1.483 (0.397)	1.701 (0.595)
PCG Age at w1	0.998 (0.009)	1.004 (0.010)
PCG 'doesn't get enough help'	1.389*** (0.162)	1.164 (0.173)
Crisis Pregnancy	1.308** (0.174)	1.174 (0.197)
Num children in hhd increased w1->w2	0.952 (0.070)	0.662*** (0.066)
Num children in hsd at w1	0.950 (0.041)	0.835*** (0.047)
Drank alcohol while pregnant	1.133 (0.111)	1.154 (0.132)
Smoked while pregnant	0.786** (0.085)	0.851 (0.119)
Had Complications in Pregnancy	0.983 (0.079)	0.887 (0.090)
Disability/Chronic Illness	1.034 (0.126)	0.990 (0.146)
PCG Health is Poor/Fair	0.770 (0.125)	1.025 (0.207)
PCG has family history of poverty	0.974 (0.093)	0.760** (0.096)
Rural dweller (REF: Urban)	0.926 (0.073)	1.100 (0.109)
English is native language?(Yes=1)	0.578*** (0.064)	0.982 (0.133)
Improved education level w1->w2		1.326** (0.181)
OPFP recipient at w2		1.495* (0.327)
Constant	0.478** (0.143)	0.120*** (0.047)
N	7376	8564
F-test	0.000	0.000
AIC	6893	4715
R2		

* p<0.10, ** p<0.05, *** p<0.01

www.treoir.ie
Email: info@treoir.ie
LoCall: 1890 252 084

ISBN: 978-0-9513120-1-8

treoir
information for unmarried parents


Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

an clár um
thoirchis ghéarchéime
crisis pregnancy programme

