



**Growing Up  
in Ireland**  
National Longitudinal  
Study of Children



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**DEVELOPMENT FROM BIRTH TO THREE YEARS**

**INFANT COHORT**



**REPORT 5**



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National Longitudinal Study of Children

## **DEVELOPMENT FROM BIRTH TO THREE YEARS**

James Williams, Aisling Murray, Cathal McCrory, Sinéad McNally

September 2013

The views expressed in this report are those of the authors and do not necessarily reflect the views of the funders or of either of the two institutions involved in preparing the report.



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agus Gnóthai Óige  
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## EXECUTIVE SUMMARY

*Growing Up in Ireland* is the national longitudinal study of children. Its core objectives include describing the children of Ireland, looking at how early experiences affect later outcomes and providing an evidence-base that can be used to inform child and family policies. It has two cohorts of children. The first is referred to as the *Infant Cohort* and is based on just over 11,100 children and their families. The families in this cohort were first interviewed between September 2008 and April 2009, when the Study Children were nine months old; a second interview took place between December 2010 and June 2011, when they were three years of age. It is these 9,793 children who are the subject of this report.

This report, and the *Growing Up in Ireland* study more generally, draws on Bronfenbrenner's model (e.g. 1979) of the individual as developing within a series of contexts that vary in the strength of their influence, as well as interacting with each other. For example, parents (within the family context) control many of the key aspects of the child's everyday life but their parenting decisions and capacity may in turn be affected by the wider economic climate.

The broad picture of the Study Children at three years of age presented in this report focuses first on the child's outcomes and well-being before considering three of the more influential contexts (parenting, childcare and financial circumstances) in which their development is taking place.

## OUTCOMES

*Growing Up in Ireland* focuses on child outcomes in three main areas:

- Physical health and development
- Social/emotional/behavioural well-being
- Educational achievement and intellectual capacity

This report looks at how the children are faring in these areas at age three years, and how in some instances there are links between their current well-being and circumstances at the time of the interview at nine-months-old. The following bullet points summarise some key findings in relation to child outcomes under these headings.

### Physical Development, Growth and Nutrition (Chapter 2)

- Children typically took their first unsupported steps between 12 and 13 months. By the age of three years, how the child spent their free time was important for motor skills, but early factors such as low birth weight were still influential.
- Most three-year-old children were able to use a pencil and play with small objects such as jigsaw pieces. Having someone at home to engage the child in activities that required fine motor skills such as painting and drawing appeared to foster these abilities.
- The average Irish three-year-old stands 96.2 centimetres tall and weighs 15.6 kilograms. Boys were taller and heavier on average than girls.
- A quarter of all three-year-old children were overweight or obese.
- There was already evidence of a social gradient in diet with children of less-educated mothers more likely to have consumed energy-dense food like hamburgers and crisps, but less likely to have eaten fresh fruit or vegetables, in the 24 hours preceding the interview.

### Health, Illness and Injuries (Chapter 3)

- The vast majority of the three-year-old children were reported to be in good health. Almost 98 per cent were described as *very healthy* or *healthy with a few minor problems* by their parents.
- Although there were no significant differences in children's health at time of birth, by three years of age

children from the least advantaged social class backgrounds were less likely to be rated as *very healthy* (67%) compared with children from other class backgrounds (around 76%).

- Almost 16 per cent of three-year-olds were reported as having a longstanding illness, disability or other ongoing health condition. Respiratory illnesses such as asthma were the most commonly reported illness type.
- Children with a chronic illness were nearly twice as likely to be classified as having behavioural problems at three years of age as those who did not have a chronic illness.
- The average rate of GP consultations was 2.6 per year. Children with a full medical card were significantly more likely to consult the GP, even controlling for children's health status.
- Almost two-thirds of all three-year-olds had received at least one course of antibiotics in the preceding 12-month period.
- A total of 16 per cent of three-year-olds had experienced an accident or injury that required hospital treatment or admission over their lifetime. Boys were more likely to have been injured than girls.

#### Socio-Emotional Development (Chapter 4)

- Three-year-olds in Ireland have relatively low levels of behavioural problems.
- Boys were more likely to be classified in the problematic range of behaviour problems than girls, as were children in socially disadvantaged groups.
- Parenting styles that were low in warmth and consistency, or high in hostility, were associated with more behaviour problems in children – although at least some of this relationship could be reciprocal.
- Infant temperament at nine months was associated with parent-reported problematic behaviours at three years.
- A difficult infant temperament at nine months is associated with parental stress at both nine months and three years.
- Increases in parental stress between interviews were associated with an increased likelihood of behavioural problems.

#### Cognition and Language Outcomes (Chapter 5)

- Girls performed measurably better on tests of cognitive ability than boys. Social gradients, particularly in relation to the educational level of the Primary Caregiver, were emerging strongly by the time the child was three years of age.
- Children who did not meet expected scores on developmental measures at nine months were at greater risk of lagging behind their peers at three years.
- Nearly one-in-five Primary Caregivers had concerns about their child's speech and language development. Boys were more likely to have problems than girls.
- Just under a third of children with a speech and language issue had received some treatment for it.

### CONTEXTS

In addition to child outcomes this report describes features of three central aspects of the developing child's everyday context. These are

- Parenting and the home
- Childcare
- Financial circumstances

The following bullet points summarise the key findings from the relevant chapters on these contexts.

#### Parenting and the Home Environment (Chapter 6)

- Eighty-five per cent of three-year-olds were in two-parent families. Almost all children (in one- and two-parent families) lived with their biological parent(s).

- Despite overall stability in the percentage of children living in one- and two-parent families, about equal proportions (approximately 2.5 per cent of children) made a transition from one- to two-parent and from two- to one-parent families between the ages of nine months and three years.
- There was considerable variation in levels of contact with non-resident parents, payment of maintenance and the relationship between resident and non-resident parent, with some very positive pictures emerging but an almost equal number of negative ones.
- The majority of parents were high in warmth and consistency and low in hostility in dealing with their child. However, parents under stress were more likely to be lower in warmth and consistency and higher in hostility compared to their less-stressed peers.
- Frequent use of aggressive and punitive techniques such as smacking or shouting was rare, but a proportion of parents resorted to these types of discipline at least occasionally: less than 1% said they used smacking *regularly or always* but 45% used it *rarely or now and again*.
- The relationship that the majority of parents had with the Study Child was high in positive aspects and low in conflict.
- Most three-year-olds were living in houses rather than apartments. Rented or local authority housing was more common among one-parent families, and they were more likely to report that the accommodation was unsuitable for their needs.

#### Childcare and Grandparents (Chapter 7)

- Half of the children in *Growing Up in Ireland* at age three were in some form of non-parental childcare. Over a quarter of three-year-olds were cared for in a childcare centre, 11 per cent by a relative and the remaining 12 per cent by a non-relative in a home-based setting.
- The average time spent in childcare was 23 hours per week. Children cared for by non-relative childminders spent the most time on average in childcare. More than 60 per cent of relatives who provided care were not paid for doing so.
- Parents who were working and those with higher educational qualifications and from more advantaged social class backgrounds were more likely to be availing of non-parental childcare for their three-year-old.
- Parents were typically satisfied with the facilities and care provided.
- Nearly all parents were planning to avail of the Free Pre-School Year.
- Two in five children were registered or enrolled with a primary school. There was a strong socio-economic patterning to school registration: parents from more affluent and educated backgrounds were more likely to have registered their child with a primary school.
- The vast majority of parents reported regular contact with the child's grandparents. Grandparents provided a significant amount of regular childcare as well as financial and babysitting support for their grandchildren.

#### Economic and Financial Circumstances (Chapter 8)

- Just over half (54 per cent) of the mothers of three-year-olds worked outside the home, with a further 37 per cent being engaged in home duties / looking after the family.
- Mothers who worked outside the home did so, on average, for 29 hours per week.
- Substantial minorities of parents who worked outside the home appeared to experience work-life imbalances. Unsurprisingly, the extent of these pressures was related to the number of hours worked.
- As might be expected, there were substantial variations in income according to social class and educational attainment.
- There was a big increase in the percentage of families who were experiencing difficulties in making ends meet between the interviews at nine months and those at three years, reflecting the serious recession in Ireland since 2008.

### POLICY IMPLICATIONS

Finally, this report highlights some of the major policy implications arising from the most recent findings. These include:

- Evidence of the early emergence of an overweight and obesity problem among three-year-olds
- The appearance of a social gradient in relation to a variety of health outcomes among young children
- A potential role for early interventions in relation to cognitive and language development
- The strong association between infant temperament and levels of parental stress and the importance this is likely to have for the parent-child relationship in the future
- The key role that non-parental childcare plays in the everyday life of many young children and how this can be optimised in terms of accessibility and the promotion of child well-being.

### FUNDING

*Growing Up in Ireland* is wholly funded by the Department of Children and Youth Affairs, in association with the Department of Social Protection and the Central Statistics Office. The study is being carried out by a consortium of researchers led by the Economic and Social Research Institute (ESRI) and Trinity College Dublin (TCD).

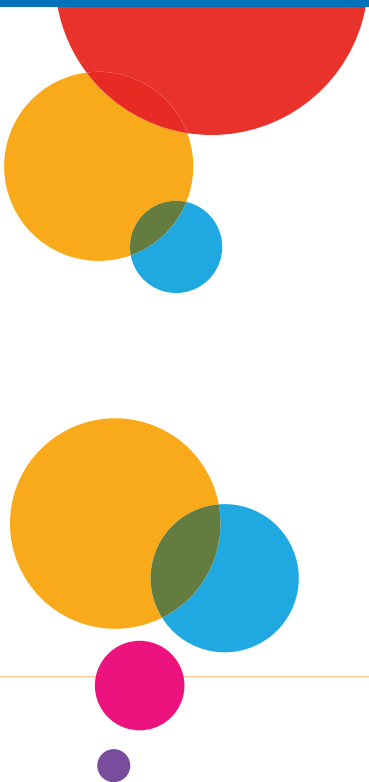






# Chapter 1

## INTRODUCTION AND BACKGROUND



## 1.1 INTRODUCTION

This report presents a first descriptive analysis of the findings from the second round of data collection with the Infant Cohort of *Growing Up in Ireland*, when the children were three years old. It provides a comprehensive picture of three-year-olds in Ireland today and describes how they are faring in various aspects of their lives. It also looks at how they have changed and developed in some key areas since they and their families were first recruited into *Growing Up in Ireland* at nine months of age.

The first three years of life are extremely important for the developing child and are marked by a number of very significant developmental milestones.<sup>1</sup> In terms of physical development by three years of age, the child's rate of growth slows compared to the rapid development which occurred in infancy. In general, major advances in gross and fine motor skills have been made. Three-year-olds are usually able to walk and run in a straight line, although their level of coordination may prevent them from turning or stopping quickly while running. They are able to walk backwards and run with ease; almost all three-year-olds are able to walk up stairs placing one foot on each step, in the manner adopted by adults (Hansen and Joshi, 2007). Most three-year-olds can catch a ball with both arms extended in a horizontal position and kick a ball, often without great accuracy. By three most children are able to hold a pencil or crayon in a pincer grip between thumb and forefinger (in contrast to the whole-hand grasp typical of infancy). They can build a small tower from blocks and draw a cross and a circle. They are generally able to dress themselves, possibly with some minor help with buttons and zips.

The physical health of three-year-old children is usually quite good, although research from the UK has highlighted issues with asthma, sight, hearing and ear infections for this age-group (Hansen and Joshi, 2007) in addition to the problem of overweight/obesity (Cole et al., 2000). In terms of emotional well-being, three-year-olds will usually have begun to exercise control of their feelings and behaviour and to regulate their emotions (with or without the support of others). They will better understand instructions and will usually display greater patience than their younger peers. They will have developed substantially in terms of social competence and will have begun to spend more time playing with other children, having become somewhat less dependent on adults.

This report presents findings from the first large-scale, nationally representative sample of children in Ireland at this critical stage in their lives, with a view to assessing how three-year-olds are growing and developing relative to their peers elsewhere.

## 1.2 BACKGROUND AND OBJECTIVES OF *GROWING UP IN IRELAND*

The main objectives of *Growing Up in Ireland* are to describe the lives of children, and to establish what is typical and normal, as well as what is atypical and problematic. Therefore, the study provides a strong statistical evidence-base for researchers, policy-makers and practitioners, and contributes substantially to the development of effective and responsive policies and services for children and their families.

*Growing Up in Ireland* has two cohorts of children. The first is referred to as the Infant Cohort and is based on just over 11,100 children and their families. The families in this cohort were first interviewed between September 2008 and April 2009, when the Study Children were nine months old; a second interview took place between December 2010 and June 2011, when they were three years of age. It is these children who are the subject of this report.

The second cohort is an older group of children, referred to as the Child Cohort, and is based on just over 8,500 children, their families and teachers. Interviews first took place with the Child Cohort when the children were

<sup>1</sup> For a review of the literature in this area and *Growing Up in Ireland's* contribution to the issues involved, see Greene et al. (forthcoming).

nine years old, with a follow-up interview when they were aged thirteen. These children and their families are the subject of a parallel series of reports from the study.

***Growing Up in Ireland*** focuses on child outcomes in three main areas:

- Physical health and development
- Social/emotional/behavioural well-being
- Educational achievement and intellectual capacity

The ***Growing Up in Ireland*** study has nine specific objectives, which are to:

1. Describe the lives of Irish children and to establish what is typical and normal as well as what is atypical and problematic
2. Chart the development of Irish children over time and examine their progress and well-being at critical periods from birth to adulthood
3. Identify the key factors that, independently of others, most help or hinder children's development
4. Establish the effects of early child experiences on later life
5. Map dimensions of variation in children's lives
6. Identify the persistent adverse effects that lead to social disadvantage and exclusion, educational difficulties, ill health and deprivation
7. Obtain children's views and opinions on their lives
8. Provide a bank of data on the whole child
9. Provide evidence for the creation of effective and responsive policies and services for children and families<sup>2</sup>

With these objectives in mind, at each data wave ***Growing Up in Ireland*** records details on the key indicators of child well-being and development. As well as a focus on 'typical' or 'average' child development, the study also identifies factors which, operating singly or in combination, are associated with positive and negative outcomes. This can be used to facilitate the targeting of resources for children and families who are most in need or at risk and, consequently, to increase the efficiency and efficacy of policy and practice for positive child development.

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### 1.3 CONCEPTUAL FRAMEWORK FOR *GROWING UP IN IRELAND*

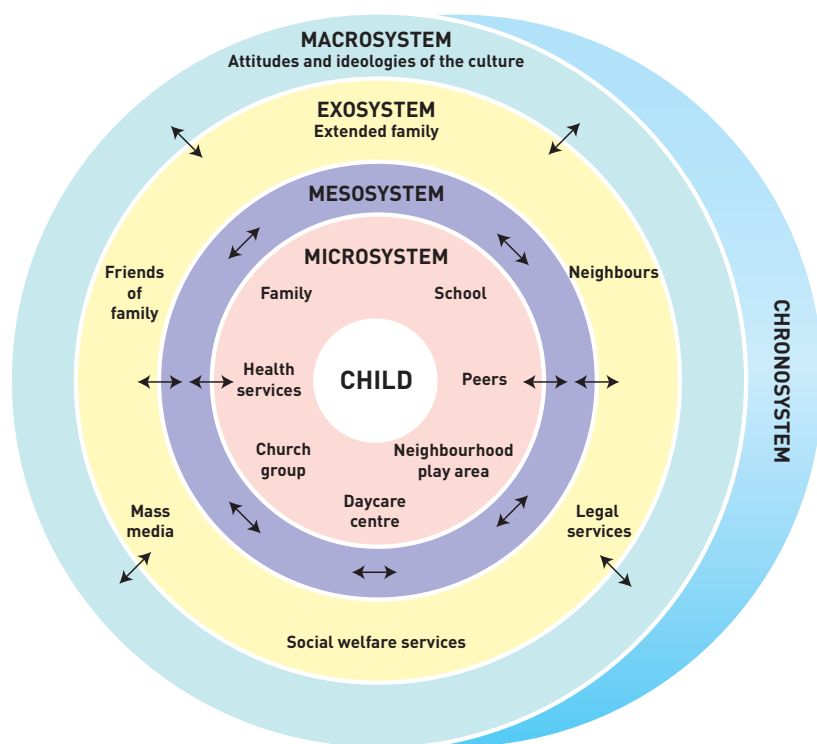
The conceptual framework adopted by ***Growing Up in Ireland*** emphasises the importance of the environments and contexts within which children live (for a full description, see Greene et al., 2010). The conceptual basis of the study incorporates a model of the child's relationship to the world outlined by Bronfenbrenner in 1979 and further developed in later years. Bronfenbrenner's work offered a conceptualisation of the child's ecology as a multilayered set of nested and interconnecting environmental systems, all of which influence the developing

<sup>2</sup> Further information on the background to, and aims of, the ***Growing Up in Ireland*** study can be found in the document ***Growing Up in Ireland: Background and Conceptual Framework***, available at [www.growingup.ie](http://www.growingup.ie)

child, but with varying degrees of directness. The perspective has evolved since its early inception and today acknowledges the role of the child's own characteristics, including biological factors, in the overall development of the person; hence the model is now referred to as the *bioecological* model (Bronfenbrenner & Morris, 2006).

In the bioecological model, the three-year-old is located at the centre of a set of concentric rings which represent the ecology of human life (Bronfenbrenner, 1979; 2001). These systems are layered in terms of their influence on child development. In Figure 1.1 these systems or layers are represented as concentric circles, extending outwards from the individual child and his or her personal characteristics. The child's inherent characteristics, temperament and development status at three years of age are at the centre of the model; these include gross and fine motor skills, behaviour, emotional regulation, attachment and health status. Parents (and family members such as siblings and grandparents, if present) are the most influential part of the child's early development, as are, for example, childcare arrangements and pre-school. As these family relationships involve the most direct contact with the child, they are represented in the circle immediately surrounding him/her (the microsystem).

**Figure 1.1: Bronfenbrenner's model of the child's development**



Source: Adapted from Garbarino (1982)

Parents and children also have relationships outside the household, for example in the workplace, pre-school, mother-and-toddler groups, local shops/services and religious gatherings. It is these relationships that help to connect the household to the wider community. To Bronfenbrenner, this illustrates the intimate relationship between the *microsystem*, the face-to-face interactions which the child experiences, and the *mesosystem*, which encompasses the interactions among contexts in the microsystem. Examples of mesosystem processes include how families interact with non-parental childcare providers and pre-school, how work-life balance affects parenting, and how closely the family interacts with extended kin or neighbours.



Outside the mesosystem in Bronfenbrenner's model sits the *exosystem*. This comprises the structures, institutions and settings which, while not in direct contact with children, exert an important influence on their quality of life and outcomes. Examples of influential elements in the exosystem include government departments and policies, which have an important impact on children's well-being in the first few years of life, through the systems they control – for example, whether access to GP care is free (via a medical card) or has to be paid for, immunisation programmes, social welfare entitlements, local authority housing provision – and, more indirectly, through initiatives and policies related to issues such as breastfeeding, parental leave, work-life balance and family-friendly labour-market policies. A government policy likely to have a significant impact on this cohort is the Free Pre-School Year scheme, which was introduced in January 2010. This policy aims to improve access to formal pre-school facilities and the children in the *Growing Up in Ireland* Infant Cohort will be among the first to benefit from it.

The next level in Bronfenbrenner's schema is the *macrosystem*. This consists of the culture-specific ideologies, attitudes and beliefs that shape society's structures and practices, as well as economic and political systems. Such systems may be expected to affect three-year-olds through attitudes to working mothers, to gender roles in the home, and to the rights of children generally.

The passing of time, and time as a context for development, are important in Bronfenbrenner's model (the *chronosystem* in Figure 1.1). Time has two aspects: the first is the individual's lifetime. The second is the historical time or period effects associated with any particular point in history. Period effects create a set of unique circumstances for the members of a given cohort, and include the particular socio-cultural context at any given point in time. In 2011 (when the three-year-olds and their families were interviewed) a strong period effect was the economic recession which Ireland had been experiencing for just over three years. Another factor in the *chronosystem* is the patterning of events and transitions throughout the child's life. These might include changing family structures, divorce, separation, the timing of a mother's return to work outside the home, and so on.

Together, these four levels (and the linking mesosystem) provide a comprehensive framework to approach the wide range of factors that may influence the experiences and well-being of a child as s/he develops from birth to three years of age and beyond.

## 1.4 DATA AND METHODOLOGY

The second wave of interviews with the Infant Cohort took place between December 2010 and July 2011, when the children were three years of age. A total of 11,134 nine-month-olds and their families participated in the first sweep of data collection with this cohort; interviews were carried out between December 2007 and May 2008. These children and their families constituted the target sample for the second round of the study.

### 1.4.1 RESPONSE RATE AND INTER-WAVE ATTRITION

Table 1.1 summarises response rates in Wave 2. Questionnaires were successfully completed with 9,793 families. In the course of fieldwork a total of 425 families were identified as having moved outside the country, and so were excluded from the valid sample for interview. A total of 349 families could not be contacted during fieldwork. Many of these families may have moved outside the country, though this could not be definitively verified in the course of fieldwork. On this basis the response rate at the second round of interviewing was just over 91 per cent.

**Table 1.1: Response rates in Wave 2, Infant Cohort at three years**

Response outcome, Wave 2	Target sample	Response rate based on valid sample
Total target sample, Wave 2	11,134	—
No longer resident in Ireland*	425	
<b>Total valid sample</b>	<b>10,709</b>	
of which:		
Completed	9,793	91.4%
Refused	494	4.6%
Could not contact	349	3.3%
Other	73	0.7%
<b>Total valid sample</b>	<b>10,709</b>	<b>100.0</b>

Note: Where permission to do so had been secured from the family at the first round of interviews, an attempt was made to track all families who moved or could not be contacted at Wave 2, using the Child Benefit Register.

\* Includes a small number of children who had deceased.

Response rates varied somewhat according to background characteristics of the families, with the rates generally being lower among more socially disadvantaged groups. To illustrate, Table 1.2 provides a breakdown of Wave 2 response rates classified according to Primary Caregiver's educational attainment at the first round of the survey. The figures show response running from a low of 85 per cent among families with Junior Certificate education or less to a high of 93.9 per cent among those with third-level education. Comparable trends were apparent using a range of measures of social advantage/disadvantage, such as income and social class.

**Table 1.2: Response rates in Wave 2, classified by Primary Caregiver's education at Wave 1**

Level of education attainment at Wave 1	Completed	Refused	Could not contact*	Other
Lower Secondary or less	85.0	7.4	6.6	1.0
Leaving Certificate or equivalent	88.8	5.8	4.7	0.7
Non-degree Certificate / Diploma	92.6	4.5	2.4	0.5
Degree or higher	93.9	3.2	2.2	0.7
Total (of valid n)	91.4	4.6	3.3	0.7

\* Includes address vacant, demolished, etc.

#### 1.4.2 INTERPRETING THE DATA

*Growing Up in Ireland* has a fixed panel design. The design is fixed in the sense that the sample was adjusted only to take account of children who had been definitively identified as having left Ireland to live elsewhere or who had deceased between the two rounds of interviewing. Clearly, some three-year-olds resident in Ireland at the time of the second interview had not been resident when the first interview took place. These children who moved to Ireland between the first and second round of the survey are not included in the sample.<sup>3</sup> On this basis, the sample at the second round of interviewing with the Infant Cohort represents three-year-olds who were resident in Ireland at nine months of age and who continued to be resident in the country when they were three. It is estimated that 70,500 three-year-olds were living in Ireland at both nine months and three years of age. This compares with the total population of 71,457 three-year-olds recorded in the Census of Population which was carried out on 10th April 2011, exactly at the mid-point of fieldwork with the three-year-olds.

<sup>3</sup> Neither, of course, are they included in the population which it represents or to which it is reweighted.

### 1.4.3 REWEIGHTING THE DATA

All the data presented in this report were reweighted or statistically adjusted to ensure that they are representative of the population, as defined in the previous section. The reweighting was implemented in two steps.<sup>4</sup> The first step adjusted for children who were living in Ireland at Wave 1 but who had moved abroad by Wave 2<sup>5</sup> – the ‘exits’ from the system. The second step accounted for attrition between interviews and addressed the issue of differential response (referred to in Section 1.4.1). Two types of variables were used in this adjustment. The first included those used in the original reweighting of the data at Wave 1 of the study. These included:

- family structure <sup>a</sup>
- age of mother <sup>a</sup>
- principal economic status of mother <sup>a</sup>
- principal economic status of father <sup>a</sup>
- family social class <sup>a</sup>
- mother’s education <sup>a</sup>
- nature of tenure of the household <sup>a</sup>
- child’s gender by region <sup>a</sup>
- mother’s marital status <sup>b</sup>
- mother’s residency status <sup>b</sup>
- mother’s region of birth <sup>b</sup>

<sup>a</sup> based on population figures extracted from the Census of Population, 2006

<sup>b</sup> as extracted from the Child Benefit Register

In addition, a number of variables which were recorded in the first-round survey were also used to control for attrition. These were identified as having been significantly related (in a statistical sense) to non-response patterns at Wave 2, and included:

- whether or not the Study Child was ever breastfed
- whether or not the Primary Caregiver (see definition, Section 1.4.4 below) smoked at Wave 1
- number of hours worked outside the home by the Primary Caregiver at Wave 1
- Primary Caregiver’s ethnic background
- length of time living in local area
- size of area in which household was situated (measure of degree of urbanisation)
- Primary Caregiver’s depression status
- Primary Caregiver’s BMI status
- household income quintile

The final Wave 2 weight used for analysis was based on the combination of the Wave 1 weight and the adjustments to account for socially determined inter-wave attrition and migration outside the country.

All the figures presented in this report are based on the statistically grossed or reweighted data. The findings discussed in the body of the text are statistically significant at the 95 per cent level. This means that when the text notes that two figures are different, one can be sure 95 times in 100 that the differences in question are real and not a function of the sample or sample design. A 95 per cent error bar has been included in charts to facilitate the reader in identifying situations in which the differences between subgroups is statistically significant at this level. The reader should note that in a very large sample such as the Infant Cohort of *Growing Up in Ireland*, some of the differences reported are small, albeit statistically significant.

<sup>4</sup> The adjustment used was based on a minimum information-loss algorithm which fits population marginals in a regression framework to ensure that they produce estimates which match population totals. See, for example, Gomulka, 1994, 1992.

<sup>5</sup> This also included a small number of children who had deceased between the first and second rounds of interviewing.

#### 1.4.4 INFORMANTS AND QUESTIONNAIRES

The main informants in the Infant Cohort at three years were the child's Primary and Secondary Caregivers as well as the Study Child him/herself. As in previous rounds of the study, the Primary Caregiver was defined as the person who delivered most care to the Study Child and who was best placed to provide information about him/her. The Secondary Caregiver was the resident spouse or partner of the Primary Caregiver.

Questionnaires were administered by the interviewer to adult respondents.<sup>6</sup> In addition, a computerised self-completion questionnaire, which recorded more sensitive information, was filled out by the main caregiver(s) in the home. At three years of age the Study Child was directly involved (for the first time) in the interview process. Two cognitive tests from the British Ability Scales (BAS) were administered to the child by the interviewer. These were the Naming Vocabulary and Picture Similarities sub-scales. The weights of the child and adult caregiver(s) were also recorded as well as the height of the Study Children and that of Primary and Secondary Caregivers in cases where this was not available from the information collected at the first round of the survey.

### 1.5 BACKGROUND CHARACTERISTICS

To examine how children's lives vary in different socio-demographic contexts, the data were analysed throughout this report in relation to a relatively common set of background characteristics. These were, principally, family social class, family income, family type and Primary Caregiver's highest level of educational attainment. These family characteristics help to paint the picture of social and other variations in the lives of three-year-olds in Ireland today. These are described briefly below.

#### 1.5.1 FAMILY SOCIAL CLASS

The social class classification used by the Irish Central Statistics Office (CSO) was used to assign a social class code to both mother and father (where the latter was resident). This class classification is based on the respondent's occupation. In line with standard procedures, in two-parent families in which both partners were economically active outside the home, the *family's* social class was assigned on the basis of the higher of the two. A fourfold classification of family social class is used throughout this report: Professional/Managerial, Other Non-Manual/Skilled-Manual, Semi-skilled/Unskilled Manual and 'Never Worked' (i.e. validly no social class as no current occupation or previous occupation if unemployed or retired).

#### 1.5.2 FAMILY INCOME GROUP

To make meaningful comparisons across families in terms of their disposable income, household size and composition (number of adults and children) were taken into account to create an 'equivalised' family income.<sup>7</sup> The families were then divided into five equally sized groups, from highest to lowest in terms of their equivalised family income. Each group (or quintile) contains 20 per cent of three-year-olds and their families. Thus, throughout the report the lowest family income quintile refers to the 20 per cent of families at the bottom of the equivalised income distribution. The second lowest income group includes the families in the next 20 per cent of the income distribution and so on, up to the top income quintile which contains the 20 per cent of families with the highest equivalised income.

#### 1.5.3 FAMILY TYPE

A fourfold classification of family type, the same as used with Wave 1 data, is used throughout the report:

- one-parent, one child under 18 years
- one-parent, two or more children under 18 years
- two-parent, one child under 18 years
- two-parent, two or more children under 18 years.

<sup>6</sup> Computer-Assisted Personal Interviewing (CAPI) was used.

<sup>7</sup> To do this, the number of 'equivalised' adult members who were resident in the household was calculated, by assigning a weight of 1.0 to the first adult, 0.66 to all subsequent adults (and children over 14 years) and 0.33 to each child (aged 14 years or less). The total number of adult equivalents was then divided into the household's total disposable income to give the household's equivalised disposable income.



One- and two-parent families refer only to the number of resident caregivers/guardians. The terms do not refer to the relationship of the caregiver to the Study Child. Biological parents and other caregivers are included in the definition of one- or two-parent families although (as will be discussed in subsequent chapters) biological mothers and fathers are overwhelmingly the main caregivers of the children. The term 'children' in the classification of family type refers to all children under 18 years of age who were living in the household. These individuals were not necessarily siblings of the Study Child. Any sibling of the Study Child who was over 18 years of age and living in the household was not included as a child in this definition.

#### 1.5.4 HIGHEST LEVEL OF PRIMARY CAREGIVER'S EDUCATIONAL ATTAINMENT

Much of the international literature points to the important association between a Primary Caregiver's educational attainment and his/her child's development. Throughout the report, a fourfold classification of educational attainment is used, as follows:

- Lower Secondary or less (in the Irish system Junior Certificate or no formal education)
- Leaving Certificate
- Non-degree – not full degree status but a post-Leaving Certificate or Diploma (many of which qualifications will have been completed in a third-level institution)
- Degree or third level

## 1.6 STRUCTURE OF THE REPORT

The report provides the first insights into the lives of three-year-olds in Ireland as well as how key aspects of their lives have changed since they were nine months of age. In doing this it broadly follows the Bronfenbrenner model underlying the project, focusing in the first chapters on some of the core characteristics of the Study Child. Chapter Two discusses the child's physical development, growth and nutrition. This includes an analysis of their gross and fine motor skills, physical growth, height, weight and dietary quality. Chapter Three addresses issues related to the child's health, illness and injuries, including aspects of healthcare utilisation. Chapter Four describes the child's socio-emotional development and temperament, while Chapter Five presents a discussion of his/her cognitive and language development.

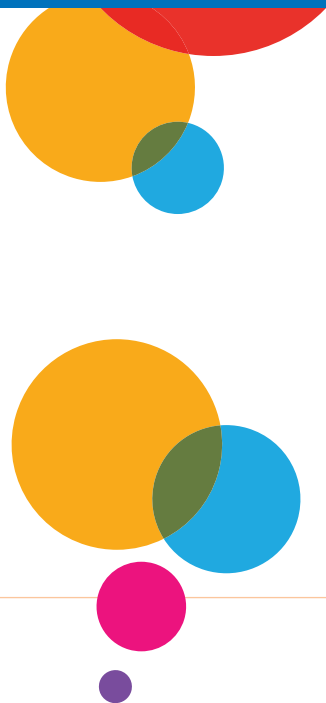
Chapters Six and Seven then address some of the more important contextual characteristics of the child's microsystem, including parenting and non-parental childcare, while Chapter Eight considers some of the broader conditions affecting three-year-olds, such as their parental, family and socio-economic circumstances. It also includes the effect of the recession that Ireland has experienced over recent years. Finally, Chapter Nine provides a brief summary of the main findings and their implications.





# Chapter 2

## PHYSICAL DEVELOPMENT, GROWTH AND NUTRITION AT THREE YEARS OF AGE



## 2.1 INTRODUCTION

Since the first interview with this cohort, the ‘infants’ have become ‘children’, with all that this difference entails in terms of their cognitive, social and physical skills and requirements. Regarding typical physical development between nine months and three years, children not only grow taller and heavier, but progress from sitting and standing up to running and climbing. The first part of this chapter, therefore, reviews how the children have developed in terms of their gross and fine motor skills, and how these are influenced by both earlier and current factors.

From infancy to three years, there were big changes in children’s diet, from a milk or ‘baby food’-based diet to something much closer to adult meals and drinks. However, this is also a time when issues begin to appear. The second part of this chapter will look not just at average height and weight for the three-year-olds but also consider those children who have an unhealthy weight. Finally, a brief overview of the child’s diet is provided, with suggestions on how the *Growing Up in Ireland* data could be used to inform this important policy issue.

## 2.2 GROSS MOTOR DEVELOPMENT

*The single most frequently reported (modal) age for a child taking their first steps was 12 months, and the mean age was just over 13 months, but there was considerable variation. By the age of three years, how the child spent their free time was important for motor skills, but early factors such as low birth-weight were still influential.*

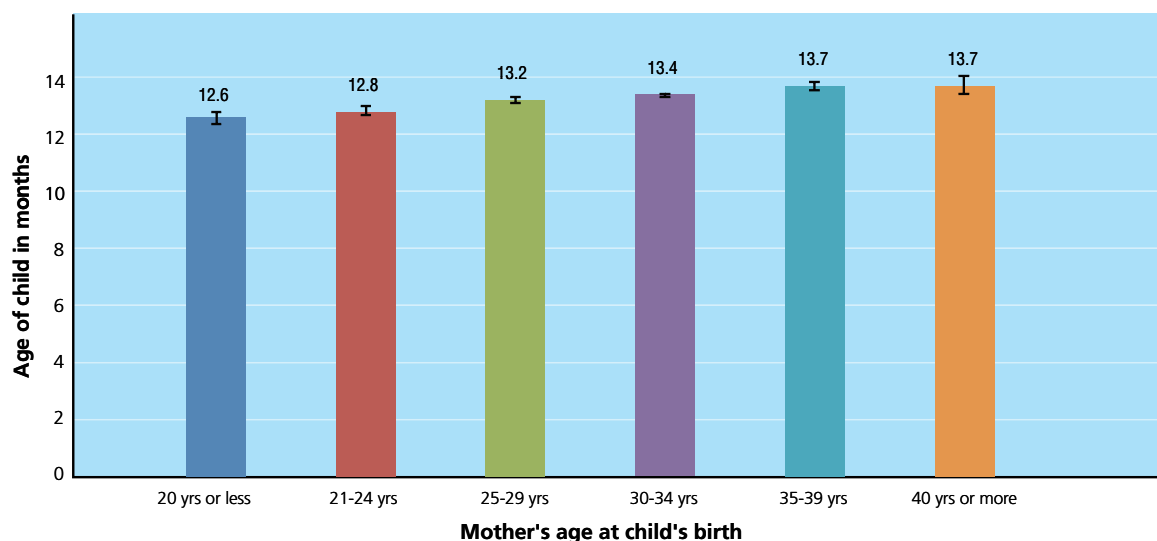
The areas of the brain relating to motor abilities are among those that increase most rapidly in the months immediately after birth (Karmel & Karmel, 1984). Gross motor development refers to the child’s ability to move around, use their arms and legs and maintain their balance. Development of these skills is important in facilitating the growing child’s need and desire to explore their environment, to seek out new interactions with people and things, to develop their independence and to play and run around. The pace of a child’s gross motor development may be influenced by both prenatal (e.g. Cheung, Yip & Karlberg, 2001; Pedersen, Henriksen & Olsen, 2010) and postnatal or contemporary factors (Venetsanou & Kambas, 2010).

### 2.2.1 FIRST STEPS

The first time a child takes steps unsupported is a major milestone for both parents and child. The age at which the *Growing Up in Ireland* children reached this milestone was reported by the Primary Caregiver at the three-year interview; the modal age (i.e. the single age most often reported) for a child’s first steps was 12 months – just over 19 per cent of children took their first unsupported steps at that age. There was, however, considerable variance, from as young as six months to just around the time of interview (36 months); hence the mean age was 13.3 months, and the median age (mid-point) was 13 months. A very small number of children had not taken their first steps by the time of the three-year interview.



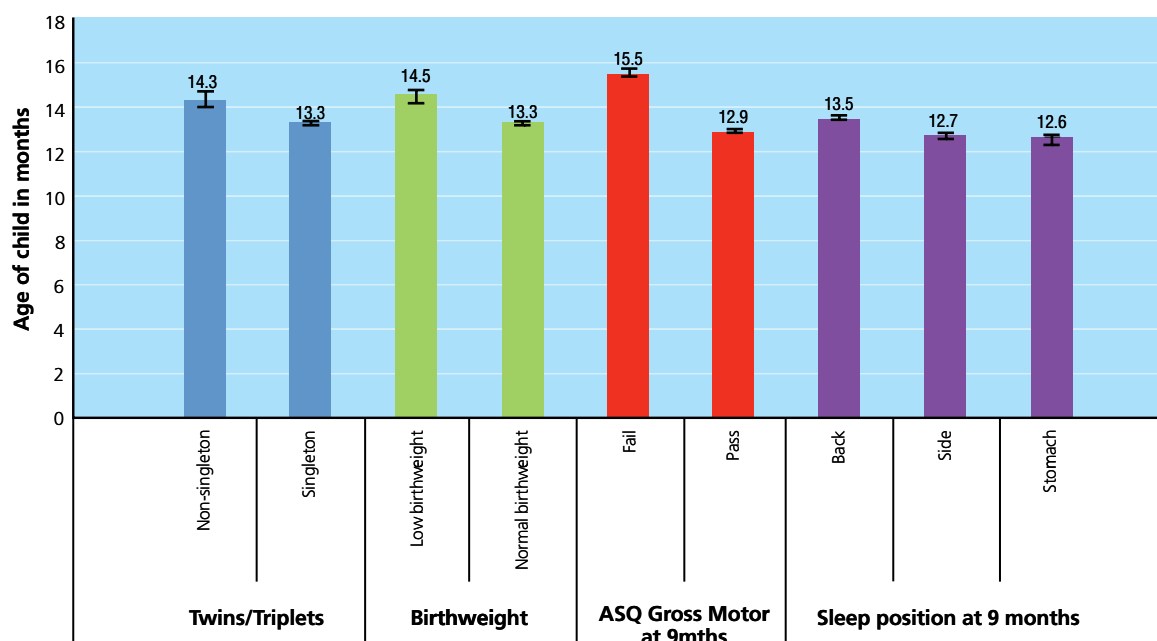
**Figure 2.1: Age child first took unsupported steps (in months), classified by Primary Caregiver's age at the child's birth**



Girls did not differ from boys in age of taking first steps (mean age 13.3 months for both). Children of Primary Caregivers born outside Ireland were reported to start walking a little earlier (12.8 months) than children of Primary Caregivers born in Ireland (13.5 months). Some of the biggest differences were observed in relation to Primary Caregiver's age, as illustrated in Figure 2.1. Children of the youngest Primary Caregivers (age 20 or less at the time of the child's birth) started walking just over a month earlier (12.6 months) than the children of Primary Caregivers who were over 40 when the child was born (13.7 months). There was also nearly a one-month difference between children who were part of a multiple birth (14.3 months) and those who were a singleton birth (13.3 months).

Children who had been born at low birth-weight (less than 2500g) took their first steps over a month later (14.5 months) than those born with normal weight (13.3 months), a difference which remained significant after adjustment for multiple births (see Figure 2.2). Following trends observed in other research (e.g. Davis, Moon, Sachs & Ottolini, 1998), children who had been placed on their backs to sleep as infants (the recommended position) took their first steps later on average (13.5 months) than those who had been placed on their stomach or side (12.6 and 12.7 months respectively).

**Figure 2.2: Summary of the effect of indicators measured at nine months on reported age that child took first unsupported steps (in months)**



When the Study Child was nine months of age the Primary Caregiver completed a developmental inventory known as the Ages and Stages Questionnaire (ASQ). This comprised five subscales on the child's development, including gross motor development. At three years of age it was found that some of the biggest differences in age of taking first steps were between those who had failed to pass the ASQ gross motor measure at the nine-month interview, and those who had passed. On average, children who had failed the ASQ gross motor measure as infants were 2.5 months later taking their first steps (15.5 months compared to 12.9 months). Figure 2.2 summarises this and other trends related to indicators measured at the nine-month interview.

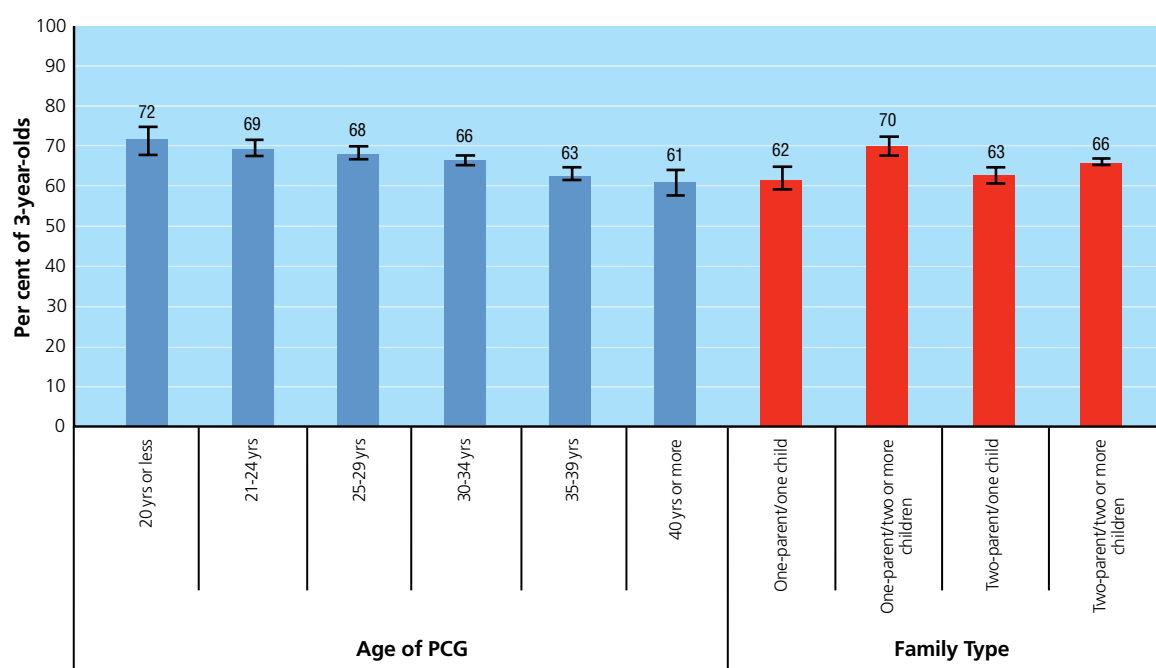
## 2.2.2 GROSS MOTOR MILESTONES AT AGE THREE YEARS

Three indicators of current gross motor development were recorded at the three-year interview in *Growing Up in Ireland*. First, the Primary Caregiver was asked to report whether or not the child was able to cycle a tricycle or similar vehicle; a distinction was made between being able to use the pedals properly and the child sitting on a tricycle and pushing it along with their feet. The other two indicators were observed by the interviewer. The child was asked to stand on one leg and (separately) to throw a ball overhand, with the interviewer recording whether or not the child was able to complete these tasks. As expected, most children were able to throw a ball overhand (95 per cent) and the majority were also able to stand on one leg (87 per cent). Only two-thirds of children (66 per cent) were reported to be able to pedal a tricycle.<sup>8</sup>

### 2.2.2.1 Socio-demographic differences

Boys did not differ from girls in their ability to throw a ball overhand (both 95 per cent) or pedal a tricycle (both 66 per cent). Girls were, however, a little more likely to be able to stand on one leg (88 per cent) than boys (86 per cent). There were few other differences between children along socio-demographic lines in regard to standing on one leg or throwing overhand, but there were differences in relation to the more difficult task of tricycle-peddalling. For example, the youngest Primary Caregivers were more likely to report that their child was able to ride a tricycle than the oldest, with an 11 percentage point difference between children in these two groups (Figure 2.3). It also appears that the ability to ride a tricycle was more common for children with siblings (also Figure 2.3).

**Figure 2.3: Percentage of three-year-olds able to pedal a tricycle according to age of the Primary Caregiver at child's birth and family type**



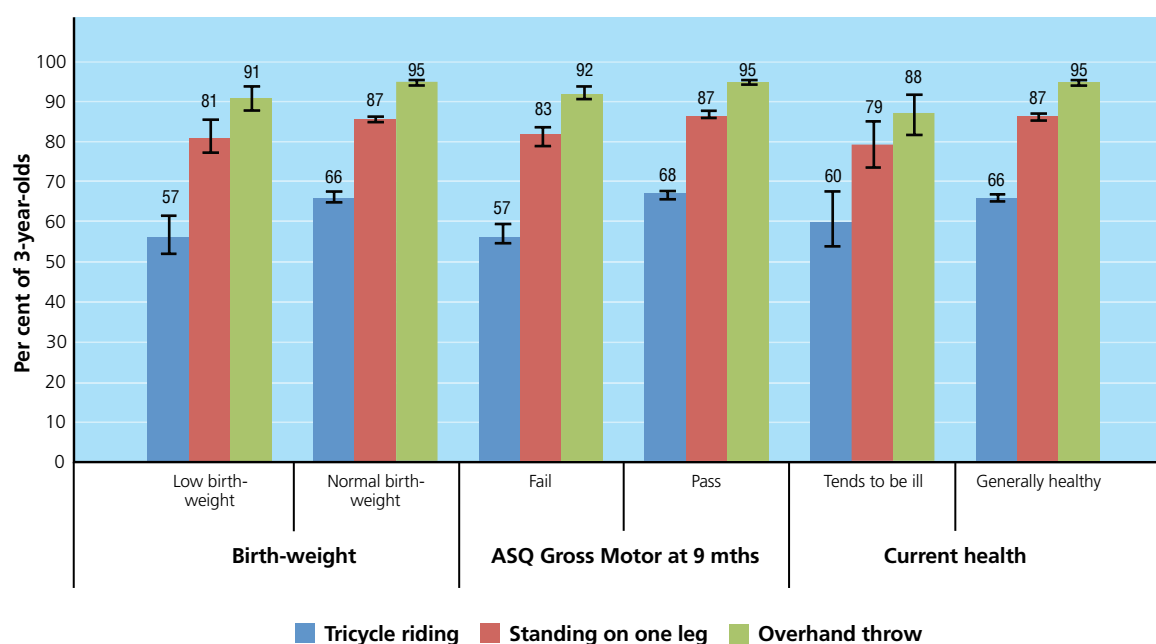
<sup>8</sup> These motor indicators were based on the advice given by the American Academy of Pediatrics to parents of 3-4 year-olds to seek professional advice if their child cannot ride a tricycle. (The authors recognise that three-year-old Study Children in *Growing Up in Ireland* are at the early end of this range.) The same set of indicators suggest that 3-4 year-olds should also be able to throw a ball overhand and stand on one leg. See <http://www.healthychildren.org/English/ages-stages/toddler/pages/Developmental-Milestones-3-to-4-Years-Old.aspx>



### 2.2.2.2 Early life characteristics and current health influence gross motor skills

Children who were born as twins or triplets were less likely to have achieved the pedalling (56 per cent) and overhand throwing (92 per cent) milestones than their singleton peers who had rates of 66 per cent and 95 per cent respectively on these particular milestones. Non-singleton and singleton children did not, however, differ significantly in terms of standing on one leg (82 per cent and 87 per cent respectively). As for age of taking first steps, children born with low birth-weight or who failed to reach the ASQ gross motor measure at nine months had lower rates of attainment on each of the three milestones (Figure 2.4). The contrast was most marked in relation to pedalling a tricycle. There was an 11 percentage point difference between passing and failing to reach the ASQ at nine months and a 9 percentage point difference between low and normal birth-weights.

**Figure 2.4: Contrasts in rates of attaining gross motor milestones at age three years according to low/normal birth-weight, pass/fail of ASQ infant gross motor measure and child's current health**

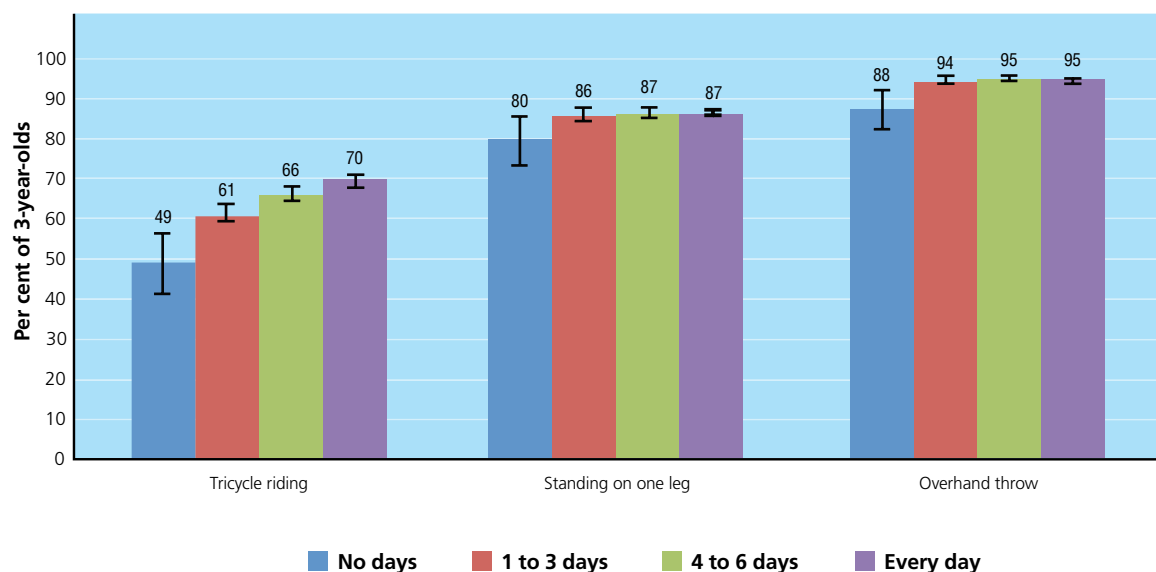


Perhaps unsurprisingly, the child's current health was a factor in his or her motor development. While only 2.3 per cent of children were described as being *sometimes quite ill* or *almost always unwell* at three years of age, as a group they were less likely to have reached gross motor milestones than their peers who were described as *healthy, no problems* or *healthy, a few minor problems* (although, statistical significance was sometimes marginal). As well as being less likely to pedal a tricycle (60 per cent compared to 66 per cent), the children with health issues were less likely to be able to stand on one leg (79 per cent compared to 87 per cent) or throw a ball overhand (88 per cent compared to 95 per cent).

### 2.2.2.3 Activities in the home

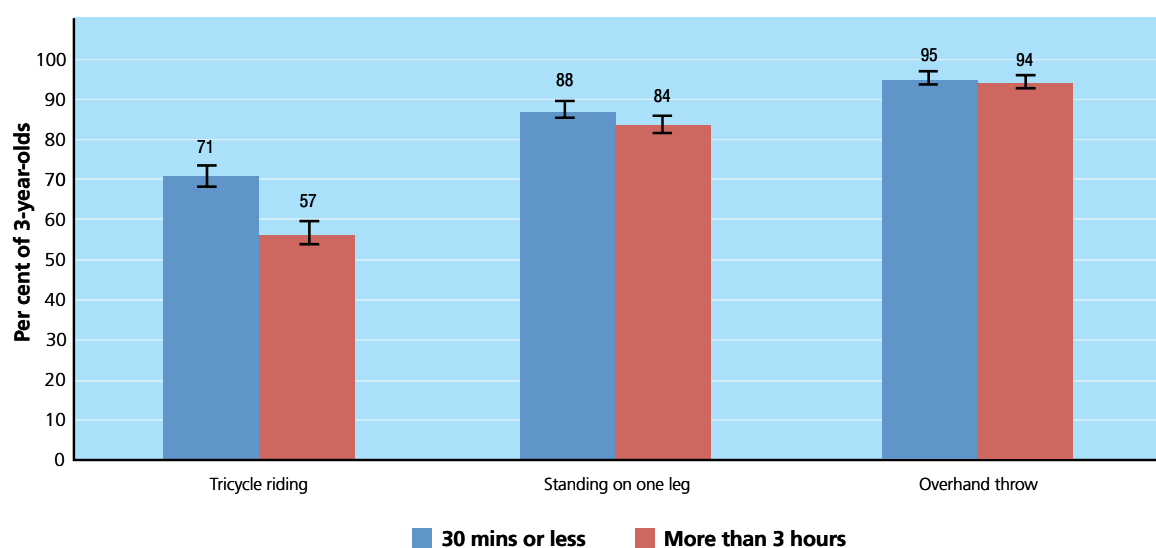
Children who played physically active games more often with someone at home tended to have better gross motor skills (Figure 2.5). This was particularly notable in relation to being able to pedal a tricycle; those who played active games every day were more likely than other children to have reached this milestone (70 per cent). These children were also more likely to be able to stand on one leg or throw a ball overhand than those who typically had no days of physically active games at home, but they did not differ significantly from children who had games on some days (also Figure 2.5). However, it is difficult to know how much the frequency of active game-playing with someone at home is determined by the child's own choice or by another person.

**Figure 2.5: Association between frequency of playing active games with someone at home and attainment of gross motor milestones at three years**



In contrast to the positive association between frequency of active games and gross motor development, spending long periods of time watching television was associated with a lower likelihood of being able to pedal a tricycle or stand on one leg. It did not appear to affect overhand throwing. For the 98 per cent of children who spent at least some time per day watching television, those who watched less than 30 minutes on an average day were the most likely to be able to pedal a tricycle (71 per cent), and among the most likely to stand on one leg (88 per cent). Those children who watched more than three hours per day had the lowest rates of attainment of these two milestones (Figure 2.6).

**Figure 2.6: Percentage of three-year-old children attaining each gross motor milestone according to amount of time spent watching TV on a typical day (only the '30 minutes or less' and 'more than 3 hours' groups are shown)**



Given these associations between early motor skills and levels of physical activity, one interesting avenue of further investigation longitudinally would be the potential link of these skills and activities to child weight and obesity.<sup>9</sup> Information on gross motor skills at nine months will assist in clarifying whether motor skills are negatively affected by being overweight or if poorer motor skills are a risk factor for becoming overweight.





## 2.3 FINE MOTOR DEVELOPMENT

*Most children were able to use a pencil and play with small objects such as jigsaw pieces. Having someone at home to engage the child in activities that required fine motor skills such as painting and drawing appeared to foster these abilities.*

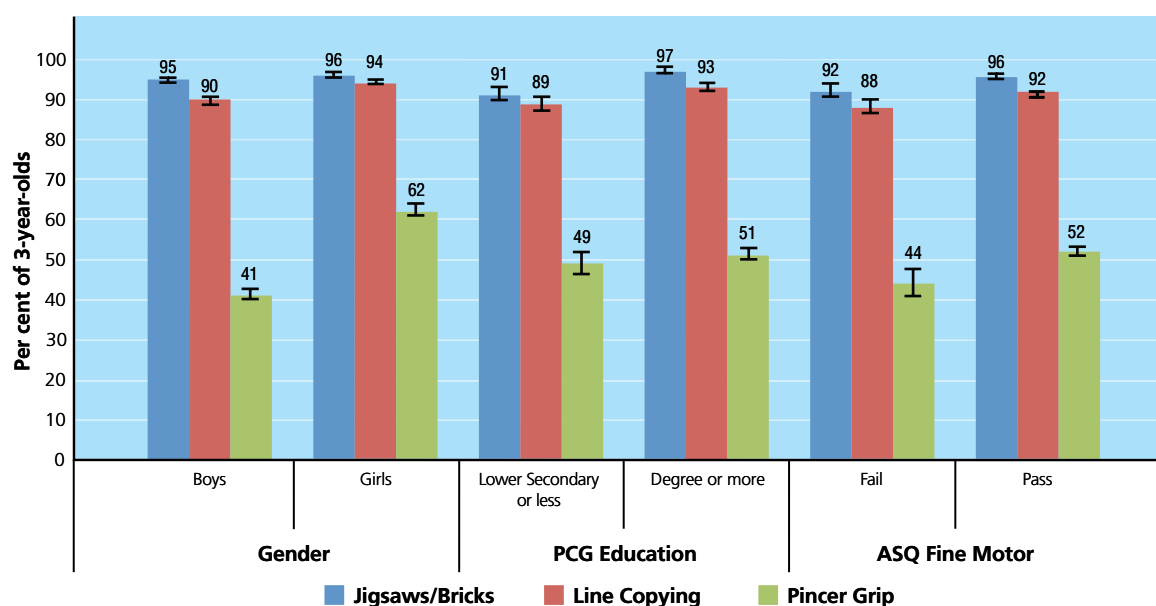
Fine motor skills refer to an individual's ability to use their hands and fingers; for example, to manipulate small objects. Such skills are necessary for self-care – such as feeding and dressing oneself – but are also important facilitators of learning. Being able to manipulate objects such as toy blocks promotes learning about numbers, geometry and balance, and holding and using a pencil is an essential skill for writing. A cross-national review of development in pre-schoolers by Venetsanou and Kambas (2010) suggests that socio-cultural emphases on what is important for young children to learn influence the rate at which they develop particular skills. For example, a study of children in Hong Kong found higher levels of manual dexterity which may reflect an early emphasis on being able to write and to manipulate chopsticks (Chow, Henderson & Barnett, 2001). Other research suggests that factors affecting fine motor skill development can start as early as in the prenatal period (e.g. Pedersen, Henriksen & Olsen, 2010; Larsson & Montgomery, 2010).

Three indicators of fine motor development were taken at the three-year interview. First, the Primary Caregiver was asked if the child was able to manipulate the small pieces used to play with jigsaws or brick-type toys. The other indicators required the Primary Caregiver to draw a vertical line on a piece of paper and ask the child to copy the line. The interviewer observed whether the child was able to do this, and also if the child held the pencil in a pincer grip while drawing the line (i.e. between thumb and index finger).

### 2.3.1 SOCIO-DEMOGRAPHIC DIFFERENCES IN EARLY FINE MOTOR SKILLS

The majority of children (95 per cent) were reported to be able to play with toys like jigsaws or bricks, and most (92 per cent) were also observed to copy a vertical line. Only about half (51 per cent), however, were using a pincer-type grip. On all three indicators, girls did better than boys (see Figure 2.7) but while the difference was marginal for playing with jigsaws/bricks and line-drawing, it was much more marked in relation to the pincer grip – only 41 per cent of boys used the grip compared to 62 per cent of girls. In contrast, there was no difference in use of pincer grip between children of the lowest- and highest-educated Primary Caregivers (also Figure 2.7) but the latter did somewhat better than the former on both jigsaws (97 per cent compared to 91 per cent) and line-drawing (93 per cent compared to 89 per cent).

**Figure 2.7: Differences on fine motor indicators at three years old according to gender, Primary Caregiver's education and pass/fail of the ASQ fine motor measure at nine months old**

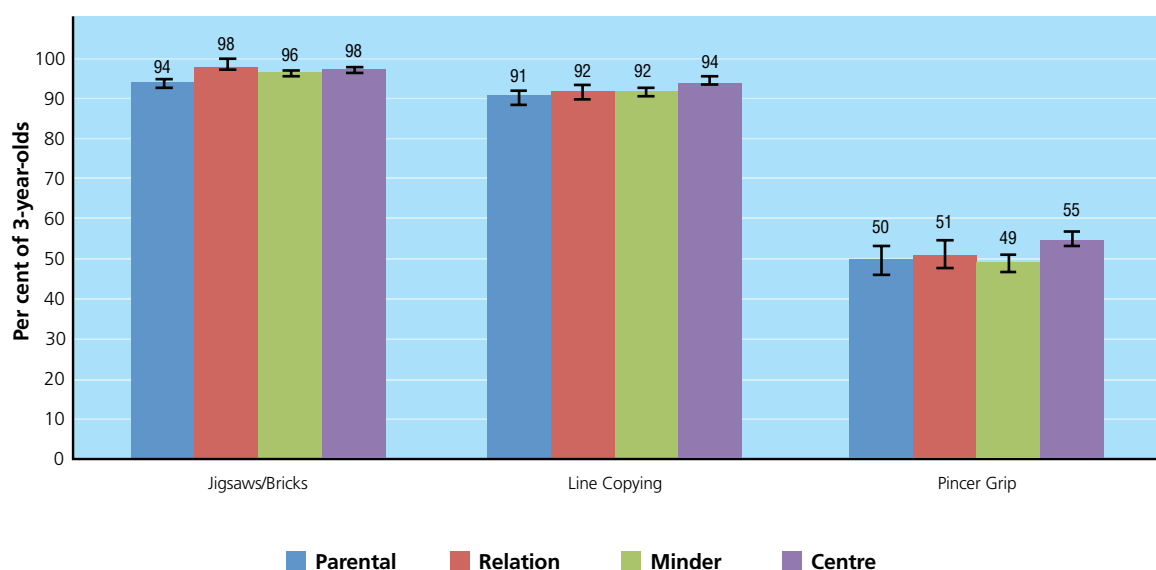


In comparing the child's fine motor development as an infant, recorded at the nine-month interview (from the Ages and Stages Questionnaire fine motor subscale recorded at nine months of age), it was found that those children who failed the earlier measure were less likely to have attained the later milestones (Figure 2.7), although most were still able to play with jigsaws/bricks and copy a vertical line. The biggest difference between the groups was in relation to the pincer grip; only 44 per cent of those who had failed the earlier fine motor measure used it, compared to 52 per cent of those who had passed.

### 2.3.2 ASSOCIATION BETWEEN FINE MOTOR SKILLS AND CHILDCARE AND ACTIVITIES IN THE HOME

There were small differences in fine motor ability according to the child's current childcare arrangements (Figure 2.8). In general, those with no regular non-parental care<sup>10</sup> did less well on the fine motor tasks than those attending centre-based care, a difference that was maintained even after adjustment for family income. In particular, children whose main type of childcare was centre-based care had the highest rates of using a pincer grip while drawing (55 per cent). However, greater contrasts in fine motor skills were observed in relation to the frequency with which someone at home engaged the child in activities such as playing games/jigsaws or painting and drawing.

**Figure 2.8: Attainment of fine motor milestones of three-year-olds by main type of childcare or parental care only\***



\* Note that 'parental care only' includes children having less than eight of hours of non-parental care per week or only on an occasional basis, as well as those who had never had non-parental care. Other children may have been experiencing more than one type of non-parental care.

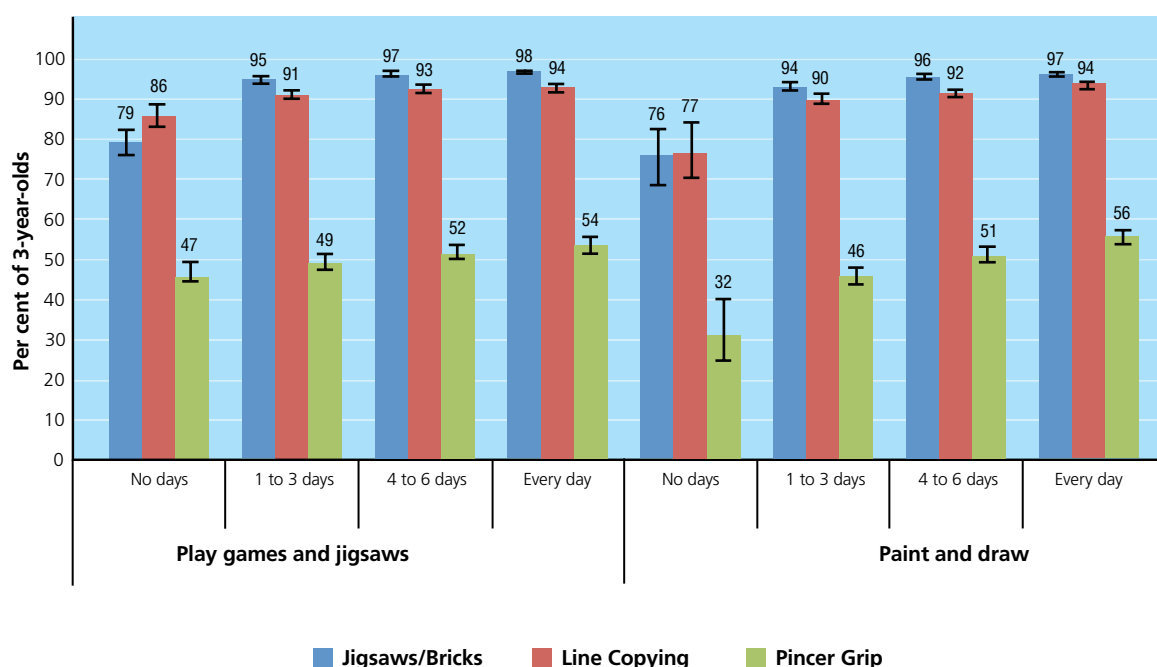
Figure 2.9 shows that playing games such as board games or jigsaws with the child increased the likelihood that he/she would be able to manipulate the pieces necessary to complete jigsaws or play with brick-type toys. In particular, those children who lived in households where they did not have this type of play on any day of the week were least likely to have reached the jigsaw/brick milestone (79 per cent), in contrast to the 98 per cent of children who engaged in this type of play with someone at home every day. An absence of game/jigsaw play was also associated with lower attainment on the other fine motor milestones of line-copying (86 per cent) and use of a pincer grip (47 per cent).

As might be expected, attainment of these latter milestones was closely associated with the frequency with which someone at home engaged the child in painting and drawing-type activities. Figure 2.9 highlights how children who did not have this type of play activity on any day had the lowest attainment rates on line-copying



(77 per cent) and pincer grip use (32 per cent). These figures contrast with attainment rates of 94 per cent and 56 per cent respectively for those children who painted or drew with someone every day. Children who had no days of painting/drawing also had the lowest reported rates of being able to play with jigsaws/blocks (76 per cent). While it is difficult to adjust precisely for the child's pre-existing preference or capacity for activities such as art or indoor games, Figure 2.9 shows some evidence of increasing attainment rates for those who spent more time at them. The positive effect of these home-based activities was largely independent of the Primary Caregiver's education.

**Figure 2.9: Association between attainment of fine motor milestones at age three and number of days per week someone at home engages the child in activities of playing games/jigsaws and painting/drawing**

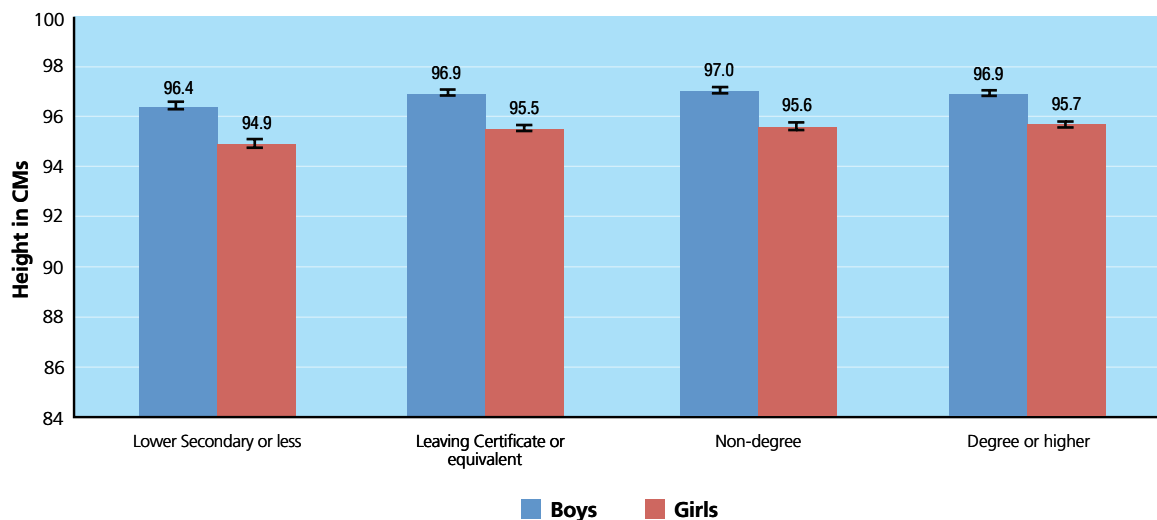


## 2.4 CHILDREN'S PHYSICAL GROWTH AND DEVELOPMENT

*The average Irish three-year-old stands 96.2 centimetres tall and weighs 15.6 kilograms. Boys were taller and heavier on average than girls.*

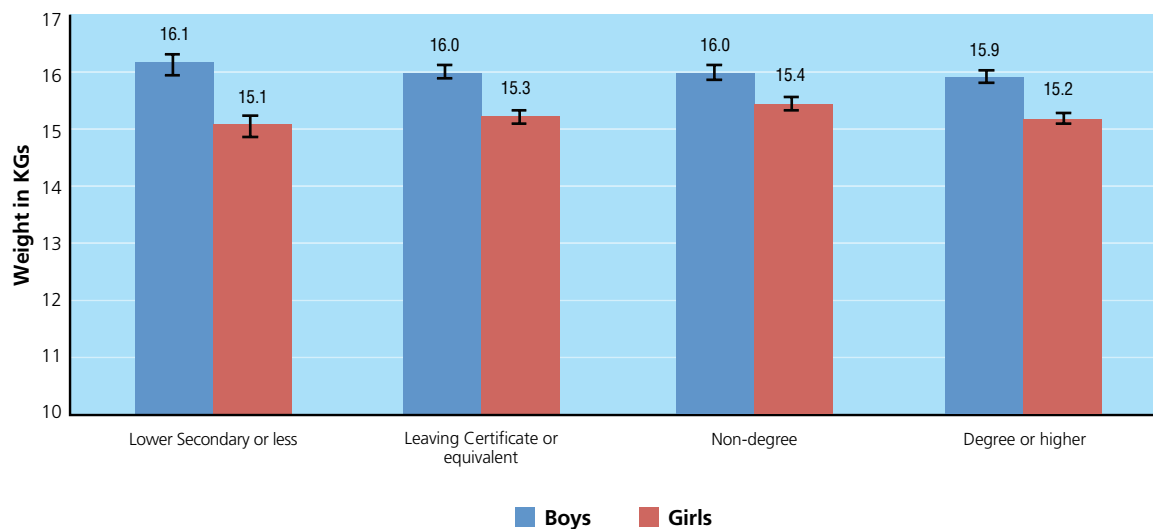
Height and weight have long served as leading indicators of children's health and physical development. The child's height and weight measurements were recorded during the course of the household interview by trained interviewers using medically approved weighing scales and height sticks. The average height of the three-year-olds was 96.2 centimetres; boys stood 1.4 centimetres taller than girls on average, at 96.9 centimetres. There were also differences in height by Primary Caregiver's educational level; boys from degree-level backgrounds measured 0.5 centimetres taller on average than boys whose Primary Caregiver had a lower secondary education or less. The height differential was even greater among girls; those from degree-level backgrounds measured 0.8 centimetres taller on average than those whose Primary Caregiver had lower secondary education (Figure 2.10). These results seem to indicate that the social class differences in height that have been observed at 7 and 33 years of age in a large British cohort (e.g. Power et al., 2002) are already beginning to emerge at three years of age in a large Irish cohort.

**Figure 2.10: Mean height of three-year-olds by Primary Caregiver's educational level**



The average weight of the three-year-olds was 15.6 kilograms. At 16.0 kilograms, boys weighed 0.7 kilograms more than girls on average. While there was a trend for boys from lower secondary backgrounds to weigh more than those from degree-level backgrounds, the difference was not significant, as shown in Figure 2.11, although the weight difference between boys and girls is also more apparent for the former group.

**Figure 2.11: Mean weight of three-year-olds by Primary Caregiver's educational level**





## 2.5 BODY MASS INDEX OF THREE-YEAR-OLDS

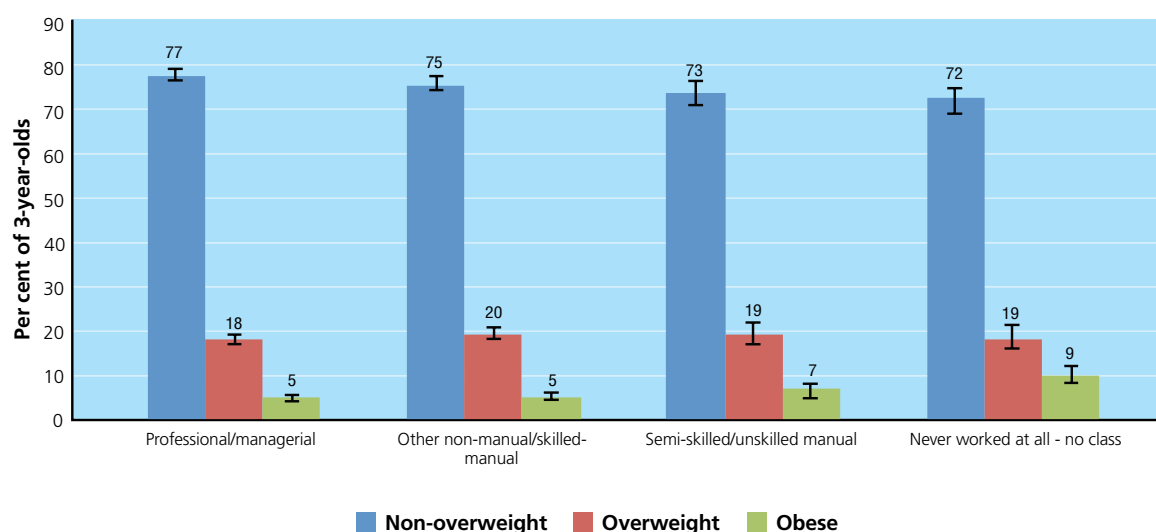
*A quarter of all three-year-old children were overweight or obese.*

For studies of this kind, Body Mass Index (BMI) is the most widely used method for measuring the degree of body fat in children. It is calculated by dividing weight in kilograms by height in metres squared. It has been shown to correlate strongly with measures of body fat obtained using direct physiological assessment (Lindsay et al., 2001). Since measurement in children is complicated by changes in body composition that accompany growing up, BMI thresholds standardised for the age and sex of the child have been developed. This report uses the age- and sex-specific cut-off measurements provided by the International Obesity Task Force (IOTF) (Cole et al., 2000) for children aged 36 months.

In total, 76 per cent of the children were classified as non-overweight, 19 per cent as overweight and 6 per cent as obese. This means that one quarter of all three-year-old children in Ireland had a BMI beyond the range that is considered healthy for this age group. The proportion of children classified as overweight was slightly higher than the 15.2 per cent reported by Wake et al. (2007) in their analysis of 4,934 four- to five-year-old children participating in the Growing Up in Australia study (LSAC), although the proportion of children classified as obese was similar across both studies. Numerous studies indicate that overweight and obesity in childhood tend to persist into later life (e.g. Ong & Loos, 2006). Accordingly, the high prevalence levels in early childhood represent a worrying trend, not only in terms of the quality of life and health of the children involved but also in terms of the planning, delivery and cost of healthcare in the future.

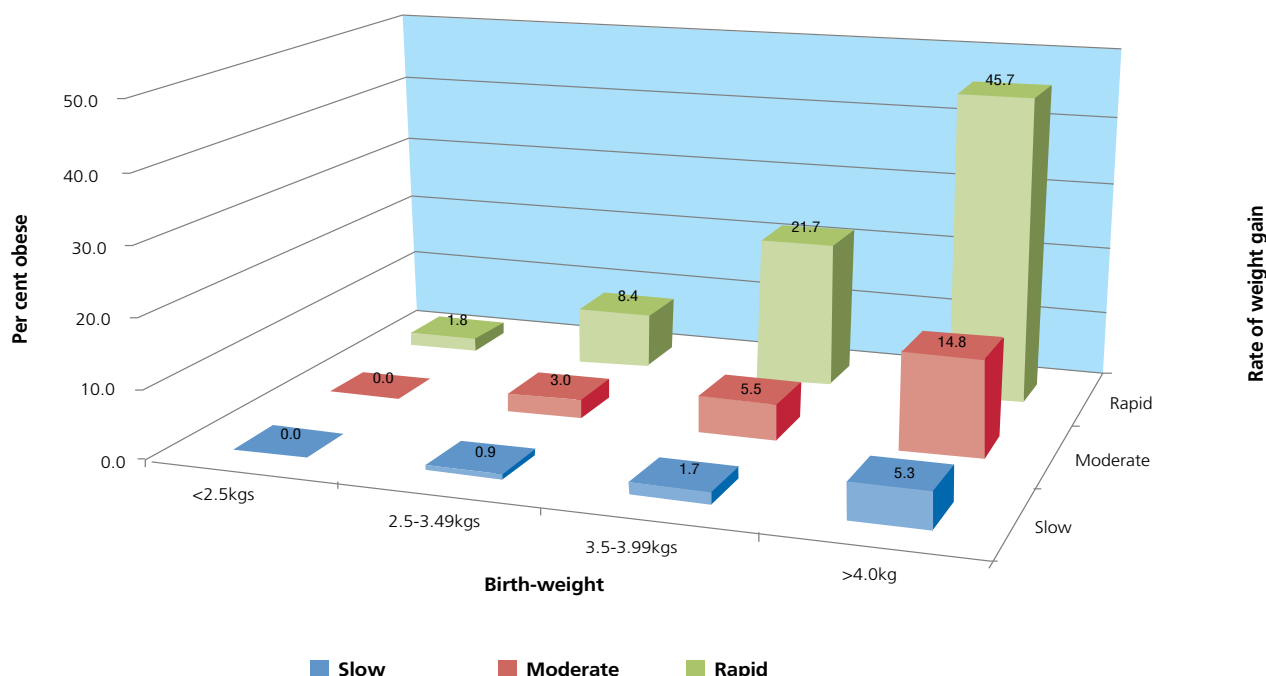
There were no large differences among boys and girls in the prevalence of being overweight (18 per cent for boys and 19 per cent for girls) or obese (5 per cent for boys and 6 per cent for girls). In contrast, analysis by household social class reveals a pronounced social gradient in obesity. Figure 2.14 shows that 5 per cent of children in the professional/managerial and non-manual/skilled manual groups were classified as obese, rising through 7 per cent for those in the semi-skilled/unskilled group, to 9 per cent of those in the 'never worked' group. This is a particularly interesting finding, as researchers have disputed the age at which the gradient in BMI first emerges (Howe et al., 2011), and these results from *Growing Up in Ireland* suggest that the effect is already evident at three years of age. Understanding the disproportionate prevalence of overweight and obesity among children in lower socio-economic groups is particularly important in addressing the issue and its related problems.

**Figure 2.12: Percentage of three-year-old children within each BMI category, by household social class**



To further explore the extent to which variations in children's early growth patterns and birth-weight are associated with later risk of obesity, the rate of the child's weight gain from birth to nine months was classified as 'rapid', 'moderate' or 'slow', based on a weight Standard Deviation Score (SDS).<sup>11</sup> Figure 2.13 illustrates that, even controlling for weight at birth, the risk of obesity is almost always greatest among those whose rate of weight gain in infancy was characterised as 'rapid'. For instance, 1.8 per cent of children who were born with low birth-weight (left side of figure) but grew rapidly between birth and nine months of age were classified as obese at three years of age, compared to none of those whose rate of gain was characterised as 'slow' or 'moderate'. At the other end of the birth-weight spectrum (right side of chart), 45.7 per cent of the children who were heavier babies (i.e. weighed more than 4 kilograms at birth) and who grew rapidly up to nine months old were classified as obese at three years of age compared with 5.3 per cent of those who weighed more than 4 kilograms at birth but had a 'slow' rate of weight gain.

**Figure 2.13: Percentage of children who were obese at three years of age, by birth-weight and velocity of weight gain in early life**



## 2.6 CHILDHOOD DIET

*There was already evidence of a social gradient in diet with children of less-educated mothers more likely to have consumed energy-dense food like hamburgers and crisps, but less likely to have eaten fresh fruit or vegetables, in the 24 hours preceding the interview.*

The quality and composition of children's diet during the early childhood years has attracted increasing interest in recent years, especially in the context of rising obesity among childhood populations. The National Pre-School Nutrition Survey reported that 60 per cent of parents felt that their young child's diet could be healthier; the most frequent reason for it not being so was reported to be the child's own preferences (Walton [Ed.], 2012). Common methods of dietary assessment in children include dietary recall, food diaries or food frequency questionnaires (FFQ). However, there is a notable lack of short and age-appropriate methods for assessing dietary quality in children (Magarey, Golley, Spurrier et al., 2009). In *Growing Up in Ireland*, children's dietary intake was assessed via parental recall of the child's food consumption in the 24 hours immediately preceding the interview. A 15-item semi-quantitative food frequency questionnaire was used; the Study Child's Primary Caregiver was given a list of foods and asked whether or not the child had had one portion, more than one

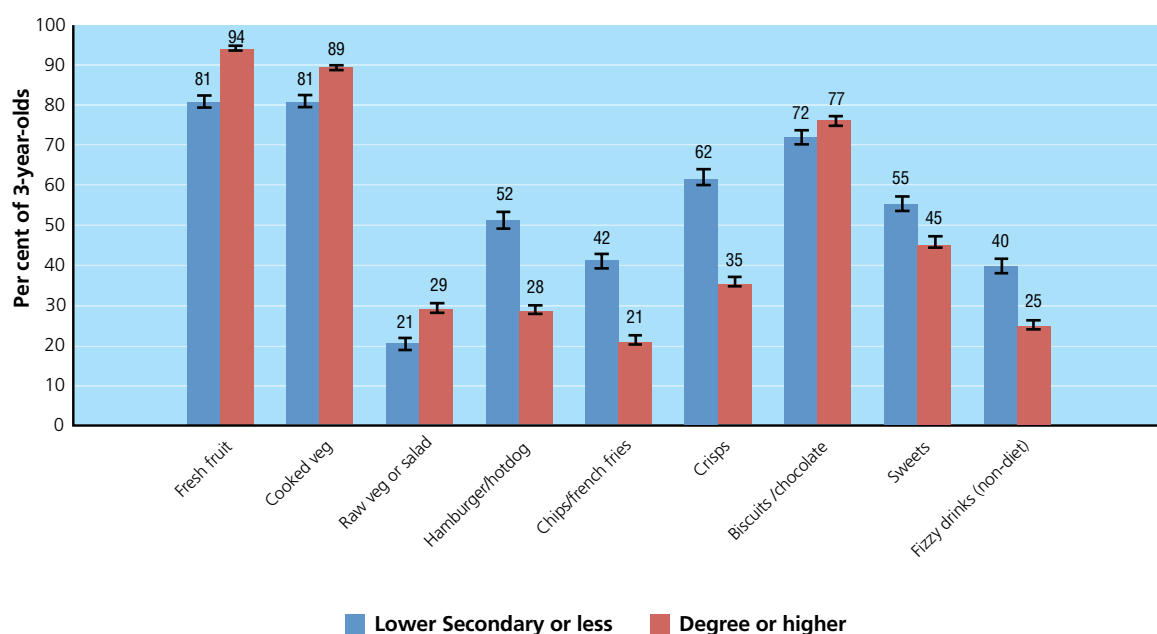


portion or none of each. The responses indicate if the children's diet is more or less healthy along the dimensions of fruit, vegetables, energy-dense foods, and foods low or high in fat. Although the inventory lacks the sensitivity to provide detailed nutritional and calorific information, it provides an insight into the consumption patterns of three-year-olds.

Early childhood is a period when children's dietary behaviour is likely to be heavily influenced by the family environment. Parents shape their children's eating behaviour not only through the foods they make accessible to their children, but also through parental example, parenting practices and rewards (Scaglioni et al., 2008). Research shows that children tend to eat those foods which are most accessible to them in the home environment, and that the foods to which children are most routinely exposed help to shape their preferences and eating patterns (Patrick & Nicklas, 2005). For example, studies have shown a strong association between the availability of fruit and vegetables in the home and children's consumption of these foods (Hearn et al., 1998; Resnicow, 1997).

Numerous studies in Ireland indicate that dietary quality is strongly patterned by socio-economic status (Kelleher et al., 2008), a trend which is also seen in parental responses to the *Growing Up in Ireland* dietary inventory, even at this early age. Figure 2.14 shows that parental education was strongly and positively associated with fruit and vegetable consumption, and strongly and inversely related to consumption of energy-dense foods such as crisps, chips and hamburgers/hotdogs, and with non-diet fizzy drinks. For example, 94 per cent of the children whose Primary Caregiver had a degree-level qualification had at least one portion of fruit in the preceding 24-hour period, but this dropped to 81 per cent among children whose Primary Caregiver had a lower secondary qualification or less. Conversely, 62 per cent of children whose Primary Caregiver had a lower secondary education or less ate at least one portion of crisps compared with 35 per cent of children from degree-level backgrounds. However, over 70 per cent of three-year-olds from both groups consumed biscuits and chocolates.

**Figure 2.14: Percentage of three-year-old children consuming at least one portion of various foods, by Primary Caregiver's level of educational attainment**



These differences in diet quality may partially explain the higher obesity risk among lower social class groups observed in Figure 2.12 above, an association that has already been observed in other countries. The longitudinal importance of these early differences in diet for longer-term health outcomes is indicated by a US study of 519 pre-school children which found that poorer dietary quality was associated with higher BMI and higher risks for heart problems four years later (Williams & Strobino, 2008).

## 2.7 SUMMARY

Most of the three-year-olds seem to have achieved the basic motor milestones expected of them but many are still struggling with some of the more complex skills, such as riding a tricycle. There is evidence that children who had difficulties when they were infants were at greater risk of lagging behind their peers at age three, although many seem to have 'caught up' since the earlier interview.

Of greater concern is the proportion of these very young children who are already overweight or obese – approximately one-in-four. Furthermore, there is a firm basis for the hypothesis that much of this risk is triggered even earlier, in the period between birth and nine months, since those who had gained weight rapidly after birth were more likely to be overweight or obese at age three years. Finally, it is disheartening to see that the likelihood of having an unhealthy weight is already associated with socio-economic disadvantage, and that this may be related to poor dietary choices among some families in this group.

### Next steps: opportunities for further research

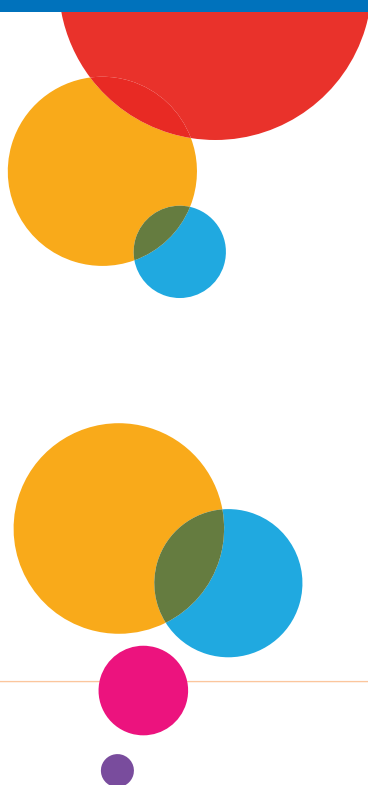
As suggested above, one of the more pressing research questions that would benefit from a multivariate and longitudinal analysis is identifying the pathways by which children from lower socio-economic groups seem to be exposed to a much greater risk of poor diet and unhealthy weight. While some of this risk may be genetically transmitted, it seems likely that at least some of it may be policy-malleable, whether in relation to affordability and availability of healthier food or through more effective information and health promotion campaigns. Longitudinal data such as those available in *Growing Up in Ireland* can help to separate the impact of early eating patterns from later ones, and also contribute to the debate on whether poorer dietary quality among lower socio-economic groups is due to lower income, lack of knowledge or reduced availability of healthy foods in disadvantaged areas.





# Chapter 3

## HEALTH, ILLNESS AND INJURIES AMONG THREE-YEAR-OLDS



### 3.1 INTRODUCTION

There is growing consensus that the foundations of health are established in early life, and are shaped by the complex interplay of biological, psychological, social and environmental processes (Kuh, Power, Blane & Bartley, 2004). The life-course does not begin at birth, but is shaped by genetic inheritance, prenatal environment and intergenerational influences. Within the ecological framework of this study, *health* is not simply a static descriptor of physiological function, but rather a dynamic factor that shapes how the child experiences and interacts with his/her environment, and that can in turn be shaped by other aspects of the child's development. This chapter will explore patterns in child health and health service utilisation at three years of age across a broad array of indicators, including general health status, longstanding illness, GP visits, and accidents and injuries. It will also explore how health relates to other aspects of the children's development, including their socio-emotional and behavioural development. In addition to examining cross-sectional trends in the data to describe what is typical for Irish three-year-olds, this chapter also uses information collected at Wave 1 when the children were nine months of age, in order to enhance our understanding of how health and well-being vary over time for three-year-olds.

### 3.2 GENERAL HEALTH OF CHILDREN

*The vast majority of the three-year-old children were reported to be in good health. Almost 98 per cent were described as very healthy or healthy by their parents.*

Many national health surveys use a general measure of self-reported health because it is quick to administer and has been found to produce valid and reliable indicators of other objectively obtained measures of health status (Bowling, 2005). In *Growing Up in Ireland*, the Primary Caregiver was asked to rate the child's health in the past year on a four-point rating scale. The vast majority of three-year-olds were rated as being in good health; 75 per cent of the sample were described as *very healthy – no problems* and 23 per cent described as *healthy, but a few minor problems*. Only a small proportion of the sample (2.3 per cent) were described as being *sometimes quite ill or almost always unwell*. Girls were more often rated as very healthy than were boys (78 per cent vs. 72 per cent).

#### 3.2.1 CHILD HEALTH STATUS FROM BIRTH TO THREE YEARS OF AGE

*The social gradient in parental ratings of children's health widens over time. Although there were no significant differences in children's health at time of birth, by three years of age children from the least advantaged social class backgrounds were significantly less likely to be rated as very healthy compared with children from other class backgrounds.*

Comparing child overall health status at Waves 1 and 2 indicates that the percentage of children reported as being very healthy decreased from 83 per cent at nine months to 75 per cent at three years, with an accompanying increase in the number of children reported as having a few minor problems (16 per cent vs. 23 per cent). There was also a noticeable increase in the number of children reported as being sometimes quite ill/almost always unwell, rising from 1.1 per cent at nine months to 2.3 per cent at three years. *Growing Up in Ireland* also affords the opportunity to look at the change in health status over time at the level of individual children.



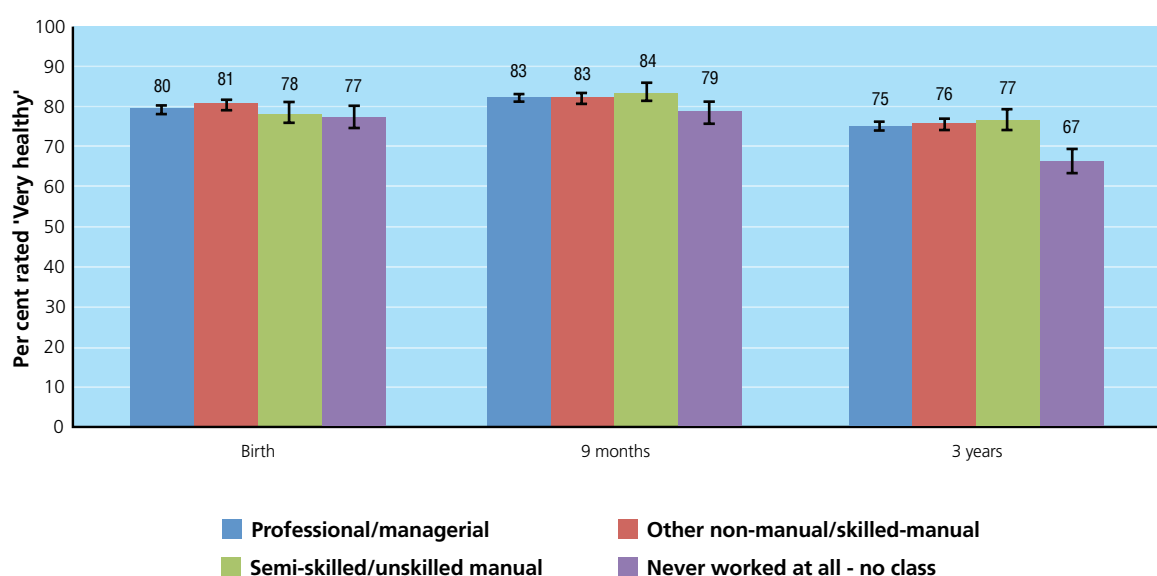
Table 3.1: Variation in parent-reported ratings of children's health over time

Nine months	Three years			
	Very healthy – no problems	Healthy – but a few minor problems	Sometimes quite ill	Almost always unwell
	%	%	%	%
Very healthy – no problems	79	19	1.3	0.2
Healthy – but a few minor problems	54	41	5	0.8
Sometimes quite ill	35	50	13	0.0
Almost always unwell	42	26	32	0.0

From Table 3.1, it is evident that there is considerable change in individual children's health status over time. For example, 19 per cent of those who had been rated as very healthy at nine months of age were reported as having a *few minor problems* at three years of age, while a further 1.5 per cent reported a more marked deterioration in health, with 1.3 per cent now being rated as *sometimes quite ill* and 0.2 per cent rated as *almost always unwell*. In the other direction, the vast majority of children who were rated as *sometimes quite ill* or *almost always unwell* at nine months had improved, by age three, to *very healthy* or *healthy but a few minor problems*. Nevertheless, there was still a small but important group of children who endured poor health across this time span; 13 per cent of those who had been rated as *sometimes quite ill* at nine months, and 32 per cent of those who had been *almost always unwell* continued to be or were rated as sometimes quite ill at age three.

The association between wealth and health has been acknowledged for centuries (Adler & Stewart, 2010). One of the most consistent findings in epidemiological research is that child health varies according to social class and that children at the lower end of the social spectrum are disproportionately more likely to suffer the effects of ill health (Boyce & Keating, 2004). These patterns have been established across a wide variety of child health outcomes, including low birth-weight (Kramer et al., 2002), general health status (Case & Paxson, 2002), chronic illness (Hysing et al., 2009) and oral health (Nunn, 2006). Social gradients in health tend to emerge at an early age and widen across the life-course (e.g. Case & Paxson, 2002). Gradients are found irrespective of whether education, income, social class or other socio-economic indicators are used, and this is evident even in countries with universal healthcare coverage (Currie & Wanchuan, 2007).

Figure 3.1: Percentage of children rated as 'very healthy', by household social class at birth, nine months and three years of age





*Growing Up in Ireland* data were used to examine whether these relationships were evident at three years of age by considering the association between the child's general health status and the social class of the household. Figure 3.1 displays the percentage of children rated as *very healthy* over three time points – at birth, at nine months of age, and at three years of age – by household social class. This graph indicates that children from the lowest social class background ('never worked') were less likely to be rated as *very healthy* at three years of age compared with those from other social class households. There was no difference between the more advantaged groups.

### 3.3 LONGSTANDING ILLNESS AND LIMITATIONS IN DAILY ACTIVITIES

*Almost 16 per cent of three-year-olds were reported as having a longstanding illness, disability or other ongoing health condition. Respiratory illnesses were the most commonly reported illness type; 6 per cent of the sample had received a doctor diagnosis of asthma. Boys were significantly more likely than girls to have a doctor-diagnosed chronic illness.*

The experience of childhood chronic illness can have an enormous impact on a child's quality of life and that of their families (Eiser, 1997). Children with a chronic illness face the same range of developmental issues as children free of illness, but their ability to master tasks and deal with the typical stresses of childhood can be diminished by the nature and severity of their illness (Midence, 1994). The degree to which illness or disability affects a child's life may be influenced by a number of factors including the level and severity of the disability; the child's temperament; the ability of the family system to adapt to the needs of the child with a disability; the socio-economic status of the family; the characteristics of the community, and the quality of supports available. Although estimates vary depending on the definition used (van der Lee et al., 2007), epidemiological studies typically indicate that chronic (i.e. longstanding) illness affects between 10 and 20 per cent of children at any given time (Northam, 1997; Geist et al., 2003).

*Growing Up in Ireland* asked parents whether their child had been diagnosed with any longstanding illness, condition or disability. Overall, 16 per cent of the cohort was reported as having at least one chronic condition at three years of age; however, the findings outlined in Section 3.2 indicate that a much smaller percentage of children were rated as generally more unwell than having a *few minor problems*. Table 3.2 shows that asthma was the most commonly reported illness type; 6 per cent of the sample had received a doctor diagnosis of asthma, according to parental report. This is not an unexpected finding as respiratory illness has been found to be the most common illness of early childhood, and Ireland consistently ranks among the highest in the world in terms of asthma prevalence (Masoli et al., 2004; World Health Organisation, 2007). The next most common illness types were eczema/skin allergies (4 per cent) and digestive allergies (1.3 per cent). Taken together, these three conditions accounted for more than half of all chronic illness among three-year-olds.<sup>12</sup> Illnesses and conditions not otherwise classified were grouped under the 'Other' category and accounted for 3 per cent of longstanding health conditions among the cohort; these largely consisted of gastro-intestinal problems, and recurrent infections of tonsils, adenoids and ears. Boys were significantly more likely than girls to have a reported doctor's diagnosis of chronic illness (18 per cent vs. 13 per cent); this relationship held across a number of chronic illness categories including asthma, respiratory allergies, eczema/skin allergies and digestive allergies, as shown in Table 3.2.

<sup>12</sup> While the prevalence of chronic illness was 16 per cent among the sample, some children were reported as having more than one chronic illness. Consequently, the figures reported in Table 3.2 sum to more than 16 per cent.



Table 3.2: Percentage of three-year-olds diagnosed with a longstanding illness by a doctor

Illness Type	Total (%)	Boys (%)	Girls (%)
Asthma	6	7*	4
Eczema/Skin allergy	4	5*	3
Food/Digestive allergy	1.3	1.6*	0.9
Respiratory allergy	1.0	1.4*	0.6
Heart abnormalities	1.0	1.0	1.0
Bone, joint, muscle problems	0.7	0.6	0.7
Non-food allergies	0.3	0.4	0.2
Problem using arms or legs/hands or fingers	0.3	0.4*	0.2
Hyperactivity/attentional problems /severe behavioural problems	0.3	0.4*	0.1
Epilepsy or seizures	0.4	0.4	0.3
Down syndrome	0.3	0.3	0.3
Autism spectrum disorder	0.3	0.5*	0.1
Diabetes	0.1	0.1	0.1
Kidney problems	0.5	0.4	0.5
Spina Bifida/Hydrocephalus	0.1	0.1	0.1
Cerebral palsy	0.1	0.2*	0.0
Other	3	3*	2

\* = significant difference at 0.05 level or below

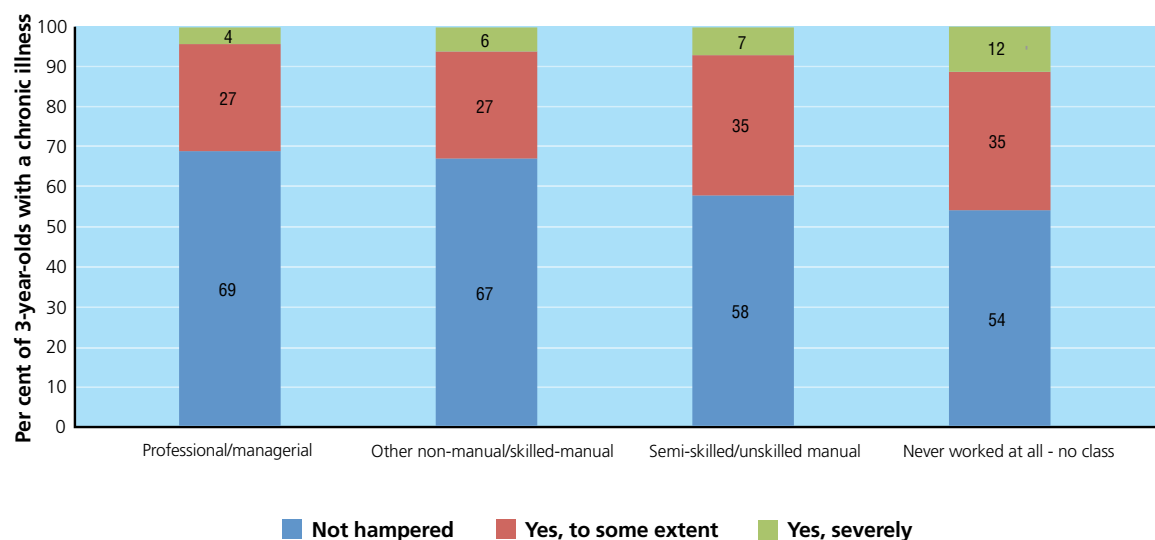
Percentages less than 2% are displayed to one decimal place, all others are rounded to whole numbers.

### 3.3.1 LONGSTANDING HEALTH CONDITIONS OR DISABILITIES AND LIMITATIONS IN DAILY ACTIVITIES

A total of 6 per cent of those with a chronic health condition (or 1 per cent of the sample) reported that they were severely limited in their daily activities by that condition.

Parents who reported that their three-year-old child had a longstanding illness, condition or disability were asked a further question about the extent to which the experience of illness hampered the child in his/her daily activities. Of these, 65 per cent reported that the child was *not hampered*, 29 per cent reported *hampered to some extent*, and 6 per cent (or less than 1 per cent of the entire sample) *severely hampered*.

Figure 3.2: Three-year-old children with a chronic illness hampered in daily activities, classified by household social class



The extent to which the experience of chronic illness hampered children appeared to increase with social disadvantage, as shown in Figure 3.2. For example, 12 per cent of Primary Caregivers from the lowest social class background reported that their child was severely limited in their daily activities and 35 per cent reported that they were *hampered to some extent*. The corresponding figures for children of the professional/managerial group were 4 per cent for children being *severely hampered* and 27 per cent for *hampered to some extent*.

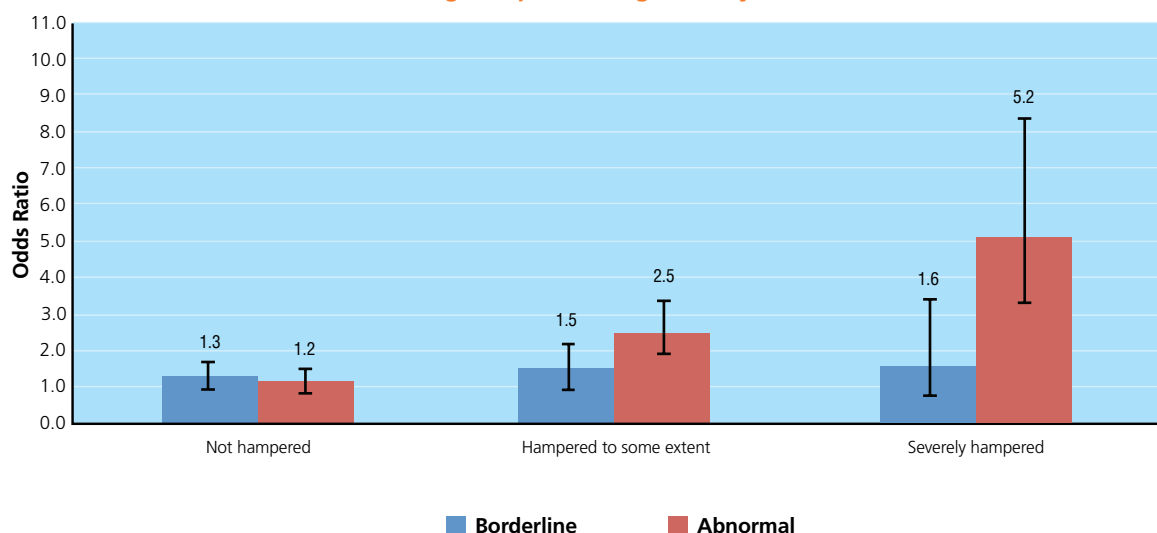
### 3.3.2 LONGSTANDING ILLNESS AND CHILDREN'S BEHAVIOURAL OUTCOMES

*Children with a chronic illness were nearly twice as likely to be classified as having behavioural problems at three years of age as those who did not have a chronic illness. The risk of behavioural problems increased the more a child was hampered by their illness.*

Both epidemiological and clinical studies have found that children with a chronic illness or disability are at increased risk for emotional and behavioural problems (Hysing et al., 2009). A number of possible explanations for increased psychosocial risk in children with chronic illness have been mooted. Although characteristics such as the nature, duration and severity of the illness have been investigated in a number of studies (e.g. Daltroy et al., 1992; Kovacs et al., 1989), they have been found to be less important than parent and family functioning variables in predicting psychosocial outcomes for sick children (Wamboldt & Wamboldt, 2000). The experience of childhood chronic illness or disability can impose strains on the child and the family unit. Some models of childhood illness frame chronic disease as a stressor to which children and families must adapt (Thompson et al., 1993). In addition to the burden of additional caretaking demands, the family of the chronically ill child may need to cope with repeated hospitalisations and bouts of ill health (Swanston et al., 2000), uncertainty regarding the outcome of the illness (Kieckhefer & Ratcliffe, 2000), and reduced social and labour market participation (Westborn, 1992), along with the associated psychological and financial pressures. For the child, these pressures may include learning to cope with practical limitations imposed by the illness as well as reduced schooling and social participation.

The relationship between parent-reported longstanding illness and children's scores on the Strengths and Difficulties Questionnaire (SDQ), which is the main outcome measure of children's psychological adjustment, was examined. This type of analysis is made possible by the richness of the *Growing Up in Ireland* dataset (and could be extended to other research questions arising in different domains). Following Goodman (1997), children scoring above the 90th percentile on the SDQ total difficulties index were classified as having a potentially problematic or abnormal behavioural profile; those scoring between the 80th and 90th percentile as borderline, and those scoring below the 80th percentile as normal.

**Figure 3.3: Odds of being classified as having a borderline or abnormal SDQ profile, by chronic illness and extent of being hampered at age three years**



Reference category: no longstanding illness



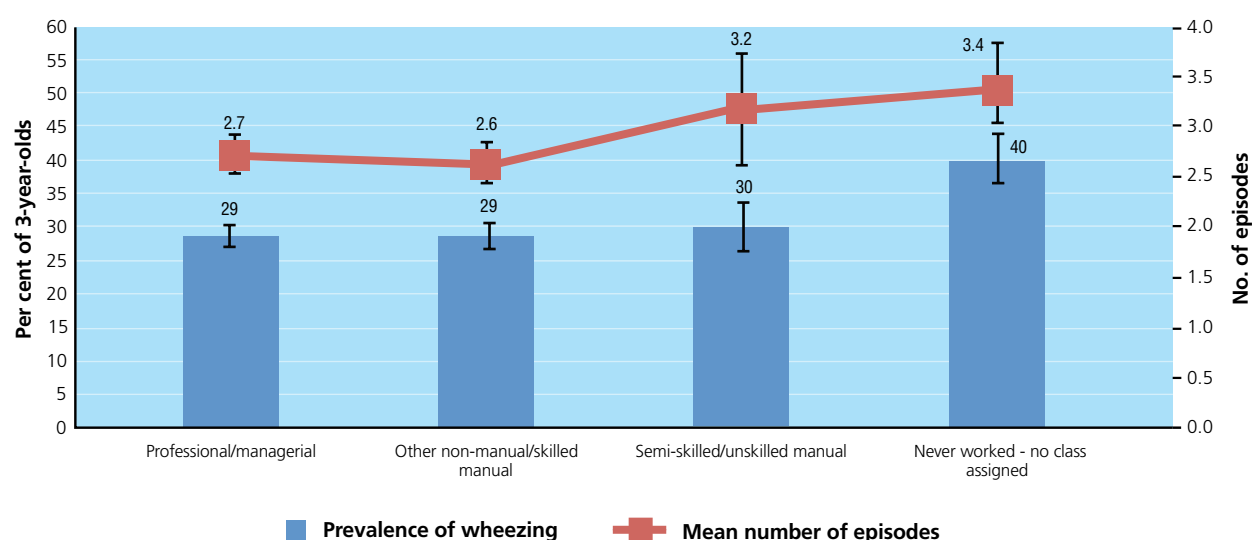
Figure 3.3 illustrates that the probability of having a problematic behavioural profile on the SDQ was higher for children with a chronic illness, and varied according to how much the child was hampered in his/her daily activities. Compared with healthy children, children who were described as hampered to some extent were 2.5 times more likely to score in the abnormal range on the SDQ, rising to 5.2 times for those who were severely hampered (although there was a lot of variability on this latter rate as indicated by the height of the error bar for this column in Figure 3.3). Interestingly, children who had a chronic illness and were not hampered still had a significantly higher risk of scoring in the problematic range on the SDQ. Further research could investigate if different types of health conditions show similarly elevated SDQ scores or whether certain conditions carry higher socio-emotional risks than others.

### 3.4 RESPIRATORY ILLNESS AND WHEEZING

*Three in 10 children had experienced at least one episode of wheezing in the past 12 months.*

Respiratory illness is the most common illness of early childhood (Schwartz, 2009); prevalence seems to be increasing (Kuehni, Davis, Brooke et al., 2001) and Ireland consistently ranks amongst the highest in the world in terms of asthma prevalence (Masoli, Fabian, Holt et al., 2004; World Health Organisation, 2007). In fact, asthma accounts for almost 50 per cent of all chronic illnesses reported among children in Ireland at nine years of age (Williams et al., 2010). Because of the high level of asthma and respiratory-related illness in Ireland, parents were asked some additional questions to gauge the level of undiagnosed respiratory illness among the pre-school population. Parents were asked whether their child had any periods of wheezing/whistling on his/her chest in the past 12 months.

**Figure 3.4: Prevalence of wheezing and mean number of episodes of wheezing among three-year-olds, by household social class**



Overall, 30 per cent of the sample reported that their child had at least one period of wheezing in the preceding 12-month period. Once again, boys were more likely than girls to have experienced a bout of wheezing (32 per cent vs. 28 per cent). There were also quite stark differences in prevalence of wheezing when comparing the 'never worked' group (40 per cent) to the more advantaged groups, which had a prevalence rate of around 30 per cent (Figure 3.4). Figure 3.4 also shows evidence of a social gradient; children from the *never worked* background experienced a higher average number of episodes (3.4) than those in the most advantaged *professional/managerial* group (2.7).

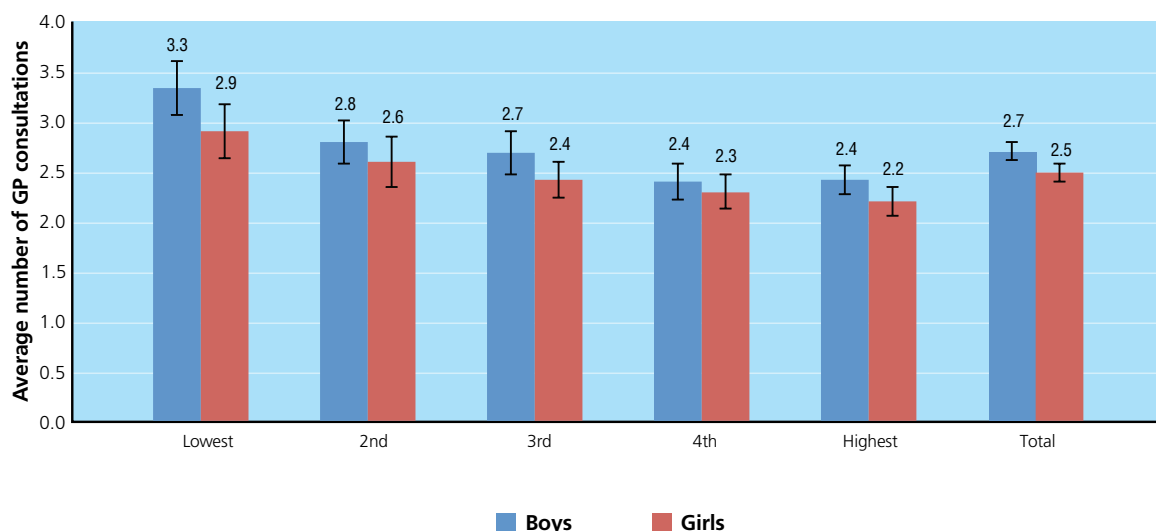
Interestingly, rates of wheezing were also significantly higher among children whose parents were born in Ireland (31 per cent) compared with children whose parents were born outside of Ireland (26 per cent). While it is already known that family members share a higher chance of having asthma and related conditions, (Schwartz, 2009), this finding may point towards higher levels of inherited risk specifically in the native Irish population; however, additional and more sophisticated analysis will be required to explore this association further.

### 3.5 GENERAL PRACTITIONER (GP) CONSULTATIONS

*The average rate of GP consultations was 2.6 per year. Children with a full medical card were significantly more likely to consult the GP, even when controlling for children's health status.*

**Growing Up in Ireland** asked the Primary Caregiver how many times in the past 12 months they had seen or talked on the telephone with a general practitioner (GP) about the child's physical or emotional health. The average number of consultations with the GP was 2.6 among the sample of three-year-olds. The frequency of GP consultations is closely related to the level of household income; the highest rates are among those in the lowest income group, and decrease on average as the level of household income increases, levelling off at the fourth income quintile (Figure 3.5). This socio-economic patterning has also been observed among older children in Ireland (Williams et al., 2009) and in adults (Nolan, 2008). Although boys tended to have more GP consultations than girls, the difference was either marginal or non-significant, as shown by the error bars in Figure 3.5.

**Figure 3.5:** Average number of GP consultations in the last 12 months, by household income and gender of the three-year-old

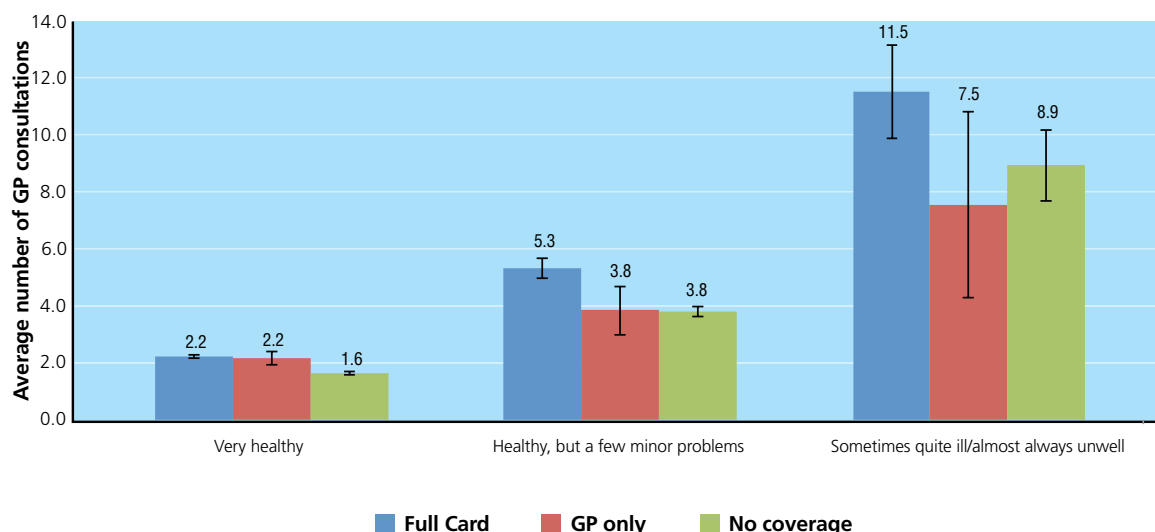


One possible explanation for the higher rates of GP consultations among children from lower socio-economic groups is that their health is worse on average. Alternatively, it could be that the higher rates of medical card entitlement among lower income groups may promote more frequent attendance than might otherwise be the case, as there is no financial cost. Figure 3.6 shows the average number of GP consultations by the child's current health and medical card status. In instances where children were rated as being *very healthy* or *healthy*, those who held a full medical card had higher consultations rates than those not covered by a medical card, though the differences were not significant for those in ill health.





**Figure 3.6: Average number of GP consultations, by the child's current health status and medical card provision**



Note that the 'GP-only card' is less common (4.4 per cent) than either the 'full card' (33.7 per cent) or 'no card' (61.9 per cent).

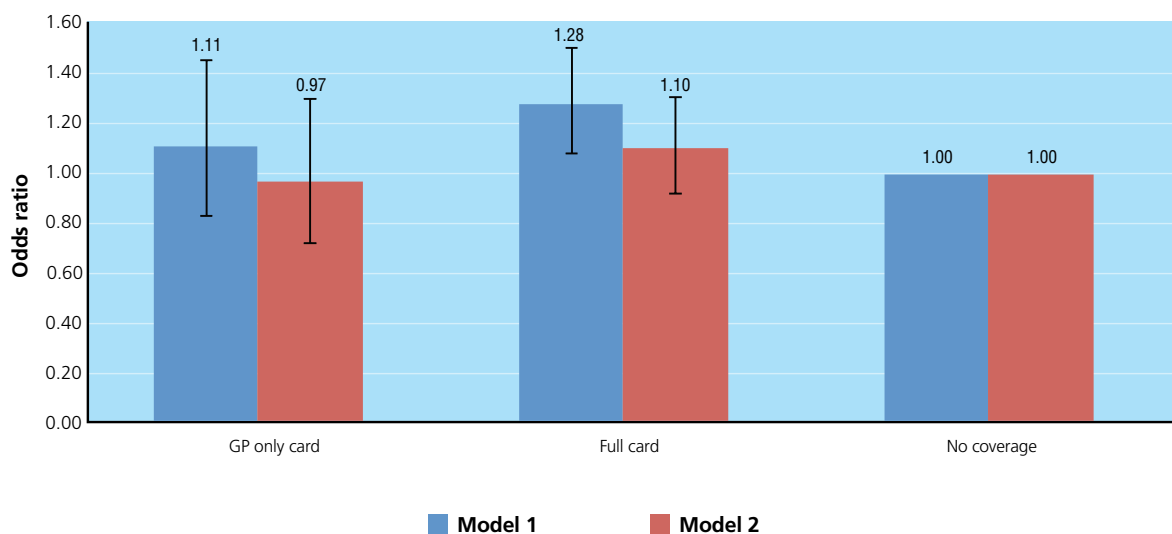
### 3.6 ANTIBIOTIC USAGE AMONG THREE-YEAR-OLD IRISH CHILDREN

*Almost two-thirds of all three-year-olds had received at least one course of antibiotics in the preceding 12-month period.*

Pre-school children consume more antibiotic medicines than any other age group (Wrigley, 2002). Ireland has one of the highest prescribing rates in the EU (European Surveillance of Antimicrobial Consumption, 2006 – Ferech et al.), amid concerns that over-use of antibiotics is leading to antibiotic resistance. In *Growing Up in Ireland*, parents were asked to record the total number of courses of antibiotics their child had received in the preceding 12-month period.

Almost two-thirds of the *Growing Up in Ireland* sample (65 per cent) had received at least one course of antibiotics in the past year. This figure is comparable with results from the (UK) Avon Longitudinal Study of Parents and Children (ALSPAC) which found that 62 per cent of children had received at least one course of antibiotics between the ages of 3 and 4.5 years (Wye et al., 2008). Analysis of patterns of prescribing among the *Growing Up in Ireland* cohort revealed significant variation by medical card status. Those on a full medical card were more likely to have had antibiotics – 71 per cent – compared with 69 per cent of those with a GP only card and 62 per cent of those with no medical coverage. Relative to those with no medical insurance coverage, those with a full medical card were 1.28 times more likely to have received a course of antibiotics, even after adjusting for gender, family type, household income, ethnic background, parental education and the child's current health status (Figure 3.7 – Model 1). However, the relationship was no longer significant when the higher average rate of GP consultations among medical card-holders was taken into account in addition to the other factors (see Model 2, Figure 3.7).

**Figure 3.7: The probability that the three-year-old child received a course of antibiotics, by medical card coverage**



Model 1: adjusting for gender, family type, parental education, household income, mother's country of birth, current health status  
 Model 2: Model 1 + number of GP consultations

An analysis with only those children who had received a course of antibiotics showed that those possessing a full medical card had the highest rate, with an average of 2.6 prescriptions compared with 2.2 among those with a GP card and 2.1 among those with no medical coverage. Those possessing a full medical card had significantly higher prescribing rates than those with no coverage, but again, the relationship was no longer significant when we controlled for differences in the average number of GP visits.

An interesting policy question to emerge from this analysis is the extent to which medical card provision may promote more GP visits, and whether the higher frequency of visits may contribute to patterns of over-prescribing of antibiotics – and ultimately if more frequent visits at this age will be associated with better or worse health as the child gets older.

### 3.7 ACCIDENTS AND INJURIES

*A total of 16 per cent of three-year-olds had experienced an accident or injury that required hospital treatment or admission over their lifetime. Boys (18 per cent) were more likely to have been injured than girls (15 per cent).*

Injury ranks as the leading cause of death in childhood in developed countries and has been identified as one of the most pressing global health problems affecting children (Haynes et al., 2003). To assess the extent of the problem among Irish pre-schoolers, *Growing Up in Ireland* asked whether the Study Child had ever had an accident or injury that required hospital treatment or admission. If the answer was 'yes', parents were asked about the total number of separate accidents or injuries.

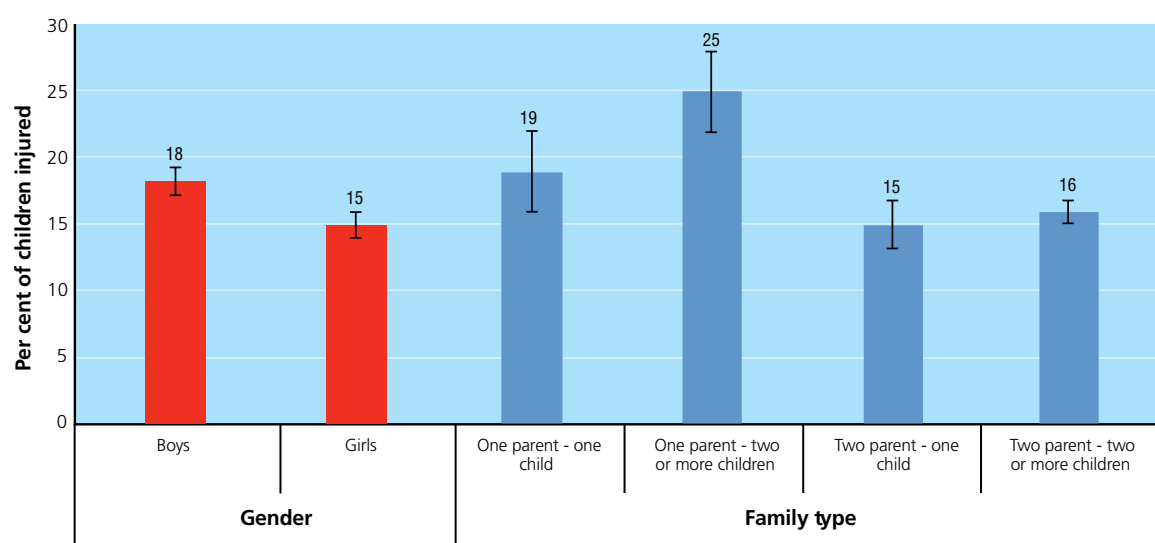
Overall, 16 per cent of the sample had experienced an accident requiring hospital treatment or admission. Figure 3.8 shows that there were differences in injury risk by gender, with boys (18 per cent) being significantly more likely than girls (15 per cent) to have had an accident or injury of this sort. This is a fairly consistent finding in the literature and may reflect the fact that boys tend to engage in more risk-taking than girls (Morrongiello & Rennie, 1998). The way parents interact with boys and girls may also be a factor, with parents having different expectations regarding the physical abilities of boys and girls and what is gender-appropriate. An observational



study by Morrongiello & Dawber (1999) of pre-schoolers found that both mothers and fathers applied more pressure to their sons to complete a playground task and provided more spontaneous assistance to their daughters than to their sons.

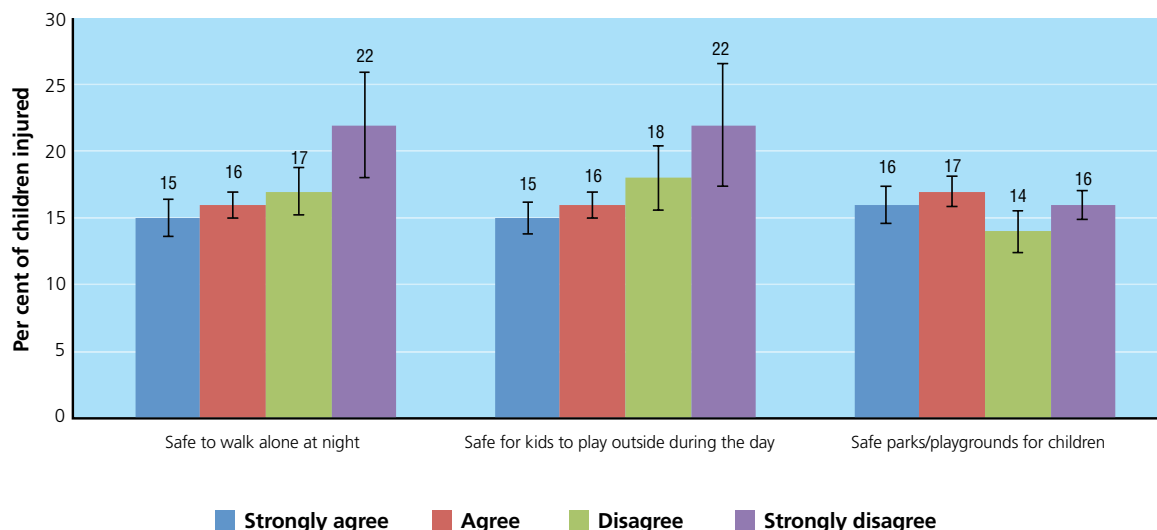
Although epidemiological studies of childhood injuries tend to indicate that children from lower socio-economic backgrounds are at increased risk for injury (e.g. Jarvis et al., 1995; Roberts and Power, 1996), the most prominent socio-demographic characteristic associated with this type of risk in the *Growing Up in Ireland* data was family type, even after controlling for other socio-economic variables. Figure 3.8 indicates that children from one-parent households with more than one child had the highest injury rates across different family types. For example, 25 per cent of children in a one-parent, multi-child family experienced an injury compared with 16 per cent of children in a two-parent, multi-child family. The tendency for injury rates to increase with the number of children living in the household has also been observed in other studies (Bijur et al., 1988) and may arise as a consequence of stretched parental resources within multiple-child households, or as a result of younger children socialising with and mimicking the actions of their older and more developmentally capable siblings (Nathens et al., 2000). More detailed analyses that take into account information such as the ages of siblings relative to the child could shed more light on this relationship.

**Figure 3.8: Percentage of three-year-old children who had experienced an accident or injury in the last year, by gender and family type**



There is increasing recognition that neighbourhood environment matters for children's health and well-being (Roux, 2007), including risk of injury (Haynes et al., 2003). Neighbourhoods have a range of social and physical characteristics which are likely to be important for aspects of child health, including features of the built environment (e.g. availability of parks and play-spaces) and the prevailing social climate. In Figure 3.9, the risk of injury varies with parental perceptions of the safety of the neighbourhood environment; the risk of injury is greatest among the children of parents who had the least positive opinions on the safety of the neighbourhood. It could be, of course, that having had an accident may have contributed to parents' perception of the neighbourhood. Children of parents who *strongly disagreed* with the statement that it was 'safe for kids to play outside during the day' had higher rates of injury (22 per cent) than those whose parents strongly agreed with the statement (15 per cent).

**Figure 3.9: Percentage of three-year-old children who experienced an accident or injury, by parental ratings of the safety of the neighbourhood environment**



### 3.8 SUMMARY

This chapter has described variation in children's health outcomes at three years of age by various socio-demographic features of the household. It is clear that the majority of children in Ireland are in good health by age three years, although further work could explore the differences between those children whose health improved as they got older, in contrast to those who remained ill or whose health deteriorated. Despite the good news, three-year-old children are typically taken to the GP 2-3 times a year and 16 per cent have had an accident or injury serious enough to require hospital treatment. Another issue for concern, potentially, is the finding that a majority of the children had at least one course of antibiotics in the past year. It was noted that frequency of GP visits seems to be associated with possession of a medical card.

#### Next steps: opportunities for future research

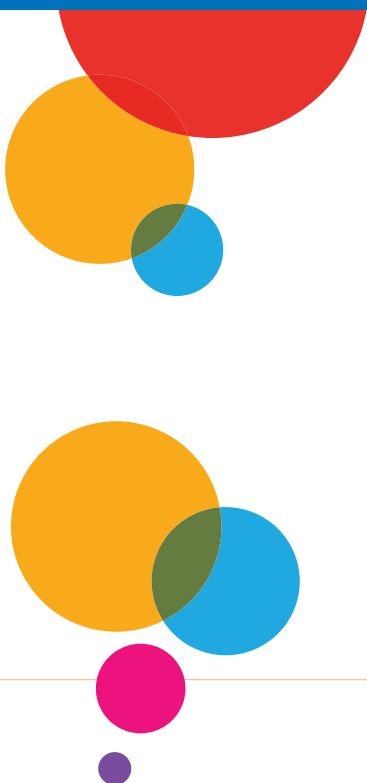
Analysis by gender revealed quite stark differences across certain health outcomes; boys were significantly more likely to have been diagnosed with a chronic illness, and to have experienced an accident or injury that required hospital admission. While biological differences between boys and girls are obviously important, so too are environmental factors operating at different levels of the child's ecological context. Further research – perhaps looking at 'high-risk' girls and 'low-risk' boys – may help to identify what risk factors for boys might be amenable to intervention and reduce these apparent gender inequalities in health.

In addition to the gender differences, there was a well established social gradient in health, which was not evident at birth or nine months of age, but had emerged by three years of age. Children from the least advantaged social class backgrounds were less likely to be rated as being in good health than those from professional backgrounds. They were also more likely to have a chronic illness, to experience limitations in daily activities, and to have worse respiratory health. Further research could potentially identify factors that mediate the apparent relationship between social class and child health.



# Chapter 4

## THREE-YEAR-OLD CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT





## 4.1 INTRODUCTION

Development in the emotional, social and behavioural domains is intricately linked, and the relationship between them is bi-directional, transactional, and ongoing (Hinshaw, 2008). The bio-ecological model which provides the theoretical framework for this study recognises that the child's socio-emotional development is strongly influenced by aspects of the child's physiology such as temperament, and by experiential factors such as parenting style, parent-child attachment and parental mental health. These interactions in the child's immediate environment are a crucial influence on how each child develops. This chapter looks at their potential to affect the child's socio-emotional and behavioural adjustment. It explores variations in the child's psychological adjustment at three years of age, using the Strengths and Difficulties Questionnaire as the primary indicator of children's socio-emotional and behavioural development. It begins by exploring patterns of variation in children's social development across a range of socio-demographic characteristics before moving on to examine the influence of a number of important child (e.g. temperament) and parenting (e.g. parenting style) variables on the child's early psychological adjustment.

## 4.2 CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

The construct of social competence is an important one in research on social development. It includes the child's acquisition of skills that allow him or her to engage competently with others in social interaction. During the pre-school years and early childhood, the child's opportunity to interact with peers and people beyond the family setting increases dramatically. This interaction is usually qualitatively different from family-based interactions and provides new influences on the child's socio-emotional development (Fabes, Gaertner & Pop, 2008). Poor socio-emotional development during early childhood places the child at risk of behaviour problems and poor academic performance (Denham, Wyatt, Bassett, Echeverria, & Knox, 2009; Bradley & Corwyn, 2005). If the child has not successfully negotiated the development of socio-emotional competencies in early childhood, his or her opportunities to learn in formal academic and informal peer and family contexts may be limited. The development of social-emotional competence influences development by enhancing or by limiting the child's opportunities to interact with others and to learn from social interactions. This relevance for future interactions is in addition to the importance of current positive interactions for both the child's well-being and family relationships more widely.

### 4.2.1 MEASURING CHILDREN'S SOCIO-EMOTIONAL AND BEHAVIOURAL DEVELOPMENT: STRENGTHS AND DIFFICULTIES QUESTIONNAIRE

The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) was used to assess the child's socio-emotional and behavioural development at three years of age. The SDQ is a brief 25-item parent-report measure that has been widely used in epidemiological and clinic-based work. It has been shown to have good psychometric properties (McCorry & Layte, 2012; Stone et al., 2010) and to discriminate well between community and clinic-based samples (Goodman & Scott, 1999). The instrument produces scores for each of five subscales: *conduct problems*, *hyperactivity/inattention*, *emotional symptoms*, *peer problems* and *pro-social behaviour*. Each subscale comprises five items and respondents indicate their level of agreement to each item on a three-point response scale of 'Certainly true', 'Somewhat true' or 'Not true'. Scores on each subscale range between 0 and 10, and a *Total Difficulties* score is obtained by summing scores across the four deficit-focused scales (i.e. all except the pro-social behaviour subscale) with higher scores indicating more problems. By contrast, higher scores on the pro-social scale are indicative of more positive behaviours. Sample items comprising each of the SDQ subscales are shown in Table 4.1 below. The values for Cronbach's alpha that are also given in Table 4.1 suggest that the 'peer problems' and 'emotional symptoms' scales have lower internal consistency than the other subscales, indicating that parents may have found it more difficult to evaluate their child's behaviour in these areas – perhaps because some may have had only limited interactions with other children at this stage. Cronbach's alpha for the combined 'total difficulties' score was .58 (not in Table 4.1).



### 4.3 HOW ARE IRISH THREE-YEAROLD CHILDREN FARING?

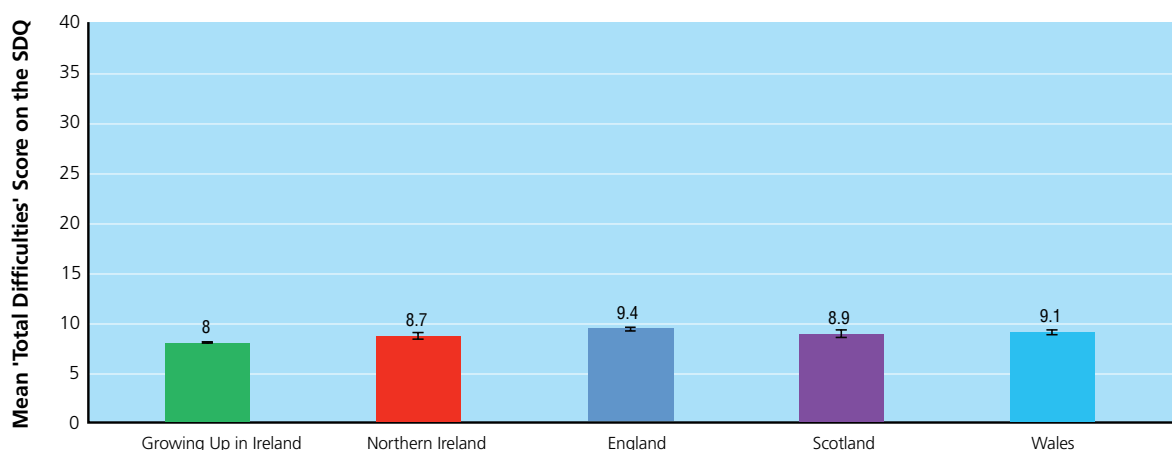
*Three-year-olds in Ireland have relatively low levels of behavioural problems.*

Table 4.1 shows the mean scores for the sample across each of the SDQ subscales. They are quite encouraging. Most children scored low on the four deficit-focused dimensions of the SDQ and high on the pro-social scale, which is indicative of positive socio-emotional and interpersonal behaviours. Moreover, comparing with other countries for which data are available (Figure 4.1), it appears that parents of three-year-old children in Ireland, on average, tend to report lower levels of difficult behaviour than parents of children at the same age from England, Wales, Scotland and Northern Ireland who participated in the Millennium Cohort Study (Hansen & Joshi, 2007).

**Table 4.1:** Scale composition and sample items on the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997)

Scale	Sample Item		Mean (SD)	Achieved Range	Cronbach's alpha
Peer Problems	<i>My child is rather solitary, tends to play alone</i>	<b>= Total Difficulties</b>	1.21 (1.40)	0-8	.43
Emotional Symptoms	<i>My child has many fears, is easily scared</i>		1.36 (1.40)	0-10	.46
Hyperactivity/Inattention	<i>My child is constantly fidgeting or squirming</i>		3.22 (2.18)	0-10	.66
Conduct Problems	<i>My child often fights with other children or bullies them</i>		2.19 (1.83)	0-10	.63
Pro-social	<i>My child is considerate of other people's feelings</i>	<b>= Strengths</b>	7.94 (1.77)	0-10	.63

**Figure 4.1:** Mean score on the SDQ 'total difficulties' scale at three years of age, by country

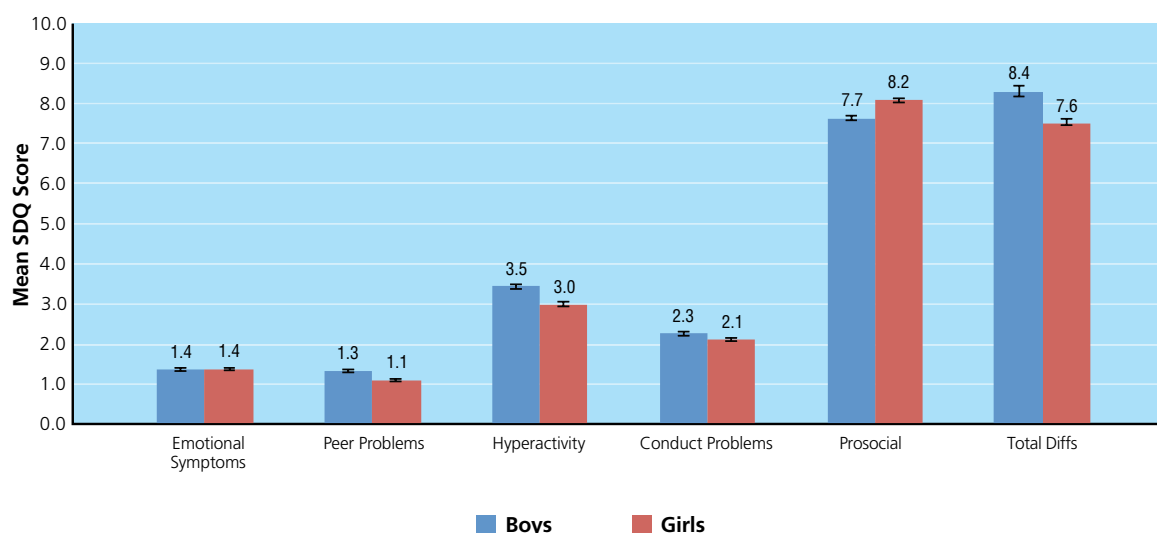


#### 4.4 SOCIO-DEMOGRAPHIC VARIATION IN CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

Gender differences were apparent in scores on indicators of behavioural problems. In general, boys were more likely to be classified in the problematic range than girls, as were children in socially disadvantaged groups.

Figure 4.2 shows the mean scores across the five subscales of the SDQ by the sex of the Study Child. There were significant differences between boys and girls on four of the five subscales. Boys showed higher levels of difficulties on the conduct problems, hyperactivity and peer-problems subscales, according to parental report. Although there were no significant difference between boys and girls on the emotional symptoms subscale, when averaged across the four dimensions comprising the total difficulties score, boys had significantly higher levels of difficulties overall. Girls by contrast scored more highly than boys on the pro-social subscale of the SDQ.

**Figure 4.2: Mean scores on the SDQ subscales and total difficulties scale, by the sex of the three-year-olds**



Goodman (1997) recommends using the 90th percentile on the total difficulties scale to define children with a problematic<sup>13</sup> behavioural profile. A total difficulties score in this range predicted a 15-fold increase in the probability of an independently diagnosed psychiatric disorder (Goodman, Renfrew & Mullick, 2000). This criterion was applied to the *Growing Up in Ireland* data to generate clinical cut-offs and this resulted in 12.5 per cent of the sample having a problematic behavioural profile. Boys were significantly more likely than girls to score in the problematic range of the SDQ total difficulties scale (14 per cent for boys vs. 11 per cent for girls). The finding that boys have higher levels of parent-reported difficulties compared with girls is common internationally (Bradshaw & Tipping, 2010; Smart, 2010). Early-manifesting difficulties in socio-emotional adjustment are associated with worse longer-term psychological health and may be an important pathway leading to educational underachievement (Deater-Deckard, Dodge, Bates & Pettit, 1998).

Social class potentially represents a number of different influences on children's health and development, including financial circumstances, parental education and family adversity. Figure 4.3 shows the relationship between household social class and the probability that a child will be classified as having a problematic behavioural profile on the total difficulties composite of the SDQ. There was a clear linear trend, showing that children in the professional group were the least likely (8 per cent) to be in the 'problematic' range, increasing to the highest rate (24 per cent) among children in the 'never worked' social group. Similar trends were evident

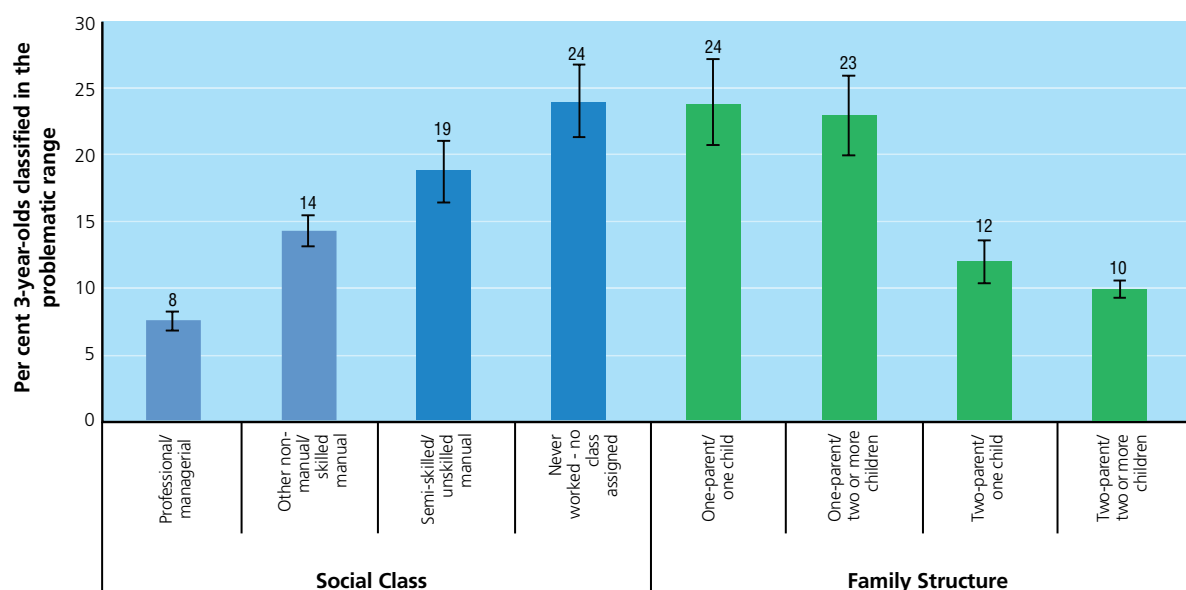
<sup>13</sup> Goodman (1997) refers to this as an "abnormal" behavioural profile. In the text below we refer to it as the "problematic range of the SDQ total difficulties scale".





across the other socio-economic indicators: for example, Figure 4.3 shows that children in one-parent families were reported (by the parent) as having more behavioural difficulties in comparison to their peers in two-parent families. Again, while this is a common finding internationally (Hansen & Joshi, 2007; Propper & Rig, 2007), such a strong class gradient in the prevalence of behavioural problems at three years of age is a worrying finding. Further systematic investigation in subsequent studies is needed; more advanced statistical techniques could go some way towards assessing whether parents in lower social classes tend to rate their child's behaviour more negatively than other parents for some reason, perhaps because they are facing other stressors that leave them less able to cope with the demands of a three-year-old.

**Figure 4.3: Percentage of three-year-old children scoring in the problematic range on the SDQ, classified by household social class and family structure**



#### 4.5 PARENTING CHARACTERISTICS AND THREE-YEAR-OLD CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

*Parenting styles that were low in warmth and consistency, or high in hostility, were associated with more behaviour problems in children – although the child's behaviour may also influence the parenting style used.*

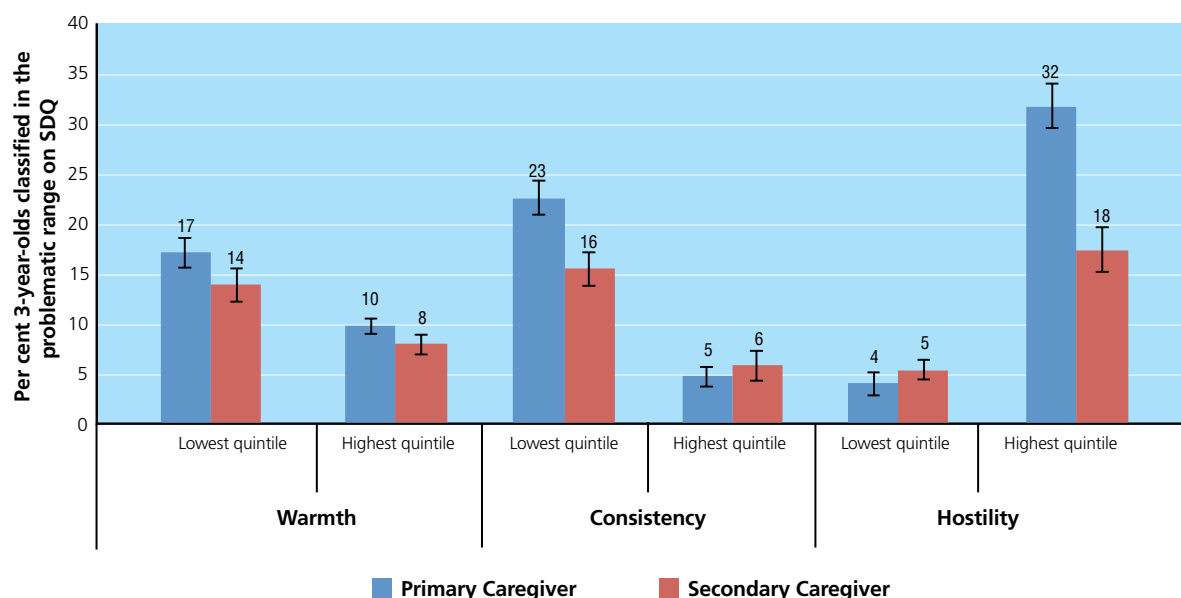
Parenting has been conceptualised as a 'functional frame' for a child's development in which the child is nurtured, protected, helped, and provided with feedback and models of behaviour (Kaye, 1984). Research shows that sensitive, responsive caregiving early in development is linked to optimal child outcomes in socio-emotional development (Lugo-Gil & Tamis-LeMonda, 2008). Conversely, difficulties in the parent-child relationship are linked to socio-emotional and behavioural problems in early childhood (Aguilar, Sroufe, Egeland, & Carlson, 2000). What parents do is thought to crucially affect the child's development, and the parent-child relationship is thought of as much more than merely a reflection of the biologically determined characteristics of parent and child (Baumrind, 1993). Sensitive parenting can serve as a protective factor in child development, protecting the child from potential risk factors such as poverty (Pettit et al., 1997) and research suggests that an authoritative style of parenting, combining warmth and responsiveness with high demands on maturity, leads to the best social and behavioural outcomes for children (Darling & Steinberg, 1993).

Parenting *styles* differ from parenting *practices* in that parenting styles set the tone for interactions, rather than being goal-directed attempts at socialising a child. In *Growing Up in Ireland*, parenting style was indexed using

a 17-item measure which yields scores for each of three parenting dimensions (see Section 6.3 for further details on this measure): warmth, consistency and hostility, with higher scores indicating higher levels of that attribute. To explore the relationship between these parenting dimensions and children's socio-emotional and behavioural adjustment, the score on each parenting dimension was divided into quintiles; the lowest quintile represents those who scored in the bottom 20 per cent of the distribution and the highest quintile those who scored above the 80th percentile. Figure 4.4 depicts the association between warmth, consistency and hostility characteristics of the Primary and Secondary Caregiver's parenting style and the percentage of children who scored in the problematic range on the SDQ total difficulties dimension.

The chart illustrates that three-year-old children whose parents scored in the lowest quintile of the warmth and consistency dimensions were significantly more likely to be classified as having a problematic SDQ profile. For example, 23 per cent of children whose Primary Caregiver scored in the lowest quintile on the parenting dimension of consistency scored in the problematic range on the SDQ compared with 5 per cent of those where the Primary Caregiver scored in the highest quintile. Figure 4.4 also shows that the children of parents who scored highly on the hostility dimension were significantly more likely to score in the problematic range on the SDQ. It should be acknowledged, however, that parenting styles are not necessarily causally related to SDQ outcomes, but that parenting styles may develop in response to perceived behavioural difficulties, or that some third factor may either mediate the relationship between parenting and children's socio-emotional development (e.g. child temperament) or be a common cause for both (e.g. parental stress). Given the breadth of information collected by *Growing Up in Ireland*, and the emerging longitudinal capacity of the data, further analyses to more extensively investigate these pathways will be possible in future reports.

**Figure 4.4: Percentage of three-year-old children scoring in the problematic range on the SDQ, by Primary Caregiver's parenting characteristics**





## 4.6 INFANT TEMPERAMENT AND CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

*Infant temperament at nine months was associated with parent-reported problematic behaviours at three years.*

The last decade has witnessed increasing interest in the relationship between individual differences in early-emerging temperament characteristics and children's later socio-emotional and behavioural development (Henderson & Wachs, 2007). Temperament can be defined as biologically based individual differences in behavioural tendencies which present early in life and remain relatively stable across contexts and time (Meadows, 2010). Temperament is instrumental in guiding emotional and behavioural adaptation (Martin & Fox, 2008), is thought to be linked to an individual's genetic endowment (Posner, Rothbart & Sheese, 2007), and is closely linked to the development of the child's personality (Rothbart, 2007). It is involved in the development of attention, behavioural self-regulation and emotional regulation processes and is related to successful adjustment in academic, social, and personal situations (Martin & Fox, 2008; Sanson, Hemphill & Smart, 2004). Indeed, research has shown that a temperament style which includes negative emotionality, low adaptability and high levels of inhibition and reactivity places the child at risk for internalising and externalising problems, and this risk is heightened by the co-occurrence of other factors in the child's environment such as dysfunctional parenting or low socio-economic status (Meadows, 2010).

How do early-emerging individual differences in the temperamental traits of the child interact with other parental influences to shape children's socio-emotional development? In *Growing Up in Ireland*, infant temperament at nine months of age was indexed using the Infant Characteristics Questionnaire (ICQ) (Bates et al., 1979). This 24-item parent-report instrument yields scores for each of four subscales: (1) fussy-difficult (intense reactions to stimuli); (2) unadaptable (aversion and slow adaptation to changes in the environment); (3) subdued<sup>14</sup> (lack of vigour in interactions); (4) unpredictable (irregularity in eating, sleeping, etc). Respondents indicate the extent to which each item is characteristic of their infant on a seven-point rating scale, with '1' describing an optimal temperamental trait and '7' describing a more difficult temperamental trait. Higher scores on each scale are therefore indicative of a more problematic temperamental disposition. Sample items in respect of each of the scales are shown below:

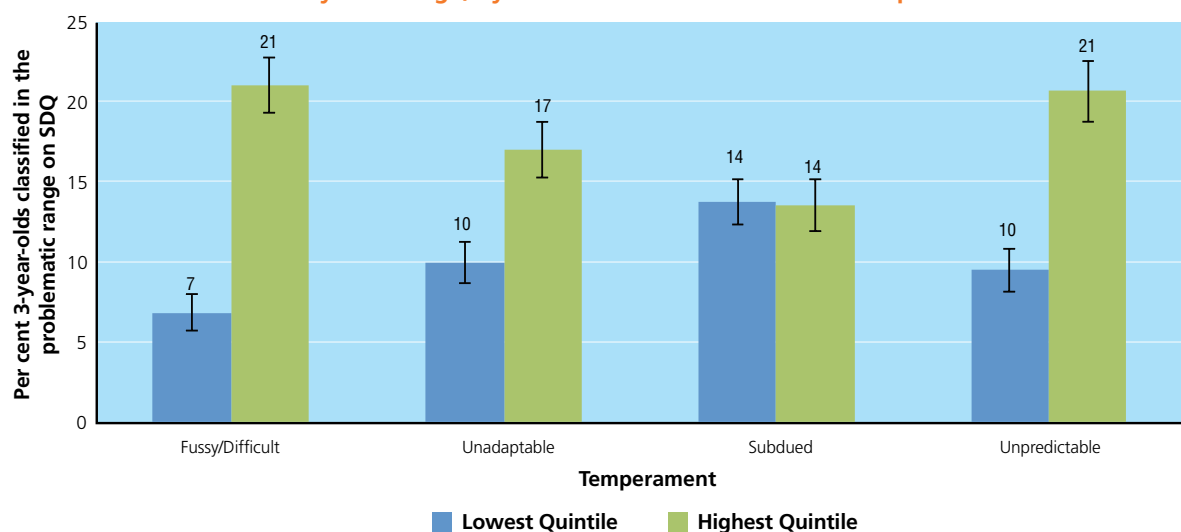
- Fussy/Difficult (e.g. How much does your baby cry and fuss in general?)
- Unadaptable (e.g. How does your baby typically respond to a new person?)
- Subdued (e.g. How much does your baby smile and make happy sounds?)
- Unpredictable (e.g. How easy or difficult is it for you to predict when your baby will sleep and wake up?)

It has been posited that difficult temperament during early childhood, as defined by excessive crying, poor consolability and high reactivity, is linked to more aggression and poorer social functioning at later ages (Kagan, 1994) and may act as a vulnerability factor for both internalising and externalising problems (Tschann et al., 1996). To examine the extent to which early-manifesting differences in the temperamental disposition of the infant at Wave 1 were associated with variation in children's psychological adjustment at Wave 2, scores on each dimension of the ICQ were divided into quintiles.

Figure 4.5 shows that children who scored in the highest quintile on each of the fussy/difficult, unadaptable and unpredictable scales of the ICQ at nine months of age were more likely to be rated by their caregiver as having a problematic behavioural profile at three years of age than those who scored in the lowest quintile. For instance, 21 per cent of children who scored in the highest quintile on the fussy/difficult dimension scored in the problematic range on the SDQ total difficulties scale compared with only 7 per cent of those who scored in the lowest quintile. There were no differences in the prevalence of behavioural problems among those who scored in the top and bottom quintiles on the temperament dimension 'subdued'.

<sup>14</sup> The test authors termed this dimension 'dull' in the original measure.

**Figure 4.5:** Percentage of children scoring in the problematic range on the SDQ total difficulties scale at three years of age, by characteristics of the infant's temperament at nine months of age



#### 4.7 INFANT TEMPERAMENT AND PARENTING STRESS

*A difficult infant temperament at nine months is associated with parental stress at both nine months and three years.*

It is becoming increasingly clear that children's temperaments shape their outcomes, in part by influencing the manner in which they engage with, and evoke responses from, people in their environments (Shiner, 2005). The 'goodness of fit' between temperament characteristics and the social environment is being increasingly recognised in interactive models of child vulnerability and resistance. For example, research has shown that more emotionally negative children evoke more negative parental responses than less emotionally negative children in the same family (Jenkins, Rasbash & O'Connor, 2003). As with all risk factors, temperament styles may make the successful negotiation of developmental milestones in social, emotional and behavioural functioning more difficult, but they do not make success impossible. There are many pathways to development and these pathways are malleable (Hinshaw, 2008).

**Figure 4.6:** Mean scores on the parental stress scale when children were nine months and three years, by characteristics of the infant's temperament measured at nine months of age

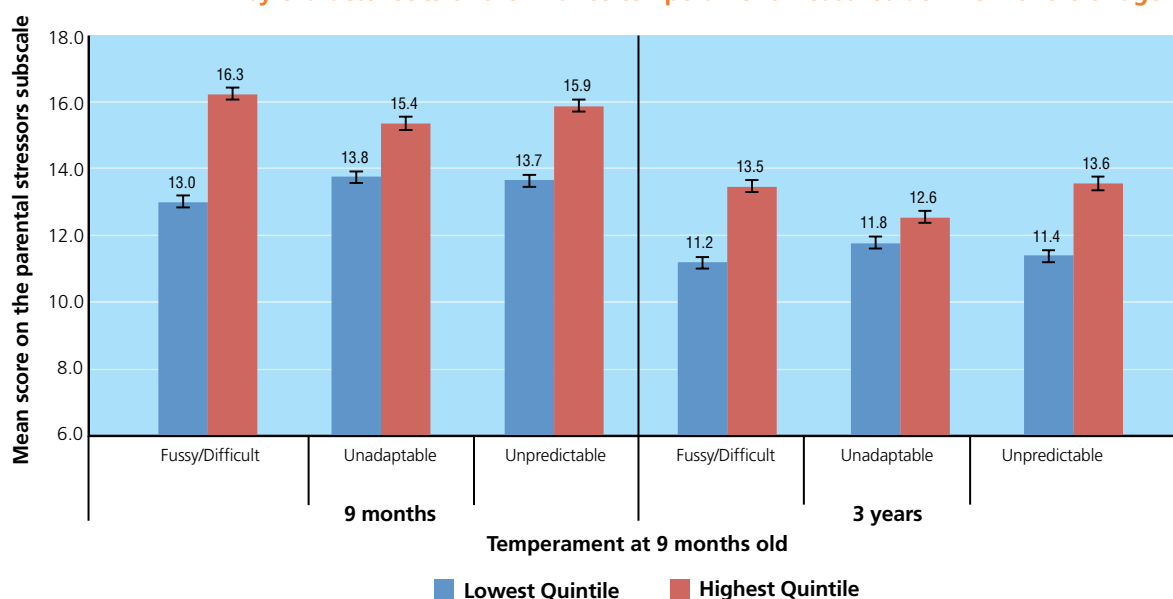




Figure 4.6 shows mean scores, at Wave 1 and again at Wave 2, on the parental stressors subscale of the Parental Stress Scale (Berry & Jones, 1995) by characteristics of the child's temperament when he/she was nine months old. It is evident that parents of children who scored in the highest quintile on the fussy/difficult, unadaptable and unpredictable dimensions of the Infant Characteristics Questionnaire at Wave 1 had significantly higher scores on the parental stressors subscale of the Parental Stress Scale at both time points compared with those who scored in the lowest quintile. This could be a reciprocal relationship and the fall in parental stress scores is positive.

## 4.8 PARENTING STRESS AND CHILDREN'S SOCIO-EMOTIONAL DEVELOPMENT

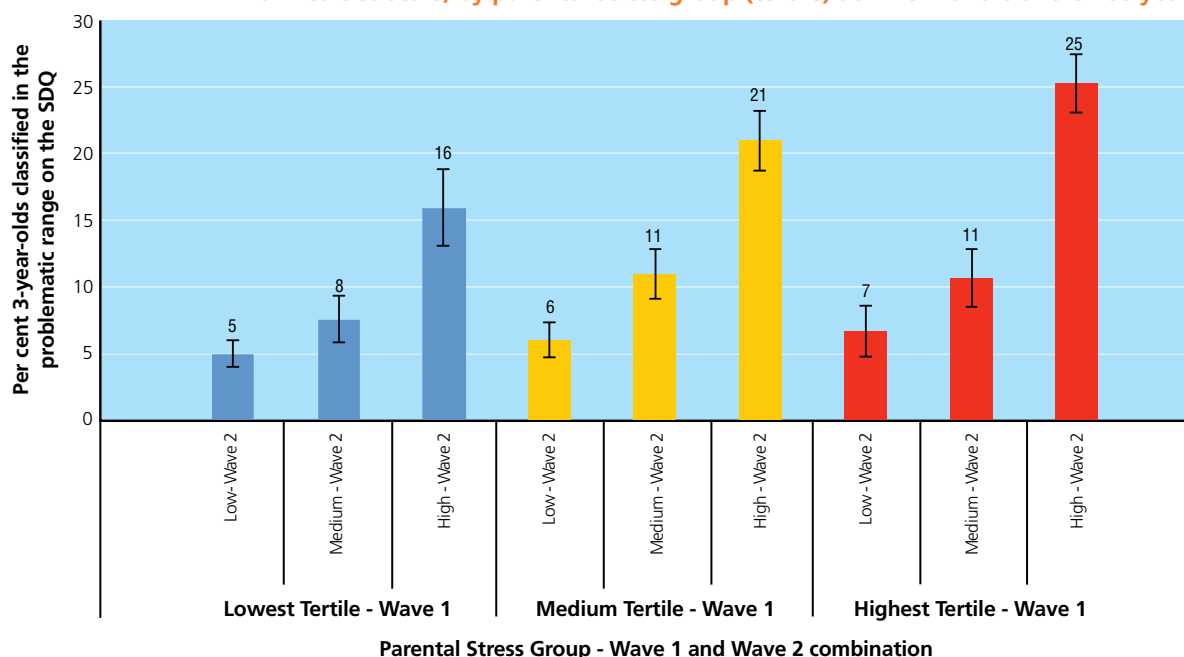
*Increases in parental stress between interviews were associated with an increased likelihood of behavioural problems.*

Increased parenting stress has been identified as a prominent risk factor for higher levels of child behavioural problems (Barry, Dunlap, Cotten, Lockman & Wells, 2005). Parenting stress is associated with negative parenting attitudes, negative parenting behaviours, and lower parental well-being (Crnic, Gaze & Hoffman, 2005). Although much research has focused on the determinants of parenting stress, which include poverty, social disadvantage, lack of education and poor child health (Warfield, 2005 & Erikson, 2005), it is the consequences of parenting stress for children's developmental outcomes that is of interest in the present context. For example, studies have shown that parenting stress is associated with a range of adverse child outcomes including insecure attachment and behavioural problems (Crnic & Low, 2002). Stress and associated parent relationship difficulties may also indirectly contribute to negative outcomes by affecting the quality of parenting and the parent-child relationship (Hanington et al., 2012).

To explore the extent to which the experience of parenting stress was predictive of childhood behavioural problems at three years of age, scores on the parental stressors subscale were divided into tertiles to facilitate comparison of the 'more stressed' caregivers with those who were at the middle or lower end of the scale (labelled 'high', 'medium' and 'low'). As data were available for two time points, this resulted in the creation of a 3 x 3 contingency table (nine groups) representing continuity or changes in the experience of parenting stress over time. Figure 4.7 shows that higher levels of parenting stress were associated with significantly higher levels of childhood behavioural problems and that the risk was increased if the parent experienced higher levels of stress across both time points. For example, five per cent of children were classified as having a problematic behavioural profile on the SDQ where the Primary Caregiver scored in the less-stressed group of the parenting stress score at both Wave 1 and Wave 2 (low-low), but the prevalence of behavioural problems increased to 25 per cent among parents who were in the more-stressed group on the parental stress scale at both time points (high-high).

Interestingly, a decline in parenting stress over time was associated with reduced risk of the child having a behavioural problem at three years of age, while increases in parental stress over time were associated with increased risk of behavioural problems. For example, the rate of behavioural problems was 7 per cent amongst those who scored high on the parental stress measure when their children were nine months (Wave 1) and low when they were three years old (Wave 2) compared with 16 per cent among those who scored low when children were nine months (Wave 1) and high when they were three years old (Wave 2)

**Figure 4.7:** Percentage of three-year-old children scoring in the problematic range on the SDQ total difficulties scale, by parental stress group (tertile) at nine months and three years of age



## 4.9 SUMMARY

This chapter has considered variations in the child's psychological, socio-emotional and behavioural adjustment at three years of age. It found that children in Ireland score significantly lower on the total difficulties scale of the Strengths and Difficulties Questionnaire (SDQ) at three years compared to children participating in the (UK) Millennium Cohort Study. Boys were significantly more likely than girls to score in the problematic range on the SDQ; 14 per cent of boys compared with 11 per cent of girls were in the problematic range on the scale using the 90 per cent cut-off.

The prevalence of childhood behavioural problems was strongly correlated with socio-demographic and family characteristics, the latter including parenting dimensions of warmth and hostility. Infant temperament was found to be highly predictive of behavioural problems at three years of age; 21 per cent of children who scored in the highest fussy/difficult quintile of temperament at nine months scored in the problematic range of the SDQ at three years, compared with 7 per cent of those in the lowest fussy/difficult quintile. Difficult infant temperament at nine months also predicted higher levels of parental stress across the two waves, underlining the importance of appropriate parenting supports to reduce parental stress and foster more positive interactions between parents and children.

### Next steps: opportunities for further analysis

Further investigation is warranted into the mechanisms underlying the associations between parental stress and the child's behavioural outcomes. To what extent is the child's behaviour a source of stress; for example, in Wave 1 did the parent also report a difficult temperament and problems with crying or sleeping? What changed between waves for parents whose levels of stress increased – perhaps the marital relationship has worsened or has there been a decline in the household's financial situation? Identifying particular crisis points or risk factors may help to optimise the timing of support services to families experiencing stress.

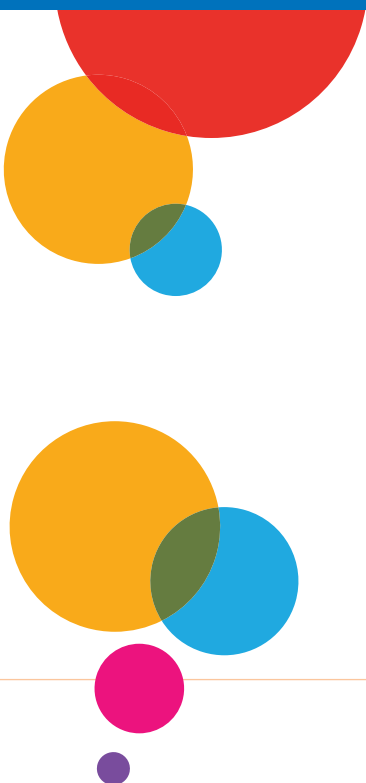
Related to this question is the need for further investigation into the apparent relationship between socio-economic disadvantage and children's poorer emotional and behavioural adjustment, as indicated by the SDQ. Is stress a mediating factor in this relationship, either because normal boisterous behaviour is viewed more negatively by already stressed parents, or is child well-being in this group objectively at risk because parents are finding it difficult to adequately manage all aspects of family life?





# Chapter 5

## COGNITIVE AND LANGUAGE OUTCOMES AT THREE YEARS



## 5.1 INTRODUCTION

The stage of life between birth and three years is a particularly intensive one for brain development, especially in relation to cognition and language. As well as getting bigger and running around, three-year-olds are better able to manipulate small objects like crayons and toys, and are frequently inquisitive about the world around them. Perhaps the biggest change since the first *Growing Up in Ireland* interview is the development of language, both receptive and expressive; this new ability broadens the possibilities for researchers to interact directly with the children and measure some of their developing skill-sets. At the three-year-old follow-up, interviewers recorded indicators of the child's reasoning and vocabulary development, using a combination of direct assessment of the Study Child and questions to the Primary Caregiver. This chapter provides descriptive statistics on how the children are developing in these domains, as well as comparing the progress of different groups of children. It also relates some measures from when the child was a nine-month-old infant to age three outcomes.

## 5.2 COGNITION AND LANGUAGE

*Girls performed measurably better on tests of cognitive ability than boys. Social gradients, particularly in relation to the educational level of the Primary Caregiver, were emerging strongly. Children who did not meet expected scores on developmental measures at nine months were at greater risk of lagging behind their peers at three years.*

Children in *Growing Up in Ireland* undertook two standardised tests, administered directly by the interviewer in the home. These tests were the Picture Similarities and Naming Vocabulary scales from the British Abilities Scales (BAS; Elliott, Smith & McCulloch, 1996), measuring reasoning/problem-solving and vocabulary respectively. In the Picture Similarities test, children were shown a page with four pictures and given a card with a fifth picture on it. The child was asked to match the card to one of the four pictures based on some shared characteristic or construct (e.g. a card showing a stamp was matched to the picture of an addressed envelope). In the Naming Vocabulary test, the interviewer showed the child pictures of everyday objects (e.g. a shoe) and the child had to say the name of the object (in English). Only children whose Primary Caregiver judged them to have sufficient English attempted the vocabulary test.

The tests produce raw scores which were transformed to standardised 'ability scores'; these were used in the statistical analysis. Table 5.1 shows the mean scores for all of the three-year-olds as well as the 25th, 50th and 75th percentile scores.<sup>15</sup> Higher scores indicate a better performance on the tests. This table also shows the equivalent scores estimated at each percentile point according to the norms in the BAS manual (Elliott, et al., 1996). A comparison of these scores suggests that the GUI sample is somewhat ahead of the standardisation sample at each point apart from the 25th percentile of the Naming Vocabulary (although the latter comprised just 127 children aged between three years and three years, 11 months).

**Table 5.1: Descriptive statistics for the GUI sample on the BAS Picture Similarities and Naming Vocabulary tests, including a comparison of equivalent percentile scores from the BAS standardisation sample<sup>16</sup>**

	Picture Similarities		Naming Vocabulary	
	GUI	BAS Norms	GUI	BAS Norms
Mean	60	-	75	-
25th Percentile	53	48	60	64-65
50th Percentile (Median)	62	58-59	78	76
75th Percentile	70	66-67	87	85

<sup>15</sup> The 25th percentile score is the score at which 25% of the children scored at or below. Hence if a child had an ability score on the Picture Similarities test of 53 (the 25th percentile score), this indicates that a quarter of children scored the same or less than this child and the remaining three-quarters had a higher score.

<sup>16</sup> Note that the BAS manual provides 24th percentile and 76th percentile scores rather than 25th and 75th respectively



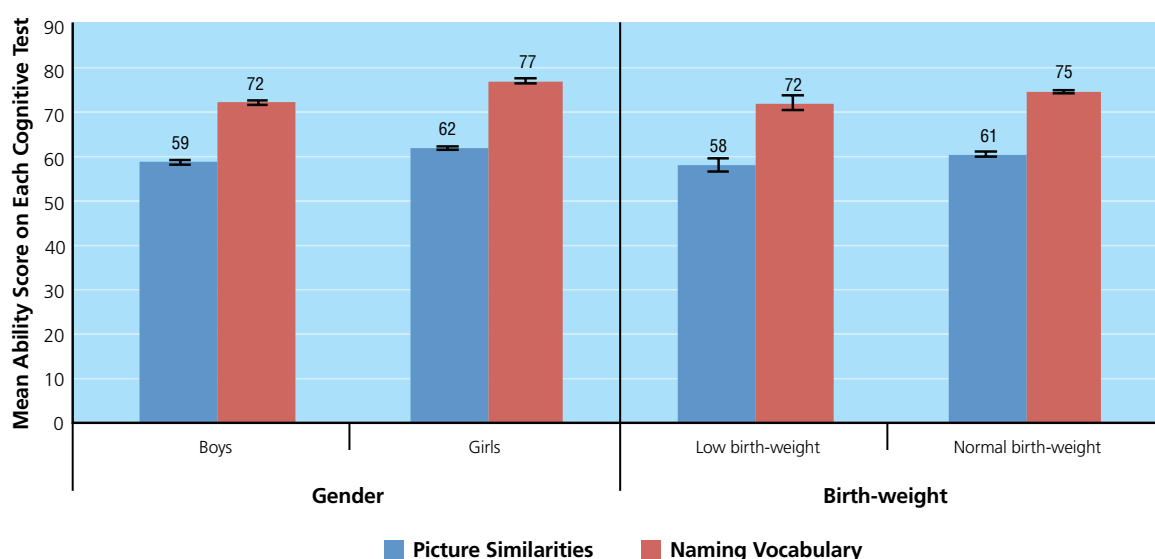


### 5.2.1 COGNITIVE DIFFERENCES ACCORDING TO SEX, BIRTH-WEIGHT AND HOUSEHOLD CHARACTERISTICS

Trends of girls outperforming boys in tests related to academic achievement and literacy have been observed among older children both nationally and internationally. For example, 15-year-old girls outperformed boys on a test of reading performance in all 65 OECD countries and partner countries, including Ireland (OECD, 2010). Data from three-year-olds taking part in the (UK) Millennium Cohort Study (MCS) suggest that the gap between the sexes emerges even before formal schooling commences; Ermisch (2008) reported that girls performed significantly better than boys on both the BAS Naming Vocabulary test and another cognitive test of school-readiness. Figure 5.1 shows that this pattern is also evident in the *Growing Up in Ireland* sample: girls achieved a higher mean score on both the Picture Similarities and Naming Vocabulary tests. While the reasons for the sexes differing in their performance on tests relating to academic ability, particularly those on literacy and vocabulary, continue to be debated, suggested mechanisms include differences in temperament, parental encouragement and brain development.

Differences in brain development are a likely contributing factor to the disadvantage observed among children born at low birth-weight (also illustrated in Figure 5.1). Structural differences in brain development have been observed in individuals born at low birth-weight even up to adolescence, and these differences have been suggested as a likely mechanism to explain the lower IQ scores associated with low birth-weight and premature birth (Aylward, 2005). Among the *Growing Up in Ireland* children, three-year-olds born at low birth-weight had lower mean scores on both cognitive tests relative to other children.

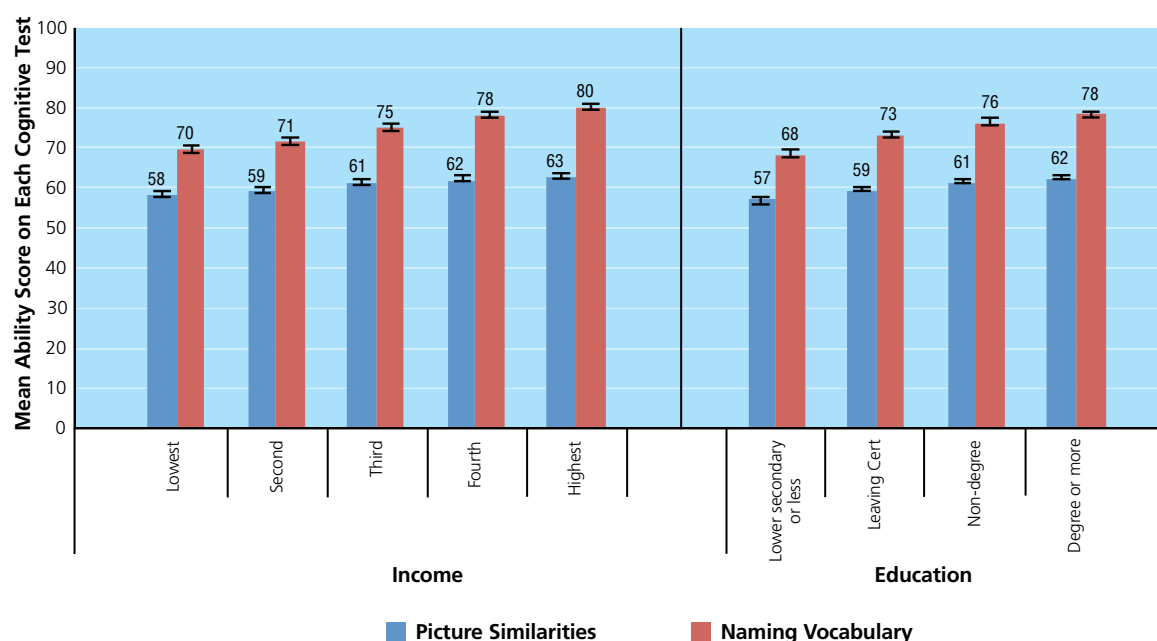
**Figure 5.1: Mean ability scores of three-year-olds on the Picture Similarities and Naming Vocabulary tests, according to gender and low birth-weight status**



Differences in the abilities of children are not just biologically determined, however. International research has also considered the role of socio-demographic characteristics within the developing child's family context. Research using longitudinal data from the British 1970 Cohort (BCS70) by Feinstein (2003) showed that developmental indices of children as young as 22 months were predictive of educational qualifications at age 26 years. Furthermore, Feinstein found that children who performed less well on early assessments were much more likely to catch up over time if they came from better-educated and wealthier backgrounds, whereas more able children in less advantaged contexts lagged behind, highlighting the importance of identifying social differences in cognitive development as early as possible.

In *Growing Up in Ireland* at three years, scores on the Naming Vocabulary assessment were positively related to higher Primary Caregiver education and higher income, as illustrated in Figure 5.2. In particular, there was a difference of at least 10 points in the mean scores on the Naming Vocabulary tests between children in the least and most advantaged groups on both socio-demographic indicators. Previous research in other countries has established a link between the socio-economic status (SES) of homes and the language development of young children. Work in the USA by Hart and Risley (1992) suggests that this effect is mediated by the better quality of language interactions (e.g. repeating, paraphrasing, extension of child's statements) that children are exposed to in higher-SES homes. Research using the Millennium Cohort Study in the UK reported considerable differences in children's vocabulary (using the same measure as *Growing Up in Ireland*) according to parental education at both age three and age five, and also observed that the vocabulary of children of higher-educated parents increased more rapidly between waves (Becker, 2011). Becker additionally found that children from lower-educated households who attended pre-school fell less behind than those who had not.

**Figure 5.2: Mean ability scores of three-year-olds on the Picture Similarities and Naming Vocabulary tests, according to Primary Caregiver's education and household income quintile**



## 5.2.2 ACTIVITIES IN THE HOME

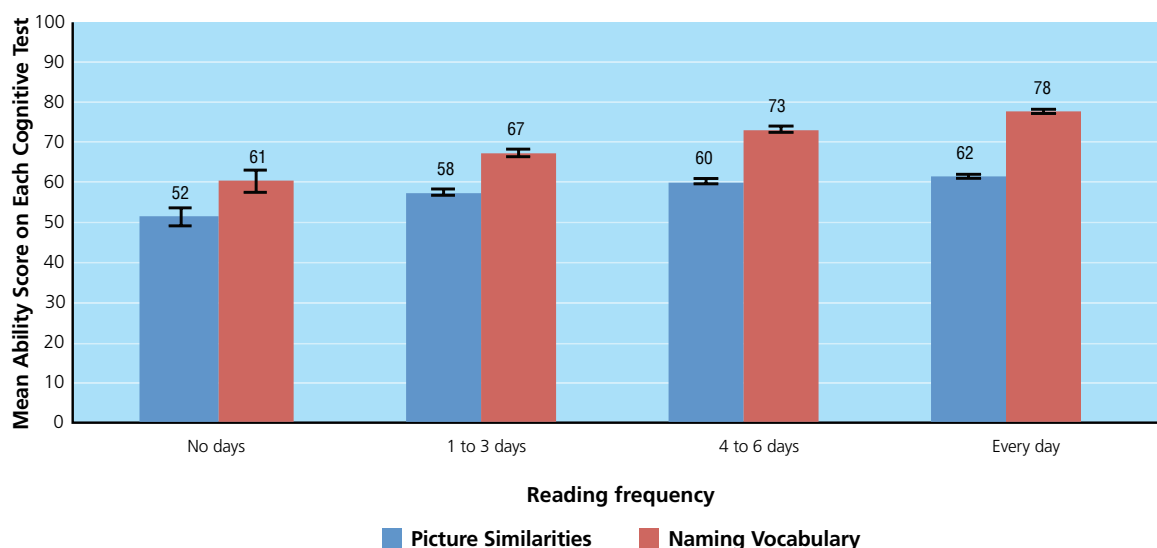
Other research on the vocabulary of three-year-olds in the (UK) Millennium Cohort Study (Ermisch, 2008) found a considerable part of the observed advantage for children from higher-income households was explained by the increased frequency with which these parents engaged in activities such as reading to the child. Research using *Growing Up in Australia* data found a positive association between parent-child reading and later vocabulary scores even among very young children (Farrant & Zubrick, 2012). Reading to children taking part in *Growing Up in Ireland* was likewise associated with higher scores not just on the Naming Vocabulary test but also on the Picture Similarities assessment. Children living in homes where somebody read to them every day had a mean score on the Naming Vocabulary test that was 17 points higher than those in homes where there was no regular reading (Figure 5.3). While the gap in mean scores between these two groups was less stark for the Picture Similarities test (62 compared to 52), it was still significant.

Reading to the child every day was more common in homes where the Primary Caregiver had degree-level education or above (70 per cent) than in homes where the Primary Caregiver's education was at lower secondary or less (39 per cent), although in a multivariate analysis reading frequency did not fully account for the



differences according to parental education observed earlier (or vice versa). Future analyses should have the scope to apportion the indirect effect of socio-demographic variables through in-home activities such as reading, and in so doing help to assess the relative merits of encouraging parents in all socio-demographic categories to invest more time and effort in this activity.

**Figure 5.3: Mean ability scores of three-year-olds on the Picture Similarities and Naming Vocabulary tests, according to frequency (days per week) with which someone at home reads to the child**



### 5.2.3 ENGLISH AS A SECOND LANGUAGE AND DISADVANTAGES FOR VOCABULARY

Over a fifth of Primary Caregivers (21 per cent) of three-year-olds were not born in Ireland, and nearly 8 per cent of the Study Children spoke a language other than English as their first language, including the 0.4 per cent of children who spoke Irish. The most frequent first language other than English was Polish (nearly 3 per cent) but over 50 different (first) languages were recorded in the sample. When administering the cognitive assessments (in English), interviewers were informed by the child's Primary Caregiver as to whether or not the child had sufficient English to attempt the tests. This was particularly relevant for the Naming Vocabulary test as only answers in English were acceptable. For the Picture Similarities test, once the child had sufficient English to understand the instructions, he/she indicated responses using gestures. Just over 3 per cent of the sample did not attempt the Naming Vocabulary test because of insufficient English (according to the Primary Caregiver); just less than 1 per cent did not attempt the Picture Similarities test for the same reason.

Even among the children thought (by the Primary Caregiver) to have sufficient English to attempt the Naming Vocabulary assessment, those who did not speak it as their first language were at a significant disadvantage. The mean score for this group of children was just 49 compared to a mean vocabulary score of 76 for children whose first language was English. While this is not to suggest that children who do not speak English as a first language necessarily have a poorer vocabulary in their first language, it does raise issues in relation to a potential disadvantage for them if, and more likely when, they start formal schooling in English. A handbook for Irish primary school teachers on the topic of 'Integrating non-English speaking pupils into the school and curriculum' notes that "when a pupil's level of proficiency in English is extremely low, for example in the early weeks after arrival, access to mainstream class learning may be virtually impossible" (Integrate Ireland Language and Training, 2003, p.8). However, the same handbook notes that the challenge for pupils in Junior and Senior Infants is much less than for older pupils.

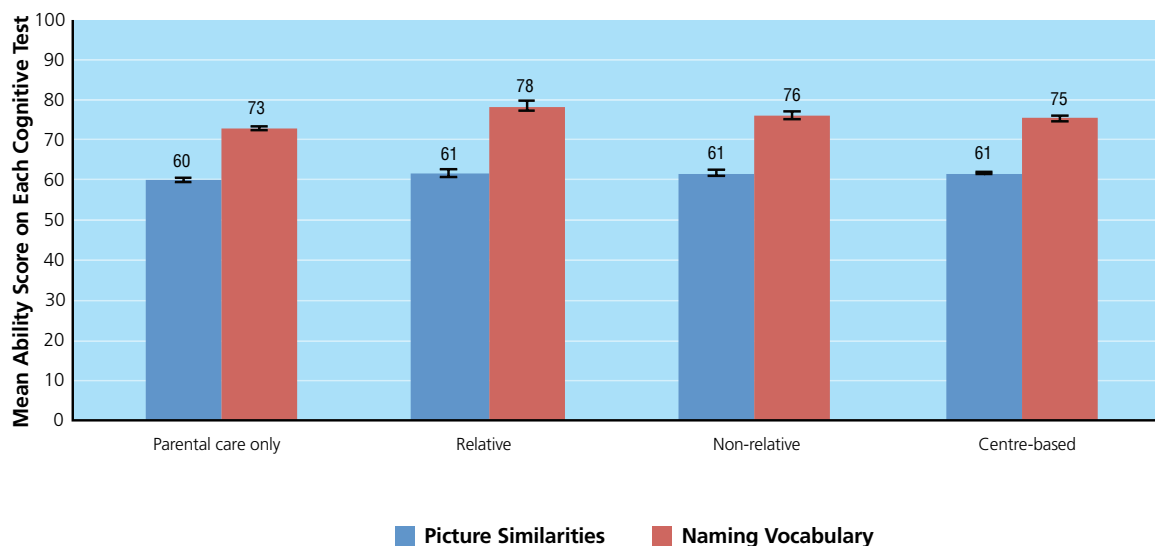
Interestingly, there was no significant difference between the two groups of three-year-olds on the Picture Similarities test; the two groups had an identical mean score of 60. This suggests that the difference in scores on the measure of vocabulary is due to the children's poorer English and not to any difference in underlying cognitive development, and confirms the importance of including a non-language-based assessment for children not fluent in English.

#### 5.2.4 CHILDCARE AND COGNITIVE SCORES OF THREE-YEAR-OLDS

Figure 5.4 shows that, while there were some indications that the 50 per cent of children with no regular non-parental care (for at least eight hours per week) had somewhat lower scores on the cognitive tests relative to children in some form of regular care, most of this difference becomes non-significant once adjustments are made for differences in family income. The principal exception was the positive effect on the child's vocabulary associated with having regular care from a relative (11 per cent of the sample); children for whom this was their main type of non-parental care had the highest mean score on the Naming Vocabulary test (78). Possible mechanisms for improved vocabulary for those in non-parental care include exposure to a wider, or at least different, vocabulary from other carers and increased opportunity to use their existing vocabulary with carers or other children; however, these mechanisms do not necessarily explain why relative care should result in higher vocabulary scores than care by a childminder or crèche.

The majority of relatives providing childcare to *Growing Up in Ireland* Study Children were grandparents (see Chapter 7 of this report). Research using (UK) Millennium Cohort Study data has previously highlighted a positive relationship between vocabulary and grandparent care (of infants) for children aged three years (Hansen & Hawkes, 2009). It was hypothesised by those authors that this was due to grandparents making up for fewer physical activities by talking to the child more, speaking more slowly and being more grammatically correct in their speech.

**Figure 5.4: Mean ability scores for three-year-old children on the Picture Similarities and Naming Vocabulary tests, according to their main type of non-parental care (including 'none/partial')**



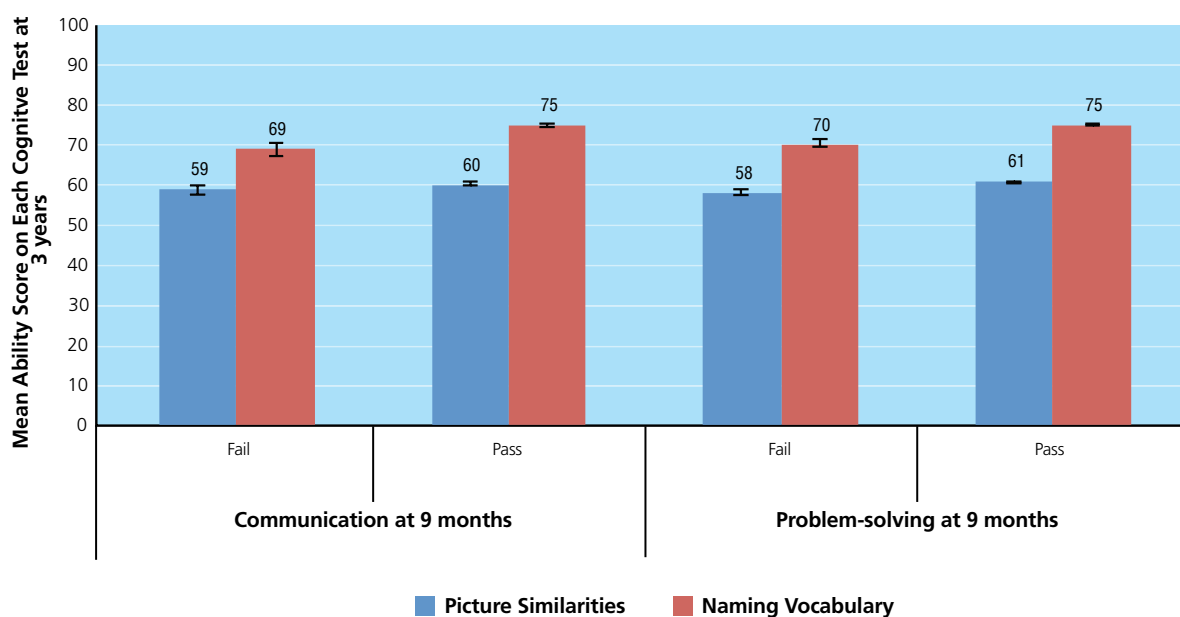
\* 'Parental care only' includes children having less than eight of hours of non-parental care per week or only on an occasional basis as well as those who never have non-parental care. Other children may have been experiencing more than one type of non-parental care.



### 5.2.5 COGNITIVE DEVELOPMENT FROM INFANCY TO THREE YEARS

At age nine months, information on infant development was collected from Primary Caregivers using a self-report measure called the Ages & Stages Questionnaire (ASQ).<sup>17</sup> A pass/fail categorisation was recorded in five areas of development: *communication*, *gross motor* (balance, using arms and legs), *fine motor* (using hands and fingers), *problem-solving* and *personal-social*. Failure in any of the ASQ developmental categories in infancy was associated with lower mean scores on both the Picture Similarities and the Naming Vocabulary assessments at three years of age. However, arguably the two ASQ domains closest in concept to these three-year tests are *problem-solving* (similar to Picture Similarities) and *communication* (similar to Naming Vocabulary). Figure 5.5 shows that three-year-olds who had failed to reach the target score on the *problem-solving* measure as infants had a mean score on the Picture Similarities test that was three points behind their peers who had met the target score in the earlier wave. There was a difference of six points on the Naming Vocabulary test between those who had passed or failed the infant measure of communication (although there was also a difference of five points on this test for those who passed or failed the problem-solving measure). While these absolute differences are small, they suggest that there is a group of children whose risk of poor cognitive outcomes may be detectable as early as nine months.<sup>18</sup>

**Figure 5.5:** Mean ability scores on each cognitive test for children at three years who had passed or failed to meet the ASQ target scores in the domains of communication and problem-solving as infants (at nine months)



## 5.3 PROBLEMS WITH SPEECH AND LANGUAGE DEVELOPMENT

Nearly one-in-five Primary Caregivers had concerns about their child's speech and language development. Boys were more likely to have problems than girls. Just under a third of children with a speech and language issue had received some treatment for it.

Learning to talk is considered a major developmental milestone of early childhood. The most intensive period of speech and language development is during the first three years of life, and the pre-school period is the time when developmental delays in this area are most likely to manifest (Cohen, 2005). It has been estimated that speech and language problems affect 5-8 per cent of pre-school children (Nelson, Nygren, Walker & Panoscha, 2006); these are important from a developmental perspective because they are associated with considerable risk of problems in the future. Speech and language difficulties often persist into the school years and prospective studies have shown that speech and language impairments (SLI) are associated with poorer behavioural, socio-emotional and academic outcomes (Beitchman et al., 1996; Silva, Williams & McGee, 1987).

<sup>17</sup> Squires, Potter and Bricker (1999)

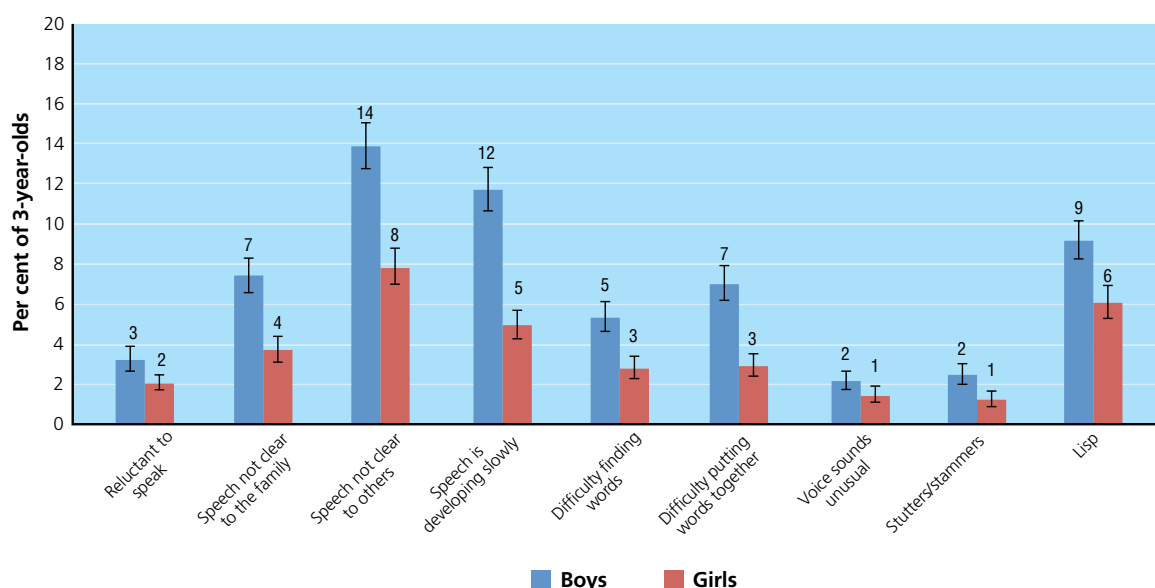
<sup>18</sup> Analyses using the ASQ scores at nine months old control for premature birth.

### 5.3.1 GENDER DIFFERENCES

The Primary Caregiver was asked whether they had any concerns about how the child talked and made speech sounds. Although the majority of respondents (81 per cent) indicated that they had no concerns about any aspect of their child's speech and language development, a sizeable minority expressed some level of concern: 15 per cent reported that they were a *little* concerned, and a further 4 per cent that they were concerned a *lot*. There was a much higher prevalence of speech and language problems among boys (24 per cent) than girls (14 per cent).

Parents who indicated that their child had a speech or communication problem were asked the nature of the difficulty, using a multiple-response question so respondents could endorse more than one category. The most frequently reported problem was that the child's speech was *not clear to others* (11 per cent) followed by *speech is developing slowly* (8 per cent) and *lisp or difficulty pronouncing certain letter combinations* (8 per cent). Boys had higher rates of difficulties across all response categories. This relationship was particularly pronounced with respect to speech delay (12 per cent for boys compared with 5 per cent for girls). Figure 5.6 summarises the percentage of children reported as having various types of speech or language difficulties, by the gender of the Study Child.

**Figure 5.6: Percentage of three-year-old children reported as having a speech or language problem, by gender of Study Child**



Parents who indicated that their child had a speech or language problem were asked whether their child had received treatment for the problem. A worrying finding was that only one in three (33 per cent) of all children affected by a speech or language problem had received treatment for the problem. Notably, girls with a speech or language difficulty were significantly less likely to have received treatment for the problem compared with boys (36 per cent versus 27 per cent). Further consideration should be given to whether this difference in seeking treatment is due to boys having more pronounced or more serious speech and language problems; for example, boys had a higher rate of *speech developing slowly*, which may concern parents more than something like *voice sounds unusual*.



### 5.3.2 LINKS BETWEEN COMMUNICATION DELAY AT NINE MONTHS AND SPEECH AND LANGUAGE CONCERNS AT THREE YEARS

Figure 5.7 shows the percentage of children reported as having a speech or language problem at Wave 2 by whether they had passed the *communication* component of the Ages and Stages Questionnaire (ASQ) at Wave 1. Failure to achieve the communication milestones on this developmental assessment battery at nine months of age was somewhat predictive of speech and language difficulties at three years of age. That is, 22 per cent of parents whose child had failed the ASQ communication milestone at nine months of age had some concerns about their child's speech and language development at three years of age, and 10 per cent had a lot of concerns. The corresponding prevalence of speech and language problems among those who had passed the ASQ communication milestone at Wave 1 was 15 per cent and 4 per cent respectively.

**Figure 5.7:** Percentage of children whose Primary Caregiver was concerned about a speech or language problem at three years of age by their performance on the Ages and Stages Communication scale at nine months of age

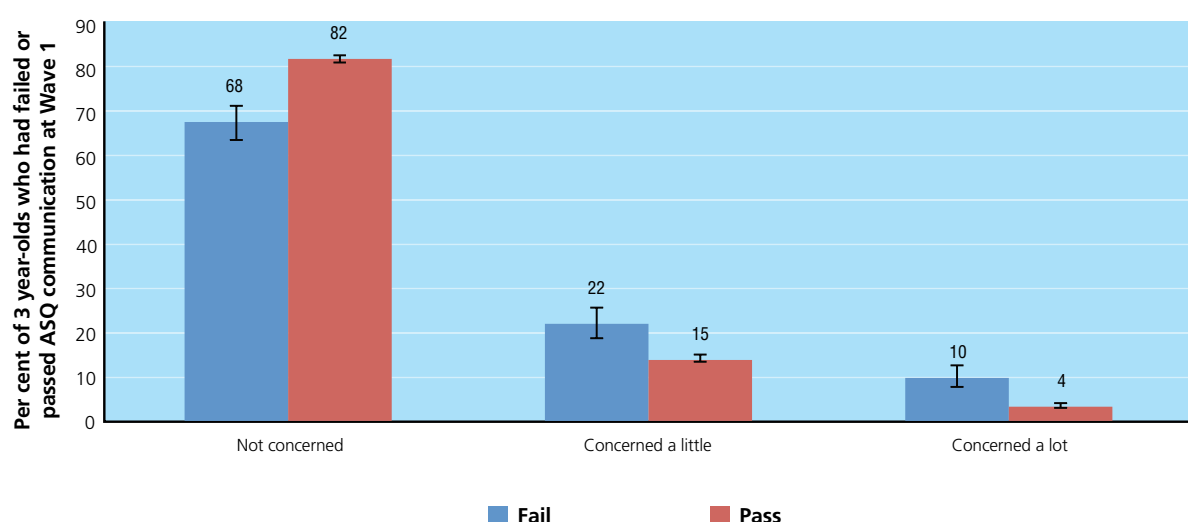
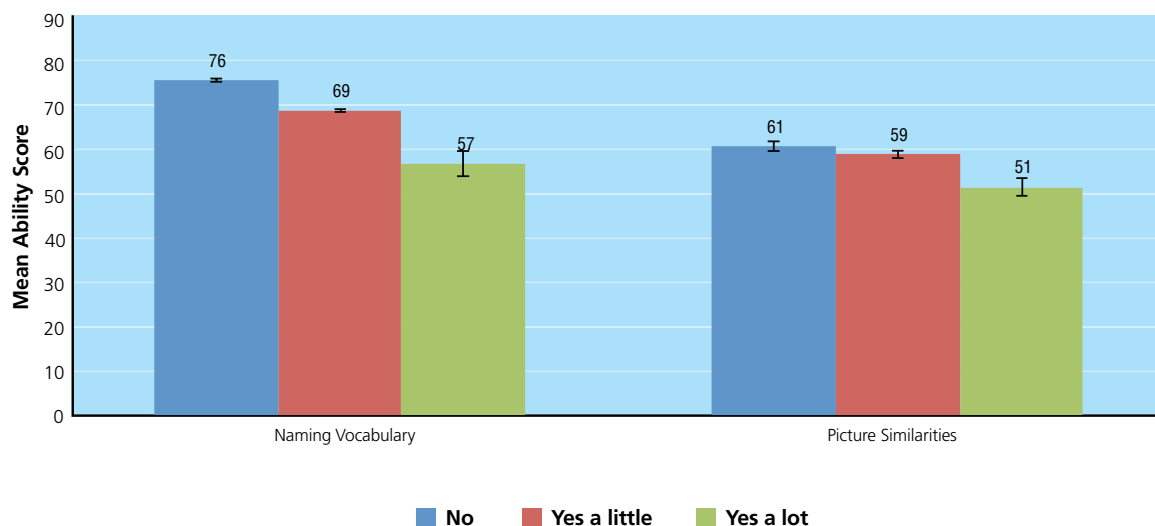


Figure 5.8 shows the relationship between parent-reported concerns about speech and language difficulties and children's performance on the cognitive ability tests. This is of interest from a longitudinal perspective because studies have found that children with early-manifesting speech or language impairment have poorer reading skills in childhood (Silva et al., 1987) and poorer educational outcomes in adolescence (e.g. Snowling, Adams, Bishop & Stothard, 2001). In agreement with the findings of other studies, difficulties with speech were associated with poorer performance on the cognitive ability tests. The children of Primary Caregivers who expressed a little or a lot of concern regarding their child's speech or language development scored significantly lower on both the Naming Vocabulary and Picture Similarities tests (see Section 5.1) relative to children of Primary Caregivers who had no concerns. This is important from a public policy perspective because studies have shown that early intervention is effective in ameliorating some of the potentially adverse consequences of early-manifesting speech or language delay (Law, Garrett & Nye, 2004; McLean & Cripe, 1997), while other studies have shown that speech and language difficulties that persist beyond 5-6 years of age are associated with cognitive and academic deficits that continue into adolescence (Stothard, Snowling, Bishop, Chipchase & Kaplan, 1998). The greater risk of future cognitive disadvantage is in addition to the current negative impact that such speech and language problems may be having on the three-year-old child in terms of their social interactions or engagement with early learning materials and situations.

**Figure 5.8: Mean scores of three-year-olds on the cognitive ability tests by severity of speech and language problems**



## 5.4 SUMMARY

The analyses in this chapter underline the importance of considering the child's development not just from when they begin to walk and talk, but from the prenatal period. In particular, the disadvantages associated with being born at low birth-weight (Williams, Greene, McNally, Murray & Quail, 2010), observed at nine months, were persisting into the pre-school period. Further links between Wave 1 and Wave 2 were examined through comparison with performance on the ASQ developmental measure when the Study Child was an infant. Across a number of current three-year measures, those children who performed less well than expected at nine months were at greater risk of also performing poorly relative to their peers at age three.

Findings in relation to the effect of non-parental care were mixed, which may reflect the diversity of experience even within similar types of care. The benefit to be derived from someone at home spending time with the child in activities such as reading emerged much more consistently. While this is good news in terms of the low economic cost associated with these activities, families may need help in structuring their time to fit them into a busy day – perhaps by recruiting the help of other family members such as grandparents and older siblings.

Finally, while the differences between boys and girls that are already evident at this young age are interesting from a research perspective, they are likely to be of some concern to practitioners and policy-makers. In particular, boys were, on average, faring worse on tests of cognitive ability and parent-report indicators of speech and language problems, which are likely to interact as the child gets older.

### Next steps: opportunities for further research

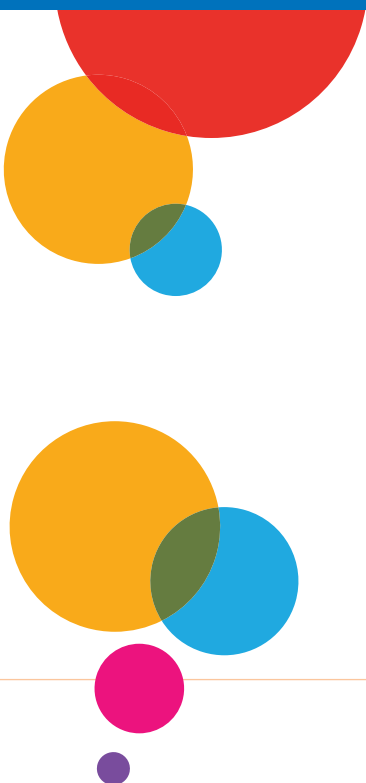
The most consistent question that arises from this overview of cognitive and speech development concerns those children who appeared to be lagging behind when they were nine-month-old infants. Those who were below expectations at Wave 1 were at greater risk of poorer outcomes at Wave 2. Of course, the corollary of this finding is that many children appear to have caught up on their developmental progress in between waves, and understanding the factors associated with this progress represents an important avenue for further research, with the potential to inform policy.





# Chapter 6

## THE PARENTING AND HOME ENVIRONMENT OF THREE-YEAR-OLDS



## 6.1 INTRODUCTION

Parents are, ordinarily, the people with the most direct contact with three-year-old children on a daily basis, in addition to making the key decisions that influence the child's development. Hence it is unsurprising that parenting practices and the parent-child relationship are strongly associated with child outcomes. Parenting practices that relate to the emotional quality of interpersonal interactions between parent and child are the focus of this chapter; however, such interactions do not take place in a vacuum and so it is also necessary to consider the context that is family structure and changes to that structure in particular. An individual's ability to positively and effectively parent a child is likely to be affected by circumstances in the wider family context such as economic security, other family relationships and more personal characteristics such as parental age, education or psychosocial well-being.

Even in the face of less than optimal situations, positive and effective parenting can bolster the child's resilience in adverse circumstances such as socio-economic disadvantage. This chapter will describe various aspects of the families' socio-demographic profile and their simple associations with parenting practices such as warmth, hostility, consistency and discipline strategies. It will also consider these aspects of parenting in relation to the more subjective characteristic of parenting stress. Finally, some issues pertaining specifically to families with non-resident parents will be outlined.

## 6.2 FAMILY CHARACTERISTICS, STRUCTURES AND CHANGE

Family structure, based on the size and composition of families as well as the interrelationship of members, includes intact, step, one-parent, two-parent, marital and co-habiting families. There is evidence to suggest that particular forms of family structure may influence the circumstances and developmental outcomes of children. For example, McLanahan and Sandefur (1994) note that children in one-parent families are likely to do less well on a number of child development indicators than children in two-parent families. Ackerman et al. (2001) report that problem behaviours were more frequent among children from unmarried than married families, and more frequent for boys than girls from cohabiting families (p.288). In Ireland one-parent families have been identified as having the highest risk of poverty and deprivation (e.g. Russell et al., 2009; CSO, 2010; Watson, Maître & Whelan, 2012). These effects may be mediated through a variety of mechanisms, including the level of economic resources available to the family, presence or absence of male role models, the impact of family structure on mother's physical and mental health, and the time available for supervision and parenting. Furthermore, the wider economic and cultural climate prevailing at the time has the potential to moderate these mechanisms.

Recent decades have seen substantial change in family composition and structures in Ireland, as elsewhere. Cohabitation has become increasingly common. In 2002 there were 77,600 cohabiting couples in Ireland, increasing to 121,800 in 2006 (CSO, 2006) and 143,600 in 2011 (CSO, 2012). In a 2010 study of 1,400 adults of childbearing age, 84 per cent of respondents recorded that they felt it was better to live with a partner before marrying them (Fine-Davis, 2011). Ireland has also seen substantial growth in the percentage of non-marital births since the early 1980s, from approximately 5 per cent to over 33 per cent by 2011. These are not all births to one-parent families as some non-marital births take place in two-parent families. Further, Fahey and Field (2008) note that by the time the child is three there is a trend for biological parents who were not married at the time of the birth to have got married.

### 6.2.1 PARENTS AND FAMILIES OF THREE-YEAR-OLDS

*Eighty-five per cent of three-year-olds were in two-parent families. Almost all children (in one- and two-parent families) lived with their biological parent(s). Although there was overall stability in the percentage of children living in one- and two-parent families, about equal proportions (approximately 2.5 per cent of children) made*



*a transition from one- to two-parent and from two- to one-parent families between the ages of nine months and three years.*

#### Personal demographic characteristics of the parents of three-year-olds

Table 6.1 presents details on the Primary and Secondary Caregivers of three-year-olds in the sample. As noted in Section 1.4.4, Primary and Secondary Caregivers were self-identified by the families in *Growing Up in Ireland*. The Primary Caregiver was the person who knew most about the Study Child and delivered most care to him or her. The Secondary Caregiver was the resident spouse/partner of the Primary Caregiver.

Almost all of the self-defined Primary Caregivers were female (98.4 per cent) and the biological parent (99.9 per cent) of the Study Child. Just under 80 per cent of Primary Caregivers recorded themselves as having been born in Ireland and were, on average, 34 years of age.

Eighty-five per cent of three-year-olds lived in families with a resident second parent, almost all of whom were the child's biological father (the remainder being the spouse or partner of the Primary Caregiver but not the parent of the Study Child). Approximately the same proportion of Secondary Caregivers as Primary Caregivers were born in Ireland (80 per cent) and had an average age of 37 years.

**Table 6.1: Profile of Primary and resident Secondary Caregivers of three-year-olds**

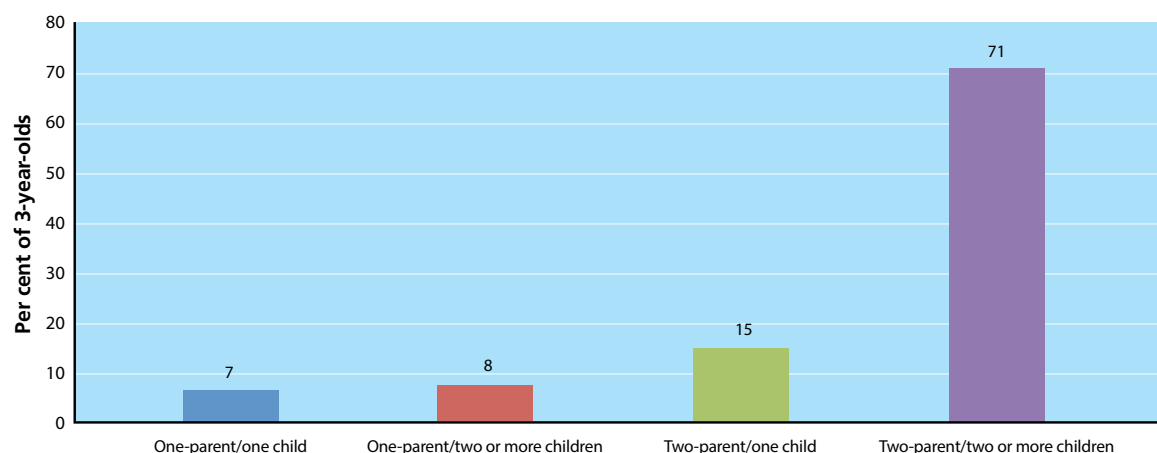
		Primary Caregiver	Secondary Caregiver
		Per cent	
Per cent resident Secondary Caregiver		–	85.5
Male		1.6	98.2
Female		98.4	1.8
Biological parent		99.9*	
Born in Ireland		79.2	80.3
Age	Mean	34.1 years	37.2 years
	Range	18 – 56 years	20 - 64 years

\* Remainder are adoptive parent, foster parent or grandparent

#### 6.2.2 CHANGES IN FAMILY STRUCTURE BETWEEN NINE MONTHS AND THREE YEARS

Overall, the Study Children's lives were characterised by a very high degree of stability in terms of Primary and Secondary Caregiver roles between nine months and three years; for 98.7 per cent of Study Children the Primary Caregiver was the same person at both ages. For most children who experienced a change in Primary Caregiver, that person had returned to work and the Secondary Caregiver had taken over home duties in their place – hence there was a change in roles but not people.

Figure 6.1 shows the distribution of three-year-olds according to the type of family in which they lived. Just under 15 per cent were in one-parent families, with 7 per cent having one child only. A further 15 per cent were in one-child two-parent families and 71 per cent were in larger two-parent families.

**Figure 6.1: Type and size of three-year-olds' families**

There is clear evidence that changes in family structures and, in particular, relationship transitions have a negative effect on children's behavioural, socio-emotional and cognitive outcomes (e.g. Cavanagh & Huston, 2006; Aquilino, 1997; Allison & Furstenberg, 1989; Fomby & Cherlin, 2007). These effects may be mediated in a variety of ways, including their impact on the mother's physical or mental health (e.g. Cooper et al., 2009; Meadows et al., 2008), the child's experience of conflict in the home prior to the separation (e.g. Cherlin et al., 1991), as well as changes in financial circumstances (McLanahan, 1999; Patterson, 1999). *Growing Up in Ireland* can (for the first time in Ireland) explore the extent of change in family structures and composition, to allow an analysis of how these changes affect outcomes.

Table 6.2 shows the frequency of different family types for the cohort at nine months and three years. The most notable (but unsurprising) feature is the addition of children to families over the period, reflected in the increased percentage of families with two or more children at the second round of interviews. This is particularly evident in respect of two-parent families, the percentage increasing from 54 per cent in Wave 1 to just under 71 per cent by Wave 2. The increase among one-parent families is much more modest (from 7 per cent to 8 per cent).

**Table 6.2: Comparison of family type at nine months and three years**

Family type	Nine months (Wave 1)	Three years (Wave 2)
	Per cent	
One-parent, 1 child	7	7
One-parent, 2 or more children	7	8
Two-parent, 1 child	32	15
Two-parent, 2 or more children	54	71
<b>Total</b>	<b>100</b>	<b>100</b>

Although the figures in Table 6.2 show the situation for the cohort at two points in time (nine months and three years), they do not show how family structures have changed over the period for the individual children. Table 6.3 identifies children at nine months and three years in terms of whether they were in one- or two-parent families. This shows that the majority of children remained in the same type of family but 2.6 per cent of all children in the sample went from one-parent to two-parent families and 2.8 per cent from two-parent to one-parent families.



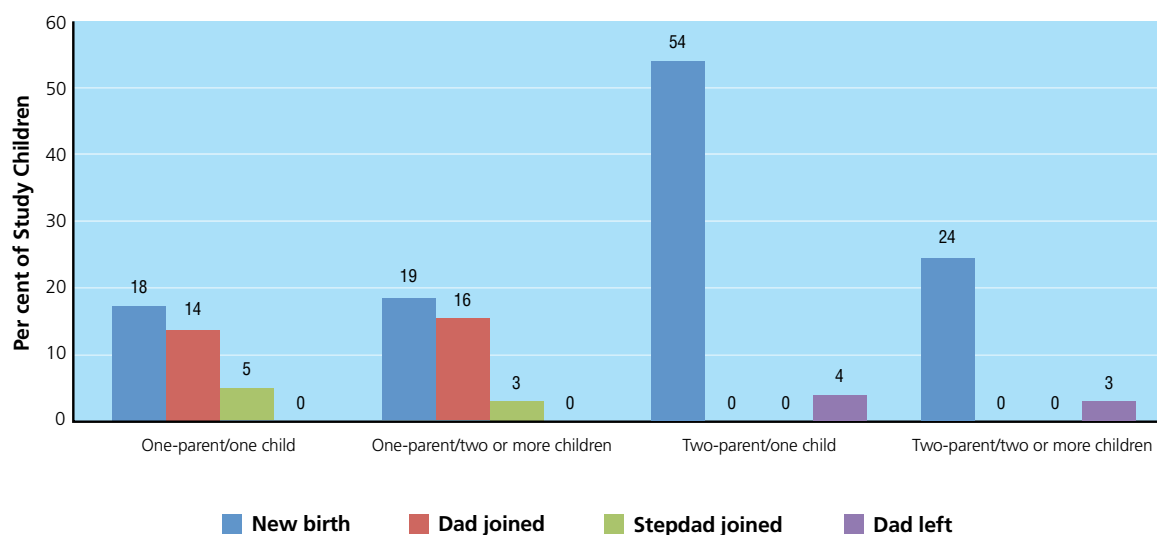
Table 6.3: Family type at nine months and three years

Family type at nine months	Family type at three years		
	One-parent	Two-parent	Total*
	Per cent		
One-parent			
% of one-parent families (Wave1)	82	18	100
% of all families	12	2.6	–
Two-parent			
% of two-parent families (Wave 1)	3	97	100
% of all families	2.8	83	–
<b>Total</b>	<b>15</b>	<b>86</b>	<b>100</b>

\* Due to rounding, within-family percentages may not sum to exactly 100%. Percentages less than 3 are rounded to one decimal place.

Figure 6.2 shows various changes in family structure between nine months and three years. For example, the prevalence of births is higher among two-parent than one-parent families. Over half (54 per cent) of smaller two-parent families experienced a birth between interviews compared with one-quarter (24 per cent) of larger ones, in contrast to 18-19 per cent of one-parent families (large and small). This figure also shows the percentage of fathers and step-fathers joining one-parent households and the number of fathers leaving what had been two-parent families (in a very small percentage of cases the Study Child's biological father left and a step-father joined). The impact of both initial family form as well as the dynamics of family structures on the child's development will be examined in subsequent reports.

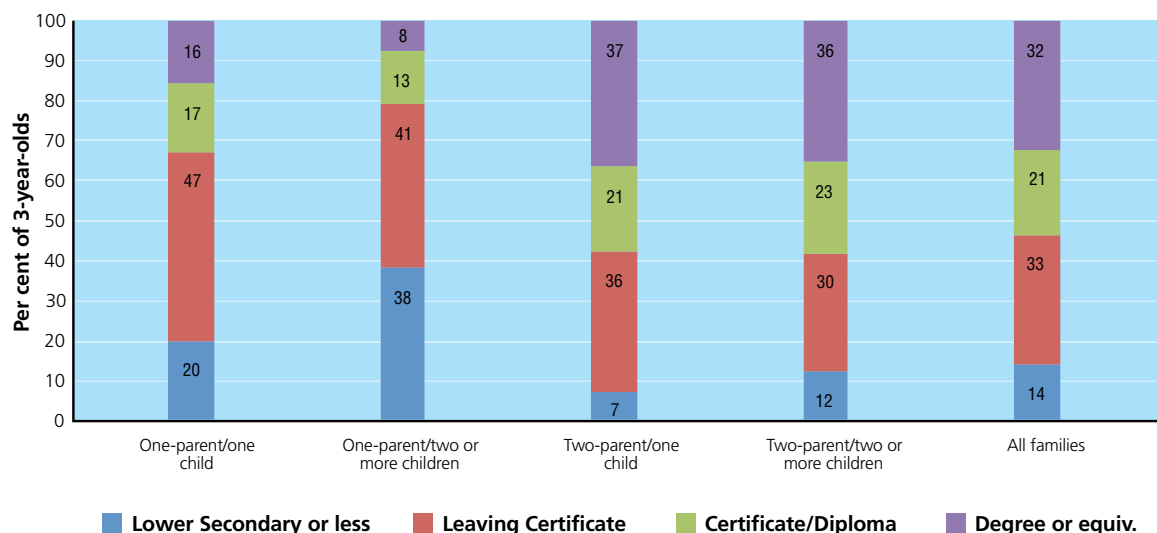
Figure 6.2: Summary of gross change in family composition between nine months and three years, classified by family type at Wave 1



### 6.2.3 SOCIO-ECONOMIC PATTERNS ACCORDING TO FAMILY TYPE

Figure 6.3 illustrates the association between educational attainment and family type. In general, one-parent families were more likely to be characterised by lower levels of Primary Caregiver education. For example, only 33 per cent of Primary Caregivers in one-parent, one-child families, and only 21 per cent of lone parents with multiple children had an educational qualification above that of second level – compared with approximately 57 per cent of Primary Caregivers in two-parent families.

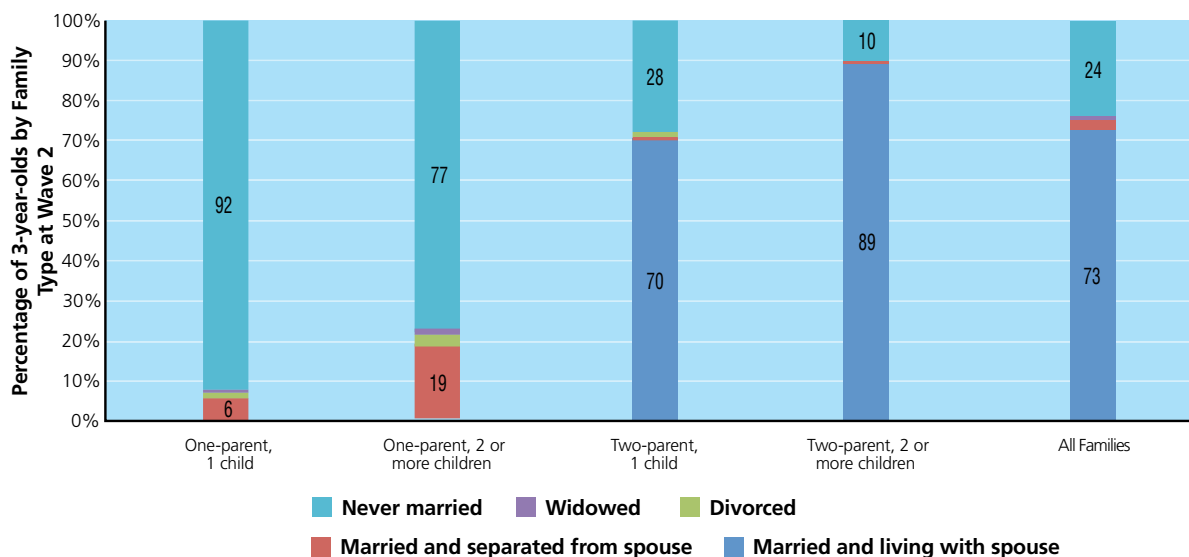
**Figure 6.3: Type of family with three-year-olds by Primary Caregiver's highest level of education**



The marital status of three-year-olds' mothers is summarised in Figure 6.4. The differences in marital profile of smaller and larger one-parent families are striking; 33 per cent of larger one-parent families recorded themselves as being *married and separated* or *divorced*, compared with only eight per cent among smaller one-parent families. A total of 92 per cent of mothers in the smaller one-parent families recorded themselves as *never married*.<sup>19</sup>

Differences in the marital structure of two-parent families are evident; marriage, in contrast to cohabitation, is much more common among larger two-parent families (89 per cent compared with 70 per cent among their smaller counterparts).

**Figure 6.4: Family type at three years of age, classified by Primary Caregiver's marital status**



<sup>19</sup> Only 6.5 per cent of three-year-olds in the sample were living in smaller one-parent families.





### 6.3 PARENTING STYLE

*Parenting style for the Study Children at age three years was measured along the dimensions of warmth, hostility and consistency. The majority of parents reported themselves to be high in warmth and consistency and low in hostility in dealing with their child. However, parents under stress were more likely to be lower in warmth and consistency and higher in hostility compared to their less-stressed peers.*

The method used in *Growing Up in Ireland* to measure parenting style has been successfully used by at least one other longitudinal study of children (Longitudinal Study of Australian Children – LSAC) to assess levels of parental *warmth, hostility and consistency*. 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, and seems to be associated with better behavioural outcomes – possibly because it provides a non-coercive context for the parent to guide and monitor the child (Pettit & Bates, 1989). In contrast, hostility is indicated by coercion, and feelings of irritation and anger in a parent’s interactions with the child that are associated with poorer outcomes in both behaviour and attainment and may be a mediator of the negative impact of other variables such as parental depression (Ryan & Adams, 1998). At three years of age, consistency in the parents’ behaviours and interactions with their children is very important. It involves setting developmentally appropriate boundaries and expectations for children’s behaviours and following through on stated intentions. Consistency helps establish the child’s pro-social behaviours and, together with high warmth and low hostility, is regarded as providing an optimal foundation for healthy child development (e.g. Rothbaum & Weisz, 1994).

In LSAC (Zubrick, Smith, Nicholson, Sanson & Jackiewicz, 2008), an absence of external support for parents was particularly associated with lower warmth and higher hostility among the Primary Caregivers of children aged 4-5 years (even though overall both measures were skewed towards high warmth and low hostility). Markers of socio-economic disadvantage such as lower education and income, in addition to measures of psychosocial distress, were associated with lower consistency – suggesting that this aspect of parenting may be particularly vulnerable to ‘disruptors’ in the family context. In terms of outcomes, the LSAC investigators noted a trend for greater hostility, less consistency and lower warmth to be associated with poorer scores on a derived ‘Outcome Index<sup>20</sup> for the child’ (Zubrick et al.). This is in keeping with findings from the wider international literature (e.g. Rhee, Lumeng, Appugliese, Kaciroti & Bradley, 2006; Chen, Dong & Zhou, 1997).

#### 6.3.1 MEASURING PARENTING STYLE

To measure parenting styles among parents of three-year-olds, *Growing Up in Ireland* used subscales from the same self-report instrument that was developed and implemented by LSAC to assess the three aspects of parenting (warmth, hostility and consistency). Both Primary and Secondary Caregivers completed the instrument as part of their respective main interviews. The instrument includes six items each regarding the frequency with which they displayed *warmth* and *hostility* towards the Study Child, and five items on *consistency* in dealing with the child. For the warmth subscale of the parenting measure, parents were asked to indicate, for example, the frequency with which ‘... you hug or hold this child for no particular reason’ or ‘... tell this child how happy he/she makes you’. Sample items from the hostility and consistency subscales include ‘how often are you angry when you punish this child?’ and ‘how often does the Study Child get away with things that you feel should have been punished?’ respectively.

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. For ease of comparison, scores in the bottom 20 per cent (lowest quintile<sup>21</sup>) of the warmth scale in the *Growing Up in Ireland* sample are designated as ‘low warmth’. Similarly the lowest quintile on the consistency scale<sup>22</sup> will be referred to as ‘low consistency’ whereas the top 20 per cent (highest quintile<sup>23</sup>) of scores on the hostility scale are deemed to be ‘high hostility’. The reader should note that, because parents generally tended to be very

<sup>20</sup> The LSAC Outcome Index incorporates measures from three domains of ‘health and physical development’, ‘social and emotional functioning’ and ‘learning and academic competency’.

<sup>21</sup> However, note that actually 24% of cases had a score at the 20th percentile on the warmth scale.

<sup>22</sup> 24% of cases were at the 20th percentile on the consistency scale.

<sup>23</sup> 18% of scores were above the 80th percentile on the hostility scores.



warm and not hostile, these 'high' and 'low' groups are relative to the majority of other parents in the sample and are not necessarily an objective indication of particularly 'cold' or hostile parenting.

### 6.3.2 PARENTING STYLES IN RELATION TO SOCIO-DEMOGRAPHIC VARIABLES AND PARENTAL STRESS

A parent's perception of feeling under stress is a potentially important mediator of the relationship between other parental characteristics and parenting practices. In *Growing Up in Ireland*, parental stress was measured using a six-item stressors subscale taken from the Parental Stress Scale (Berry & Jones, 1995) which included statements about stress, worry and financial burden (in relation to the child). Higher scores indicate higher levels of stress; for ease of comparison they have been divided into tertiles, such that caregivers in the top tertiles are the most stressed relative to their peers.

The overall picture for parenting styles indicated in Table 6.4 shows that most parents (both Primary and Secondary Caregivers) reported high levels of warmth and consistency and low hostility. Mean scores from the LSAC child cohort at age 4-5 years are also given in Table 6.4 for reference (Lucas, Nicholson & Maguire, 2011). Further discussion in this section will focus on the scores of the Primary Caregiver.

**Table 6.4: Primary and Secondary Caregiver scores on warmth, hostility, and consistency subscales in the Growing Up in Ireland sample and the LSAC child cohort at age 4–5 years**

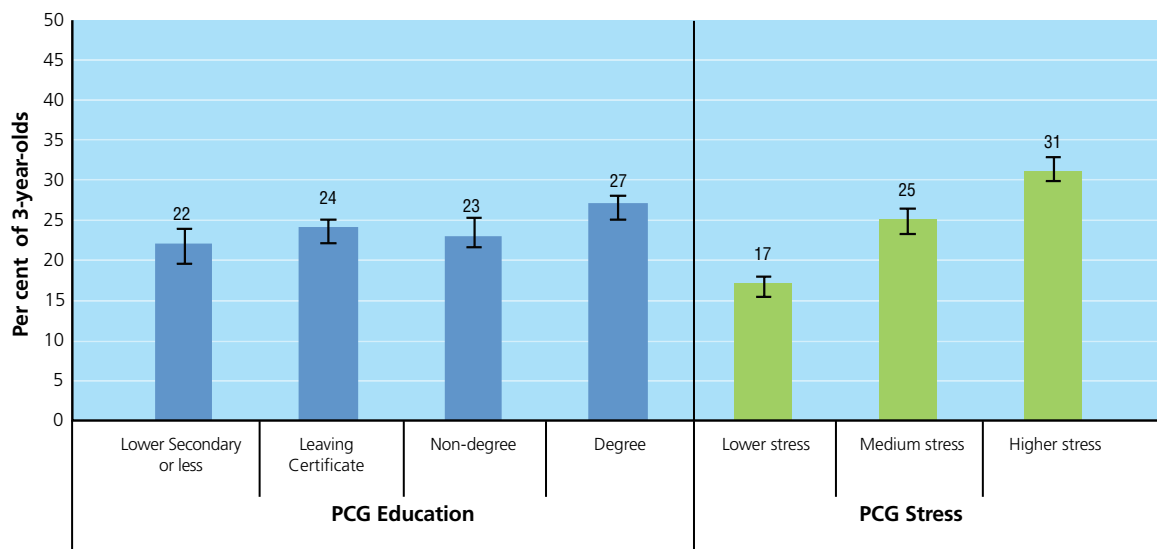
	Primary Caregiver			Secondary Caregiver		
	LSAC Mean	GUI Mean	Achieved Range (GUI)	LSAC Mean	GUI Mean	Achieved Range (GUI)
Warmth	4.44	4.75	1.67 – 5.00	4.08	4.61	1.00 – 5.00
Hostility	2.19	1.79	1.00 – 4.33	2.28	1.74	1.00 – 4.00
Consistency	4.02	3.98	1.00 – 5.00	3.96	3.82	1.00 – 5.00

#### Parental warmth

The distribution of scores was negatively skewed, with mean scores close to the maximum possible. This indicates that Primary Caregivers on average reported that they *often* or *always/almost always* displayed warmth towards their child. In terms of the parental characteristics associated with being in the lowest warmth quintile, Figure 6.5 shows that Primary Caregivers with the highest level of education were more often in the lowest quintile (27 per cent) than those with lower levels of education (22 per cent). A much starker contrast between Primary Caregivers is evident when comparing on the basis of stress levels, however. Only 17 per cent of the Primary Caregivers in the lower-stress group were also in the lowest warmth quartile compared to 31 per cent of parents in the more-stress group (also Figure 6.5.).



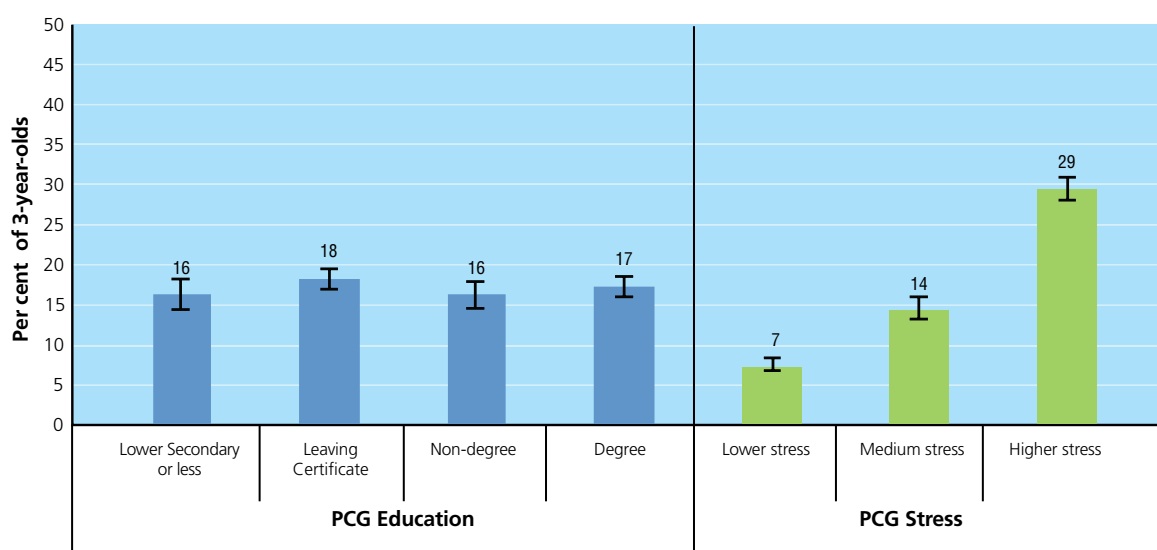
**Figure 6.5:** Percentage of Primary Caregivers (PCG) of three-year-olds scoring in the lowest warmth quintile, by PCG education and PCG stress



### Hostility

The distribution of scores on the hostility subscale was positively skewed, with mean scores close to the low end of the possible range, indicating that parents on average reported that they *never* or *almost never* displayed hostility. Figure 6.6 shows that, unlike warmth, hostility varied little according to parental education; however, being in the most-stressed tertile was, as before, a better predictor of an individual having a high hostility score; 29 per cent of the most-stressed group scored in the highest hostility score compared to just 7 per cent of the least-stressed Primary Caregivers.

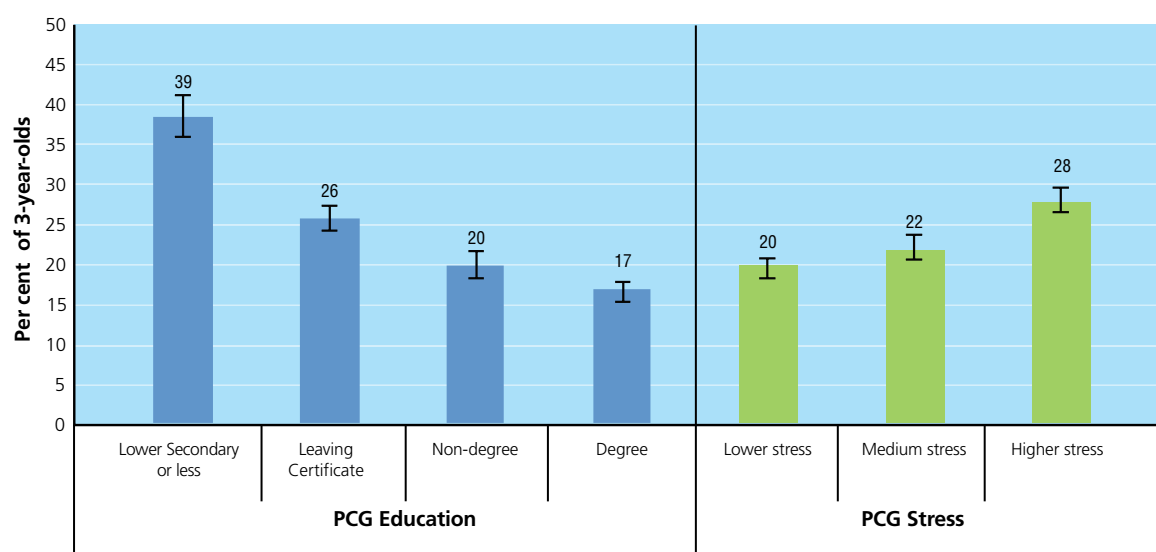
**Figure 6.6:** Percentage of three-year-olds whose Primary Caregivers (PCG) scored in the highest hostility quintile, by PCG education and PCG stress



### Consistent parenting

The distribution for consistency scores showed a trend towards negative skewing, with parents on average reporting that they were *often* or *almost always/always* consistent in parenting. Figure 6.7 illustrates that, of the three parenting dimensions, consistency showed the most marked patterning by parental education. Primary Caregivers with the least education scored in the lowest quintile for consistent parenting more than twice as often (39 per cent) as those with the highest levels of education (17 per cent). As with the other parenting dimensions, Primary Caregivers who were more stressed had a greater frequency of inconsistent parenting (28 per cent), although the trend was not as marked as that observed in relation to education.

**Figure 6.7: Percentage of three-year-olds whose Primary Caregivers (PCG) scored in the lowest consistency quintile, by PCG education and PCG stress**



## 6.4 DISCIPLINE

*Most Primary Caregivers were frequent users of the optimal discipline strategy of discussing with a child why a particular misbehaviour was wrong. Frequent use of aggressive and punitive techniques such as smacking or shouting was rare, but quite a number of parents resorted to these types of discipline at least occasionally.*

Parents' ability to manage difficult behaviours is an important part of parenting: effective, fair discipline is linked with positive child outcomes. In a study by Pettit, Bates and Dodge (1997), the parental strategy of attempting to resolve conflicts with five-year-old children through 'calm discussion' was more strongly associated with better social skills and fewer problem behaviours than other indicators of supportive parenting such as warmth and involvement. In contrast, harsh discipline was associated with poorer social skills and poorer academic performance for this age group, and with poorer behaviour when the children were aged 11 years. In other studies, harsh or punitive discipline has also been linked to poor behavioural outcomes, such as increased aggression and lower pro-social behaviour (e.g. Statistics Canada, 2005). Corporal punishment, in particular, tends to be associated with aggression and lower-quality parent-child relationships (Gershoff, 2002).

In a survey of Irish parents by Halpenny, Nixon and Watson (2010), 'discussing the issue calmly' was the most frequently reported discipline strategy; 80 per cent of all parents said they often used this technique. However, children in the 2-4 years age range also experienced some of the highest rates of physical punishment compared

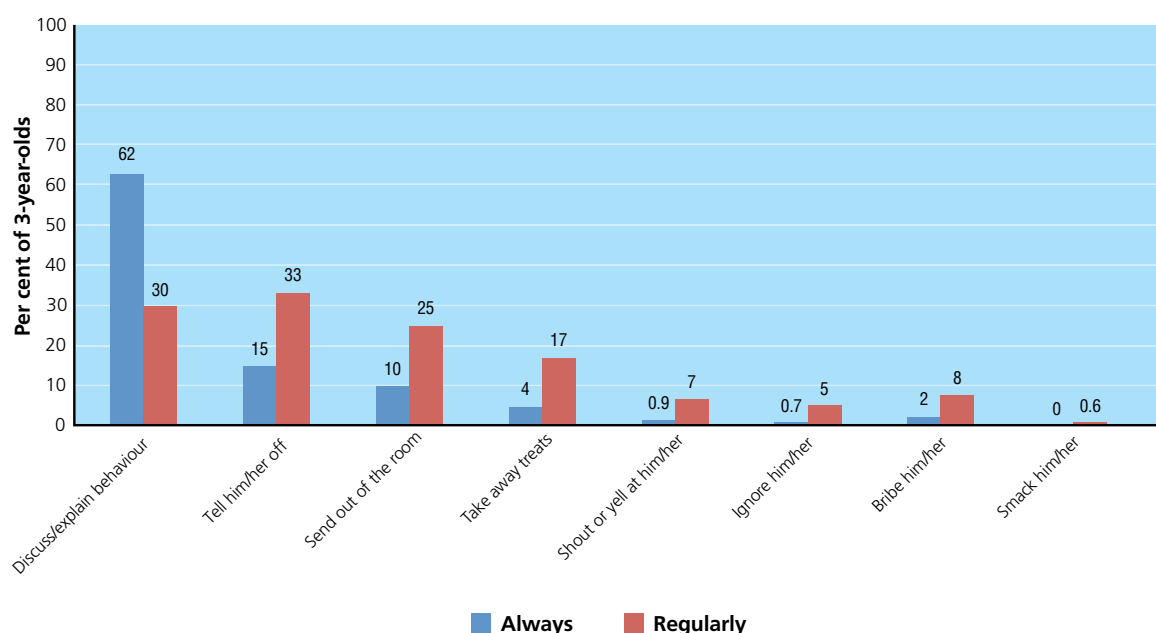


to other age groups; 37 per cent of parents said they had used actions such as smacking to discipline a pre-school child at least occasionally.

In *Growing Up in Ireland*, Primary Caregivers of the three-year-old Study Children were asked to indicate the frequency of their use of specified discipline techniques on a five-point scale: *Never*, *Rarely*, *Now and again*, *Regularly*, and *Always*. There was an additional answer option of *Can't say*. The listed discipline techniques were: (1) discussing/explaining why it was wrong; (2) ignoring him or her; (3) smacking him or her; (4) shouting or yelling at him or her; (5) sending him/her out of the room ... to the naughty step; (6) taking away treats; (7) telling him or her off; and (8) bribing him or her.

The most frequently reported discipline technique was talking to the child about the misbehaviour; 92 per cent of Primary Caregivers reported *always* or *regularly* 'discussing/explaining' the behaviour to their child as a form of discipline (Figure 6.8). Telling the child off was the next most commonly used technique; 48 per cent of Primary Caregivers used this form of discipline at least regularly. The least-used discipline technique was smacking: less than 1 per cent of Primary Caregivers said they used smacking as a discipline technique *always* or *regularly*, although in total 45 per cent used it *rarely* or *now and again*.

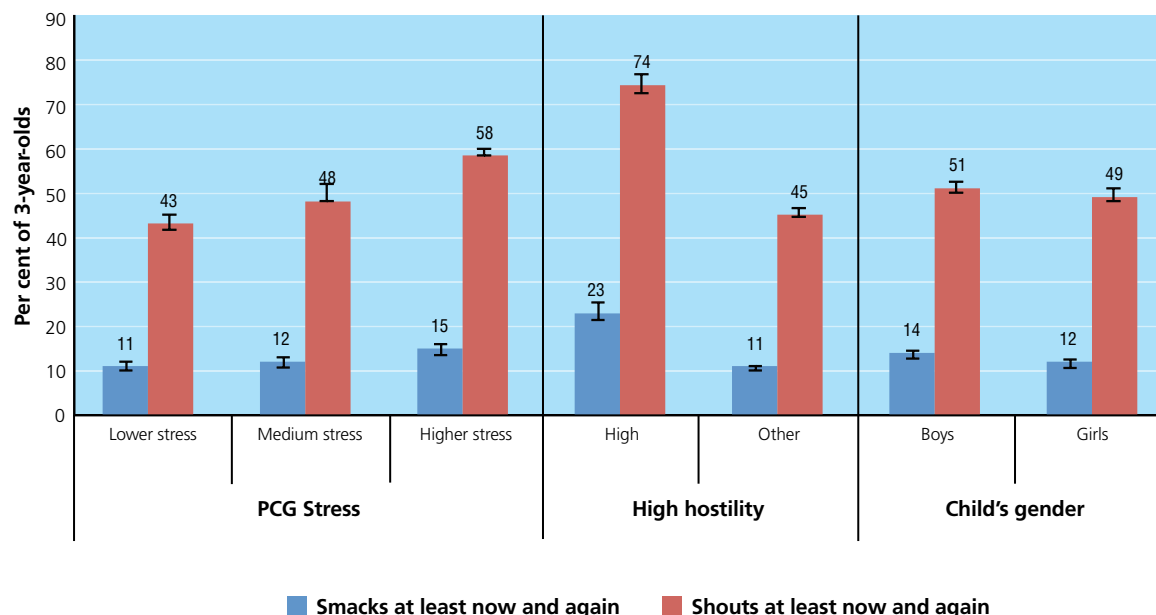
**Figure 6.8: Percentage of three-year-olds whose Primary Caregiver used each discipline strategy either 'always' or 'regularly'\***



\* Percentages less than 1 are given to one decimal place; all others are rounded to whole figures.

Reported use of the more aggressive discipline strategies – such as 'smacking' and 'shouting or yelling' *now and again* or more frequently – was more common among Primary Caregivers in the most-stressed tertile (15 per cent and 58 per cent for 'smacking' and 'shouting' respectively) than in any of the less-stressed groups, as shown in Figure 6.9. This figure also shows that boys were a little more likely than girls to be smacked but did not differ in terms of being shouted at. However, it is the contrast between those Primary Caregivers who scored in the highest quintile of the hostility scale (see Section 6.3) and those who had a lower hostility score that most stands out in Figure 6.9. 'Smacking' was used at least *now and again* by 23 per cent of Primary Caregivers in the 'high hostility' group compared to 11 per cent of other caregivers, and 'shouting or yelling' was also more common among these Primary Caregivers (74 per cent compared to 45 per cent).

**Figure 6.9:** Comparison of using 'smacking' or 'shouting' as a discipline strategy at least *now and again* or more frequently, according to PCG stress, high hostility rating and child's gender



## 6.5 PARENT-CHILD RELATIONSHIP

*The majority of parents described their relationship with the Study Child as high in positive aspects and low in conflict. However, Primary Caregivers under the most stress were more likely to think negatively about the parent-child relationship.*

The relationship between a child and his or her Primary Caregiver is central to any consideration of social-emotional development in early childhood. The dynamics of the parent-child relationship are likely to change significantly as the child develops from a relatively passive recipient of caregiving as an infant to a walking, talking individual with perhaps strongly held opinions on his/her own desires and needs. Hence a degree of sensitivity and patience is required from parents to adapt as necessary. Research highlights that young children who have a relationship with their parents that is characterised by parenting practices that are sensitive and responsive, similar to those reflected in the 'warmth' scale mentioned earlier, are more likely to benefit from optimal child outcomes in emotional, social, and behavioural development (Lugo-Gil & Tamis-LeMonda, 2008). Conversely, difficulties in the parent-child relationship are linked to socio-emotional and behavioural problems in early childhood (Aguilar, Sroufe, Egeland, & Carlson, 2000). However, as always, relationships do not exist in a vacuum and may be influenced by the personal characteristics of parent and child, as well as by what is happening in the wider family context.

*Growing Up in Ireland* used the Pianta Child-Parent Relationship Scale – Short Form (Pianta, 1992) to tap into both positive and negative aspects of the parent-child relationship. Primary and Secondary Caregivers were asked to indicate the current applicability of each statement to their relationship with the Study Child on a five-point scale: 'Definitely does not apply', 'Not really', 'Neutral, not sure', 'Applies somewhat', and 'Definitely



applies'.<sup>24</sup> 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').

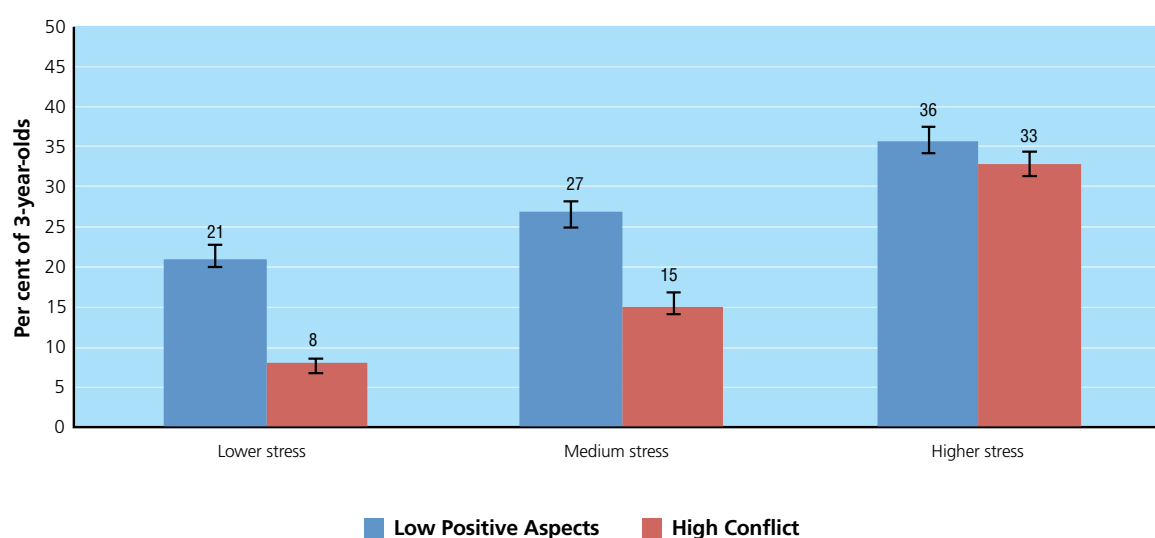
**Table 6.5:** Scores of Primary and Secondary Caregiver of three-year-olds on the positive aspects and conflict subscales of the Pianta Child-Parent Relationship Scale (short form)

	Possible Range	Primary Caregiver		Secondary Caregiver	
		Mean	Achieved Range	Mean	Achieved Range
Positive Aspects	7 - 35	33.77	7 - 35	32.96	7 - 35
Conflict	8 - 40	15.64	8 - 40	15.02	8 - 40

Table 6.5 provides the mean scores on both the Positive Aspects and Conflict subscales for both Primary and Secondary Caregivers. Scores are skewed to the upper end of the range on the Positive Aspects scale, indicating that parents tended to answer *definitely applies*. Mean scores on the Conflict scale are near the bottom of the range, suggesting that levels of conflict were low overall. Parents who had the lowest scores on the positive subscale (in the bottom quintile<sup>25</sup>) or the highest scores on the conflict subscale (the highest quintile) were compared with the rest of the parents in the sample, although it should be emphasised that these rankings serve mostly to contrast parents that overall appear to be high in positivity and low in conflict.

Primary Caregivers (mostly mothers) were more likely to have a relationship that was relatively low in positive aspects when the Study Child was a boy rather than a girl: 31 per cent compared to 25 per cent; although there was little difference for Secondary Caregivers (22 per cent and 20 per cent for boys and girls respectively). There were no significant gender differences in relation to high conflict for either Primary or Secondary Caregivers.

**Figure 6.10:** Percentage of Primary Caregivers of three-year-olds scoring in the highest conflict and lowest positive quintiles, by PCG stress



<sup>24</sup> An answer option of 'Not applicable' was allowed for one of the statements relating to being at work for those who were not employed outside the home.

<sup>25</sup> 28% of the sample were at the 20th percentile score on the positive aspects scale.

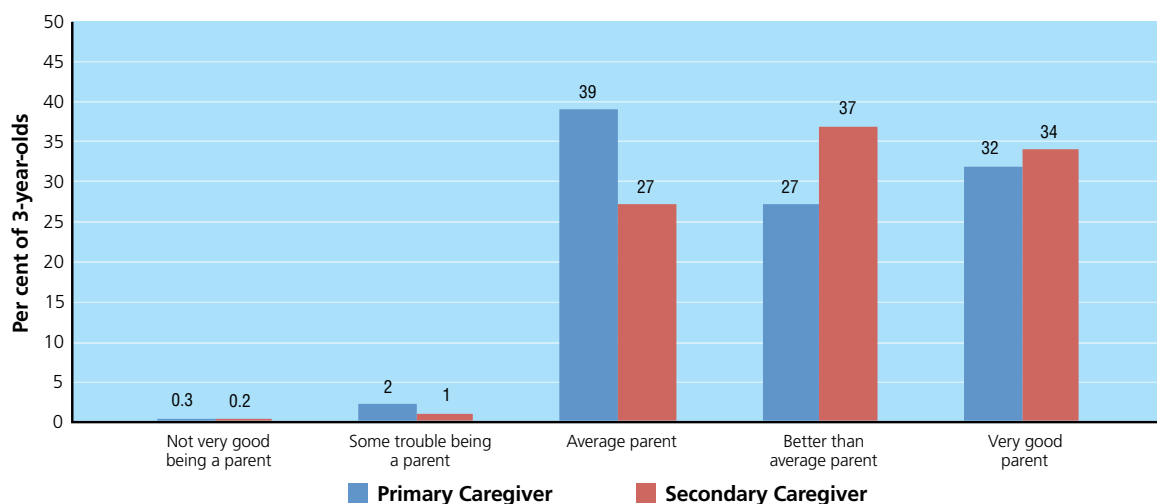
Both Positive Aspects and Conflict ratings were, however, associated with parental stress, suggesting that this aspect of the parental experience had a potentially disruptive influence on the parent-child relationship (although more advanced statistical analyses that are beyond the scope of this report would be required to establish this as a causal relationship). Figure 6.10 shows that Primary Caregivers with the higher stress scores were the most likely to have the highest scores on the conflict scale of the parent-child relationship measure (33 per cent). Likewise, the more-stressed Primary Caregivers were also the most likely to score in the lowest quintile of the positive aspects scale (36 per cent). In contrast, the least-stressed Primary Caregivers tended to report the lowest levels of conflict (8 per cent in 'high conflict') and the highest levels of positivity (21 per cent in 'low positivity'). However, it should be noted that a poor parent-child relationship could itself be a source of stress to parents and so the association between stress and relationships may not be unidirectional.

## 6.6 PARENTAL SELF-EFFICACY

Parenting self-efficacy refers to an individual's sense of competence as a parent. Recent research suggests that parenting efficacy may mediate the effects of a number of parent and child variables on the quality of parenting (Jones & Prinz, 2005). For example, high parenting efficacy has been associated with more responsive and nurturant caregiving practices, while low levels of efficacy are associated with more dysfunctional types of parenting (Morawska, Winter & Sanders, 2009). However, it can be difficult to disentangle causal pathways, especially cross-sectionally; i.e. how much do a child's positive outcomes follow from a parent's feelings of self-efficacy and how much does a parent's sense of efficacy result from the fact that a child is doing well?

Primary and Secondary Caregivers were asked to rate themselves as parents from *not very good at being a parent*, to a *very good parent*. Overall, hardly any parents rated themselves as either a not very good parent or as having some trouble being a parent (just over 2 per cent for Primary Caregivers and over 1 per cent for Secondary Caregivers), which is similar to the percentages reported in the LSAC Australian study that used the same question (Zubrick et al., 2008). More than half of Primary Caregivers (59 per cent) and nearly three-quarters of Secondary Caregivers (71 per cent) in *Growing Up in Ireland* rated themselves as either *better than average* or *very good* (Figure 6.11).

Figure 6.11: Ratings of themselves as parents by Primary and Secondary Caregivers of three-year-olds



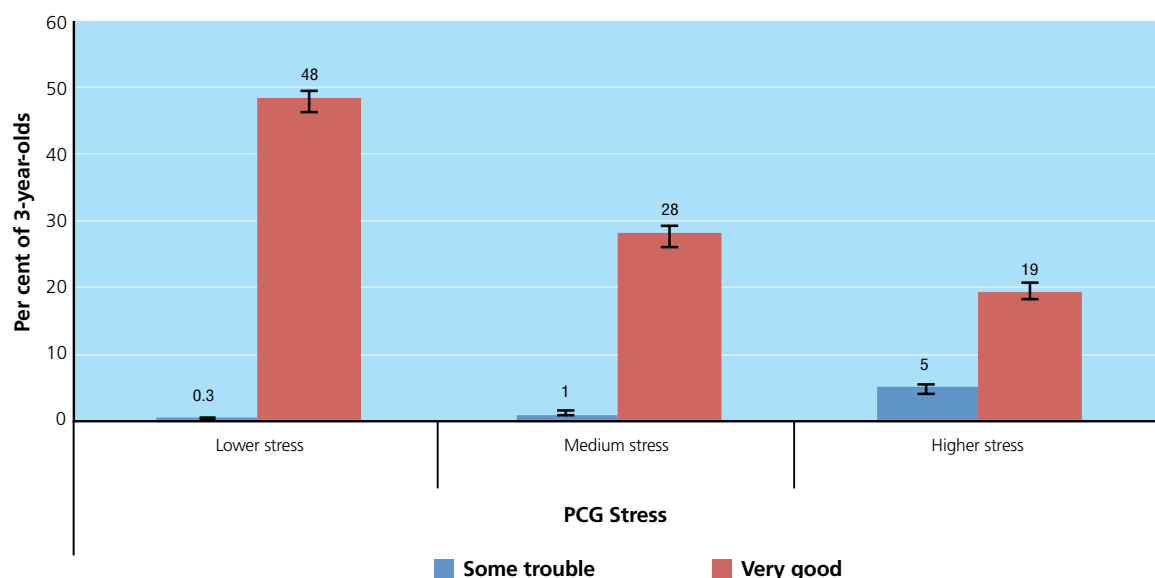
Ratings of parental self-efficacy appear to be related to feelings of parental stress. Figure 6.12 shows that even though only 5 per cent of the most-stressed Primary Caregivers described themselves as having *some trouble being a parent*; this greatly exceeds the corresponding percentage of Primary Caregivers in the least-stressed group (0.3 per cent). Similarly, at the other end of the spectrum, nearly half of the least-stressed Primary Caregivers (48 per cent) gave themselves the top very good rating compared to just 19 per cent of the most-





stressed – although this still means that stressed parents rated themselves as *very good* more often than they said they had some trouble. To fully understand this relationship, multivariate longitudinal analysis is required.

**Figure 6.12: Association between Primary Caregivers' ratings of themselves as having some trouble being a parent or being a very good parent and their levels of parental stress**



## 6.7 RELATIONSHIPS WITH NON-RESIDENT PARENTS

*A sizeable minority of three-year-olds have a biological parent who does not live in the household with them. There is considerable variation in levels of contact, payment of maintenance and the relationship between resident and non-resident parent, with some very positive pictures emerging but an almost equal number of negative ones.*

By age three years, 14 per cent of the Infant Cohort had a biological parent permanently living outside the family home. While this percentage remained fairly stable between waves, there is a considerable amount of change for individual families, as discussed earlier in this chapter (see Section 6.2). For example, 3 per cent of those infants whose biological parents were described as living in the household at nine months had experienced the departure of one parent from the household by three years. In the other direction, 16 per cent of children had a formerly non-resident parent move into the household in the same time period.<sup>26</sup>

Aside from the factors leading to a parent living elsewhere, there is potential for considerable variation in terms of contact with and support from that parent. There can also be variation over time. Factors that have been identified as influencing contact between non-resident parents and their child in other research include socio-economic status, physical distance between the households, the relationship between the parents, and parents having new relationships (Cooksey & Craig, 1998; Parkinson & Smyth, 2003; Skevik, 2006). The following sections are based on information supplied by the (resident) Primary Caregiver in the self-complete supplementary questionnaire at Wave 2 (three years of age).

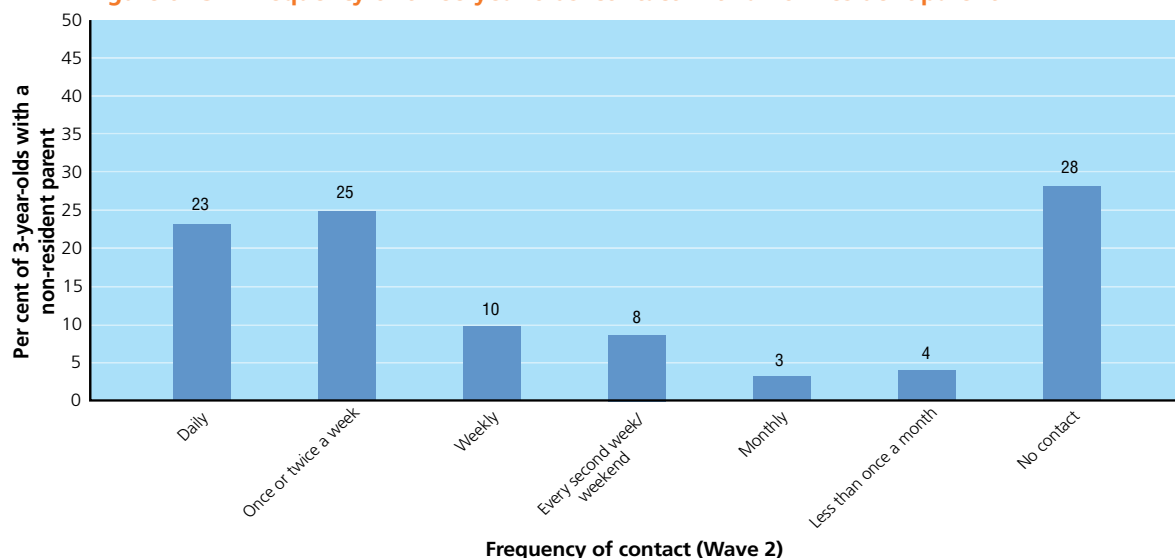
### 6.7.1 CHILD'S CONTACT WITH THE NON-RESIDENT PARENT

The amount of contact children had with their non-resident parent varied considerably; over a fifth (23 per cent) had daily contact but more than a quarter (28 per cent) had no contact at all (Figure 6.13). For those children whose biological parent was non-resident at both waves, just over half (55 per cent) of those who had daily contact as infants still had daily contact as three-year-olds, but nearly 9 per cent had no contact at Wave 2. The remaining 36 per cent still had some contact but less than before, although for the majority that was still *once*

<sup>26</sup> These percentages are based on information supplied by the resident parent who was the Primary Caregiver at both waves, and additionally had fully completed the sensitive supplementary questionnaire at both time points.

or twice a week. At the other end of the spectrum, most of those children who had no contact with the non-resident parent as an infant still had no contact as they got older (74 per cent). Hence it appears that levels of contact in infancy are an important indicator of contact as the child gets older, although there may be multiple reasons why contact is, or is not, maintained.

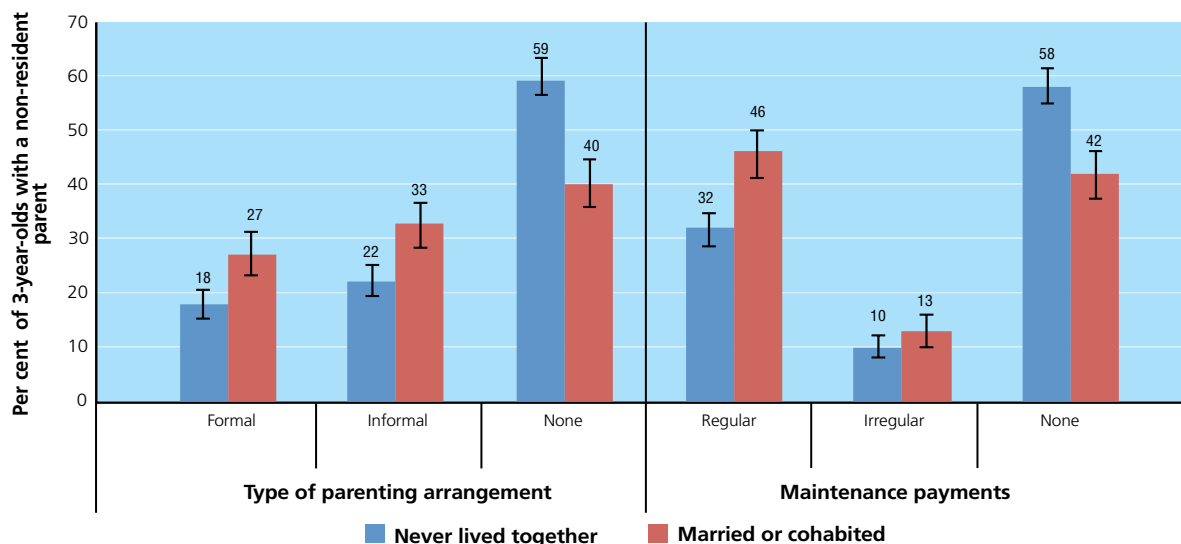
**Figure 6.13: Frequency of three-year-olds' contact with a non-resident parent**



### 6.7.2 PARENTING ARRANGEMENTS BETWEEN RESIDENT AND NON-RESIDENT PARENTS

A majority of Primary Caregivers in households where the three-year-old's other biological parent lived elsewhere had never lived with him or her (63 per cent). Just over a quarter (26 per cent) had previously cohabited and 10 per cent said they had previously been married to the other person. When asked to describe the type of parenting arrangement in place with regard to the non-resident parent and the Study Child, over half of resident parents (who were the Primary Caregiver) said there was *no parenting arrangement* in place (53 per cent) while 26 per cent described the arrangement as informal and the remainder (21 per cent) had a formal arrangement. Having either a *formal* or *informal* parenting arrangement in place was more likely if the parents had been married or lived together: 27 per cent of this group had a *formal* arrangement and 33 per cent had an *informal* arrangement, as shown in Figure 6.14.

**Figure 6.14: Parenting arrangements and maintenance payments for three-year-olds by previous relationship of the biological parents**





Just over half of biological parents living elsewhere (52 per cent) made no maintenance payments, according to the (resident) Primary Caregiver. Over one-third (37 per cent) made regular payments and the remaining 11 per cent made irregular payments 'as required [needed]'. Regular payments were more common among non-resident parents who had previously lived in the household (married or unmarried): 46 per cent made a regular payment compared to 32 per cent who had been neither cohabiting nor married (Figure 6.14).

In terms of the current relationship between the biological parents, 38 per cent of the resident Primary Caregivers described it as *positive* or *very positive*, and an almost identical percentage (37 per cent) described it as *somewhat negative* or *very negative*.

## 6.8 NATURE AND SUITABILITY OF THREE-YEAR-OLDS' ACCOMMODATION

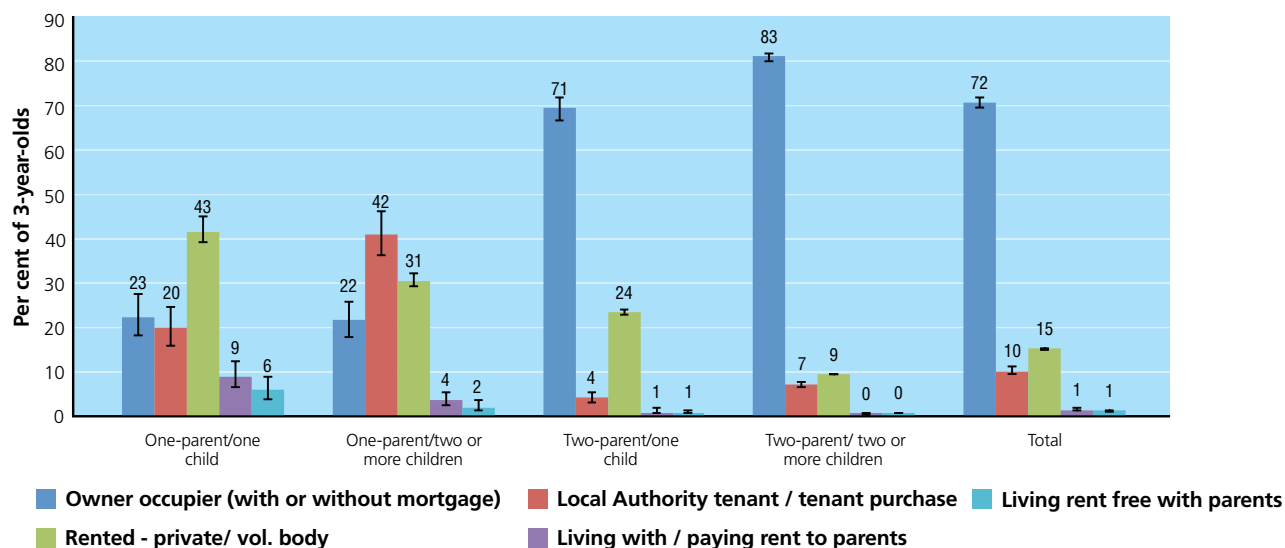
*The vast majority of three-year-olds were living in houses rather than apartments. Rented or local authority housing was more common among one-parent families, and they were more likely to report that the accommodation was unsuitable for their needs.*

Ireland has a particularly high percentage of home-owners (83 per cent) relative to international rates (e.g. 69 per cent in the U.K., 55 per cent in France and 42 per cent in Germany). The quality of housing in Ireland varies considerably, with rented accommodation being the most likely to be of poor quality and unsuited to children's needs. The nature and quality of housing may be associated with a child's physical health, socio-emotional development and behavioural outcomes as well as, for example, the incidence of unintentional injury in the home (e.g. Pearce et al., 2011; Evans et al., 2001; and Leventhal & Newman, 2010).

Ninety-six per cent of three-year-olds in *Growing Up in Ireland* lived in a house; most of the remainder lived in an apartment/flat/bedsitter. This latter was more common among one-parent families, especially among smaller one-parent families (9.3 per cent – compared with the population total of 3.7 per cent).

Figure 6.15 summarises tenure status among the families of three-year-olds. Almost three-quarters (72 per cent) lived in owner-occupied accommodation, with private rental accounting for 10 per cent and the local authority sector (rental or tenant purchase) for 15 per cent. Seventy-one per cent of smaller two-parent and 83 per cent of larger two-parent families were in owner-occupied accommodation. This compared with 22-23 per cent of one-parent families, for whom the local authority and private rental sectors were relatively more important. Living with the grandparents of the three-year-old is much more common among smaller one-parent families – 15 per cent compared with only 2 per cent among all families with a three-year-old.

**Figure 6.15: Tenure of families with three-year-olds, classified by family type**



The Study Child's Primary Caregiver was asked whether or not she felt that the family's accommodation<sup>27</sup> was suitable to their needs. Although 90 per cent of families felt their accommodation was suitable, sizeable minorities (especially among one-parent families) felt it was not. Those who indicated that it was not suitable were asked to specify why this was so, from a list of eight possible reasons. The results are summarised in Table 6.6. Overall, 11 per cent of three-year-olds were living in accommodation which was felt by their Primary Caregiver to be unsuitable to the needs of the family (Column B). The rate was substantially higher among one- than two-parent families, especially larger one-parent families (21 per cent).

**Table 6.6: Family type when infant aged three years, classified by (i) whether or not the Primary Caregiver felt their current accommodation was suitable for their family's needs and (ii) if not, the reasons why**

	(i) Accommodation suitable?		(ii) Reasons, where accommodation not suitable for family's needs								
	(A) Suitable for family's needs	(B) Not suitable for family's needs	(C) Too small	(D) Not child-friendly layout	(E) Too many steps	(F) Poor conditions (damp, draft, leaks, etc.	(G) Problems with rats, mice, cockroaches etc.	(H) Too noisy	(I) Problems with neighbours	(J) Other	
Family Type											Total <sup>a</sup>
	Per cent		Per cent of all families with a three-year-old (multiple answers possible)								
One parent, 1 child	85	15	6	6	0.4	4	0.9	3	1.4	7	113
One parent, 2+ children	79	21	15	5	3	7	1.4	2.8	2.4	5	122
Two parents, 1 child	92	8	6	3	1.2	0.9	0.1	0.8	0.8	2.4	107
Two parents, 2+ children	90	10	8	1.7	0.9	1.2	0.3	0.6	0.9	2.2	106
<b>Total</b>	<b>89</b>	<b>11</b>	<b>8</b>	<b>2.4</b>	<b>1.1</b>	<b>1.8</b>	<b>0.4</b>	<b>1.0</b>	<b>1.0</b>	<b>2.8</b>	<b>108</b>

<sup>a</sup> Row totals sum to more than 100 per cent as respondents who recorded that their accommodation was unsuitable for their family's needs could record more than one reason. In addition all percentages above 3 have been rounded to whole numbers

Columns (C) to (J) of the table outline the reasons given. The main reasons cited were size of the accommodation (8 per cent); a layout which was not child-friendly (2.4 per cent) and poor physical conditions such as damp, drafts and leaks (1.8 per cent). The figures show that much higher percentages of three-year-olds in one-parent families (especially in larger ones) were being brought up in these conditions.



## 6.9 SUMMARY

By the age of three years many of the Study Children in the Infant Cohort of *Growing Up in Ireland* had already experienced a major change in the structure of their immediate family. For most of them, this change was the birth of a younger sibling – a potentially important alteration for those who had previously been only-children and one likely to bring a mixture of advantages and disadvantages. For a minority of children, however, the major change to their family unit was the joining or departure of a parental figure (typically the father). Quite how, or to what extent, this type of change affects the child's well-being will be the subject of future analyses.

In terms of everyday parenting practices, overall the picture that emerges of the interactions between parents and their three-year-old children is very encouraging. Both Primary and Secondary Caregivers tended to approach parenting in a manner that is warm, consistent and low in hostility, and view their relationship with the child very positively. This overall style of interaction is reflected in the frequent use of recommended discipline strategies such as explaining to the child why a behaviour is wrong and only rare use of aggressive punishments like smacking.

One cause for concern is the apparent negative association between high parental stress and parent-child interactions. The most stressed Primary Caregivers were less warm, less consistent and more hostile, and reported fewer positive aspects and more conflict in their relationship with the Study Child. They also tended to regard themselves more negatively as parents. While the association between stress and parenting difficulties is likely to be reciprocal, the consistency with which stress emerges as a factor in less-than-optimal parenting interactions flags it as an issue requiring further investigation, ideally using multivariate and longitudinal techniques to disentangle the direction of effect, and identify moderators and mediators in that relationship.

Finally, the information gathered from resident Primary Caregivers in relation to contact with biological parents living elsewhere (non-resident parents) showed that there is considerable heterogeneity in levels of contact with non-resident parents (mostly fathers). While a considerable proportion of such parents remain actively involved, a large minority have no involvement at all; this seems to depend largely on whether they had ever lived together. Analysing the extent to which the involvement (or otherwise) of non-resident parents affects child outcomes will require drawing on the considerable breadth of information collected in *Growing Up in Ireland*, so as to address the usually complex circumstances in which parental separation, lone parenting and non-resident parenting take place.

### Next steps: opportunities for future research

Assessing the impact of the timing of parental separation on child outcomes is a prime candidate for research combining both *Growing Up in Ireland* cohorts: infant and child. Among the older cohort, some retrospective information is available from the first interview, when the older Study Children were nine years old, for those children who already had non-resident parents. The key opportunity arises, however, from a comparison of those younger and older children who experienced parental separation between Waves 1 and 2 (data from Wave 2 of the child cohort – at age 13 years – are in preparation at time of writing). Not only will pre-separation information be available but the transition will have taken place in largely the same political, cultural and economic context – except the children will have been quite different ages and at different developmental stages. In addition, the same or comparable outcome measures were used with both cohorts, including the Strengths and Difficulties Questionnaire and the Pianta parent-child relationship scale.

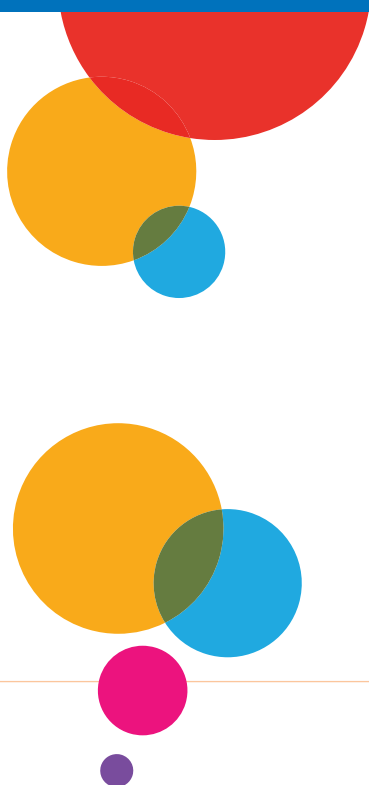






# Chapter 7

## CHILDCARE FOR THREE-YEAR-OLDS IN IRELAND





## 7.1 INTRODUCTION

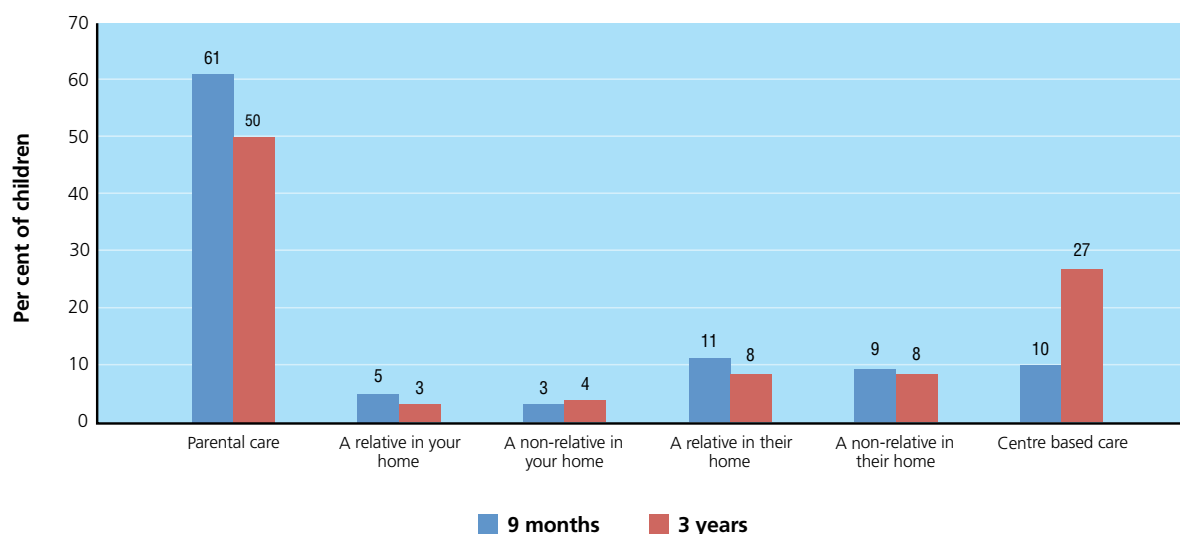
Throughout early childhood, a large number of children will experience non-parental childcare with variations in both settings and their relationship to the carer. At three years of age many children begin to experience childcare aimed specifically at providing learning experiences and increasing school readiness, although whether such a focus is optimal is a matter of some debate. Either way, existing research suggests that the quality of children's care has implications for their health, early socio-emotional development, and later education and labour-market success (Barnett & Ackermann, 2006). This chapter describes non-parental childcare provision for three-year-olds in Ireland and changes in childcare provision since Wave 1 when the child was nine months old. The chapter outlines how many families are using childcare and the characteristics of families that are using childcare. The types of childcare used by families when the child is three years of age are also explored, and key aspects of these childcare types, such as duration and cost of childcare, are described. The chapter concludes with a special focus on grandparents as childcare providers. There is much anecdotal evidence of a strong contribution by grandparents to childcare provision. This chapter presents data collected at Waves 1 and 2 on grandparents with regard to grandparent support and childcare provision.

## 7.2 CHILDCARE USE BY PARENTS OF THREE-YEAR-OLDS

*Half of the children in **Growing Up in Ireland** at age three were in some form of non-parental childcare. Over a quarter of three-year-olds were cared for in a crèche, Montessori, pre-school or naóinra (an Irish-language playgroup for pre-school children), 11 per cent were cared for by a relative in a home-based setting and the remaining 12 per cent were cared for by a non-relative in a home-based setting.*

Rates of childcare use generally peak during the pre-school period, with many children aged three to five years experiencing some form of non-parental childcare (Peisner-Feinberg, 2004). Prior to the **Growing Up in Ireland** survey, the most comprehensive and up-to-date information on pre-school childcare in Ireland was provided by the Quarterly National Household Panel Survey, which reported in 2009 on 2007 data (CSO, 2009). This survey showed that the use of non-parental care was on the rise: in 2002, 42 per cent of pre-schoolers were in non-parental care but by 2007 this had increased to 48 per cent.

In **Growing Up in Ireland**, the Primary Caregiver was asked whether the Study Child was minded by someone other than themselves or their spouse/partner for a period of eight or more hours per week during the day. Analysis of parental responses to this question revealed that 50 per cent of three-year-olds were in some form of non-parental childcare for eight or more hours per week. Centre-based care (e.g. crèche) was the most common form of non-parental childcare, with 27 per cent of the sample identifying it as their main form of care, while 11 per cent were being cared for by a relative in a home-based setting (i.e. either the parent's home or the carer's home) and a further 12 per cent were being cared for by a non-relative in a home-based setting. A relatively small percentage of the sample, 7 per cent, indicated that they relied on more than one type of childcare.

**Figure 7.1: Main types of childcare used by parents at nine months and three years of age**

*Growing Up in Ireland* data were used to examine changes in patterns of childcare usage over time as children grow. Figure 7.1 shows that the proportion of children in non-parental childcare increased from 39 per cent at nine months of age to 50 per cent at three years of age. Most of the change is accounted for by those who transitioned from parental care at nine months of age to centre-based care at three years of age. Just under a third of children were cared for in centre-based care at Wave 2, almost three times the proportion at Wave 1.

Another interesting finding over time was that fewer parents than anticipated were availing of non-parental childcare at age three compared to nine months. Sixty-eight per cent of parents of nine-month-olds indicated that they planned to use childcare on a full-time or part-time basis when the child was three years of age, but only 50 per cent of the sample were availing of childcare at three. The large declines in labour-market participation that have emerged as a result of the recession may account for fewer women than anticipated going back to work after the birth of their child. In 2008, 60 per cent of women were in employment but by 2010 this had dropped to 56 per cent ([www.cso.ie/en/statistics/labourmarket](http://www.cso.ie/en/statistics/labourmarket)). An additional factor may have been the arrival of further children in the family. Alternatively, the disproportionate impact of the recession on male employment numbers may have increased the number of men providing parental care.

**Table 7.1: Main type of childcare for children at age 3**

		Per cent
<b>Non-parental care</b>		<b>50</b>
Relative care	Grandparent	9
	Aunt/Uncle	2
	Other relative	1
Non-relative care	Childminder	9
	Friend/Neighbour/Other	2
	Nanny/Au Pair	1
Centre-based care	Crèche, Montessori, pre-school	27
<b>Parental care</b>		<b>50</b>
<b>Total</b>		<b>100</b>

Percentage breakdown for non-parental care sums to 51 per cent due to rounding

Those who indicated that their child was cared for by a relative or a non-relative in a home-based setting were asked who provided care for the child in the home during the day. Table 7.1 shows that grandparents accounted for the vast majority of relative-based care; 9 per cent of respondents in the overall sample indicated that they relied on grandparents as their main type of childcare provider. The main provider of non-relative-based care (excluding centre-based care) was a childminder (9 per cent).

### 7.3 THE DURATION AND COST OF CHILDCARE AT THREE YEARS OF AGE

*Across all main types of non-parental childcare, three-year-olds spent an average of 23 hours per week in childcare. Children cared for by non-relative childminders spent the most time on average in childcare, and the greatest cost for childcare provision was incurred for these types of childcare providers. More than 60 per cent of relatives who provided care did not receive any financial remuneration.*

Three-year-old children spent an average of 23 hours in non-parental childcare. Table 7.2 shows that children cared for by a non-relative in the child's home (e.g. au-pair or childminder) spent the highest number of hours in non-parental care, at 28 hours per week, declining to about 22 hours among those who were cared for in a centre. International research suggests that the number of hours spent in non-parental care can be an important factor in the overall impact of that care on child outcomes, although the findings are sometimes conflicting and the relationship can often appear ambiguous. For example, in the Growing Up in Scotland cohort non-parental care of between 17 and 40 hours (at age 10 months) had a positive effect on later cognitive outcomes, but more than 40 hours of care at 34 months had a negative impact on later behavioural outcomes (Bradshaw & Wasoff, 2009).

Table 7.2 also shows that the average hourly expenditure on childcare was €4.50 per hour, but this varied across type of childcare, being highest for those using non-relative care in the parental home (e.g. au-pair, childminder), at €5.70 per hour, and lowest for those who had a relative care for the child in the relative's home, at €3.65 per hour. As more than 60 per cent of respondents who relied on a relative as their main form of childcare reported that they did not have to pay their childcare provider, the averages have been adjusted to reflect only those who indicated that they paid for childcare.

**Table 7.2: Mean number of hours and mean cost per hour by type of non-parental childcare used at three years of age**

	Mean no. of hours per week	Mean cost per hour (€)*
A relative in your home	23	4.30
A non-relative in your home	28	5.70
A relative in their home	23	3.65
A non-relative in their home	26	4.43
Centre-based care	22	4.48
Overall	23	4.50

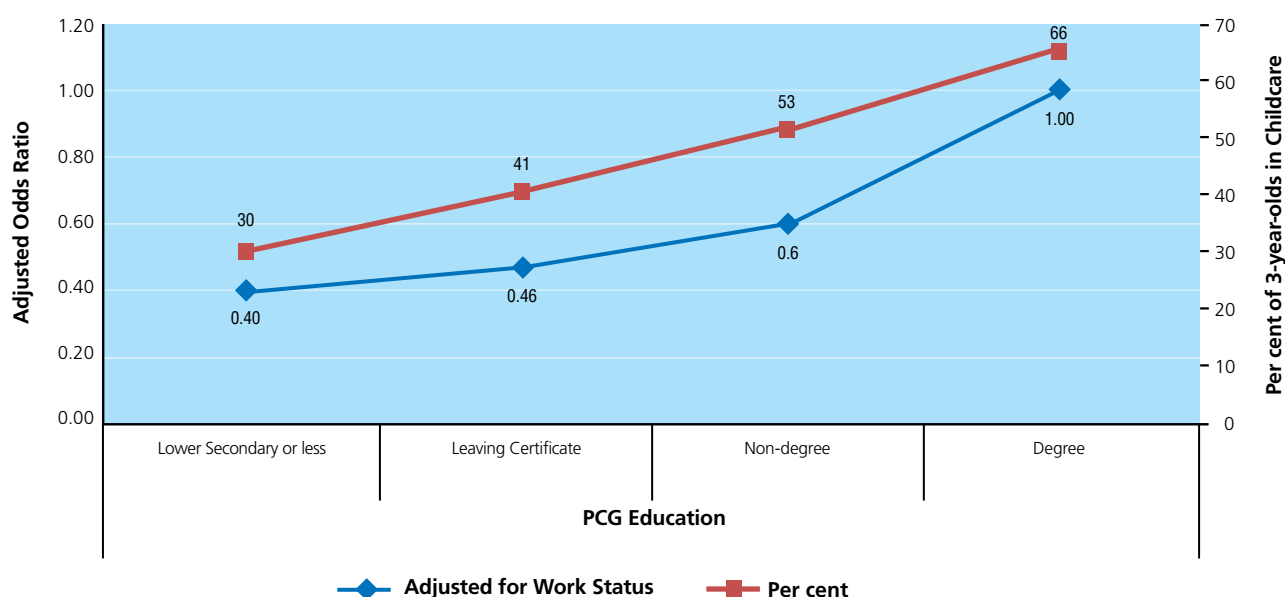
\* Cost calculations exclude carers who were unpaid for the childcare provision.

## 7.4 SOCIO-DEMOGRAPHIC VARIATION IN USE OF CHILDCARE

*Primary Caregivers who were working and those with higher educational qualifications and from more advantaged social class backgrounds were more likely to be availing of non-parental childcare for their three-year-old.*

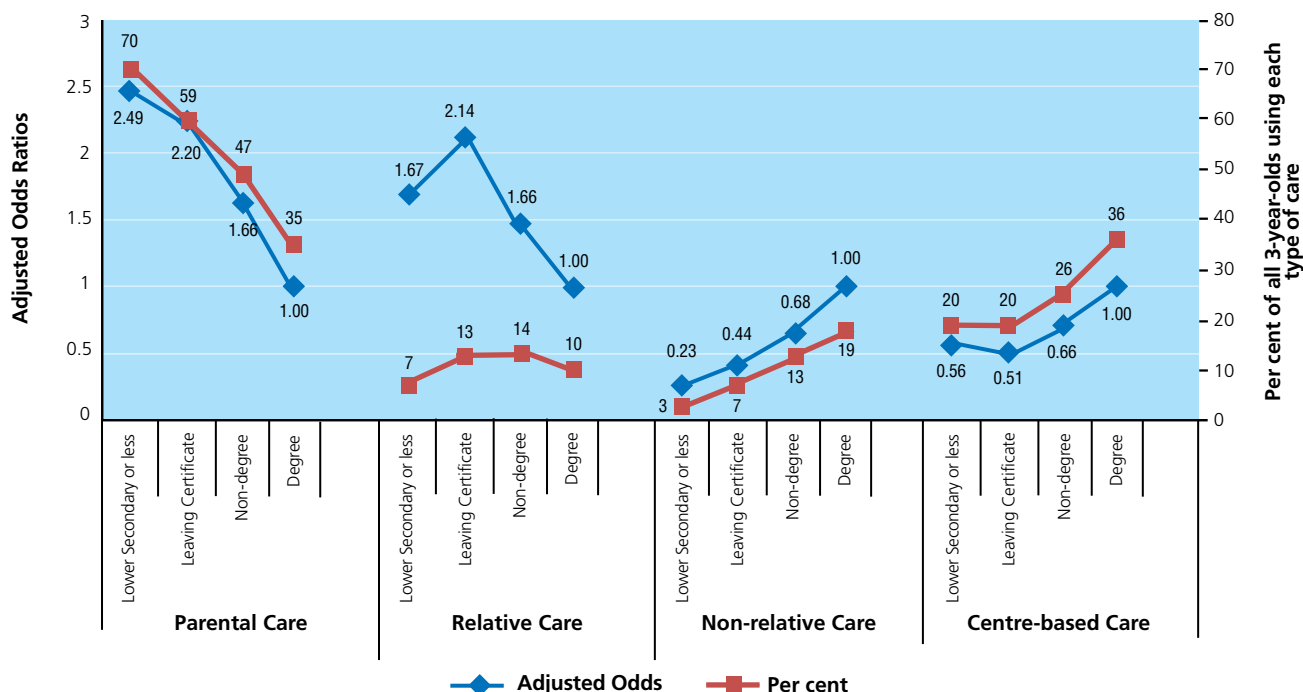
Although the use of non-parental childcare has grown across all socio-economic groups in recent years, the type, quality and cost of childcare remain strongly related to the socio-demographic characteristics of the household (Meyers & Jordan, 2006). Analysis of responses at Wave 2 revealed that 77 per cent of Primary Caregivers who were at work or training on a full-time basis used some form of non-parental childcare, compared with 23 per cent of those who were not at work. Figure 7.2 shows that the use of non-parental childcare was strongly related to the socio-demographic characteristics of the household. Those from more educated backgrounds were significantly more likely to avail of non-parental childcare; for example, 66 per cent of those with a degree-level background used some form of non-parental childcare compared with 30 per cent of those with a lower secondary qualification or equivalent. However, as use of childcare is heavily confounded by work status, Figure 7.2 also shows the odds ratios, which have been adjusted accordingly (note that the reference category is degree-level education, which has an odds ratio of 1.00).

**Figure 7.2:** Percentage (right-hand axis) of three-year-olds in non-parental childcare, by the Primary Caregiver's educational attainment, with the associated odds ratios when adjusted for work status (left-hand axis)



Research from elsewhere has shown that children of parents from more affluent and more highly educated backgrounds are significantly more likely to be in centre-based care and less likely to be in relative care, while the reverse is true for those from less advantaged and less highly educated backgrounds (Chang & Gennetian, 2002; Capizzano & Adams, 2004). Figure 7.3 displays the overall percentage of children in parental care and each form of non-parental childcare by the Primary Caregiver's highest level of educational attainment. It shows that, while relative care was more common among children of parents with degree-level background, once adjustment is made for the fact that the Primary Caregiver is working outside the home, this type of care was more likely to be used by working parents with lower levels of education.

**Figure 7.3:** Percentage (right-hand axis) of three-year-old children in parental care and different types of non-parental care by the Primary Caregiver's highest level of educational attainment, with odds ratios showing adjustment for work status (left-hand axis)



When analyses are constrained to just those children in some form of regular childcare, patterns in Ireland are somewhat more complicated than those that prevail internationally. For example, Figure 7.4 shows that, among those parents who used non-parental childcare at three years of age, those who had a lower secondary education were significantly less likely to use non-relative care compared with those from more highly educated backgrounds, but had similar levels of centre-care use, which in turn were higher than for the mid-education groups. Subsidised community-based playgroup provision may be having an impact here. Figure 7.4 also shows that care provision by relatives of the Study Child was lowest among those with the highest educational attainment.

**Figure 7.4:** Three-year-olds' use of different forms of non-parental childcare by the Primary Caregiver's highest level of educational attainment (per cent in non-parental childcare –right-hand axis) with odds ratios adjusted for work status (left-hand axis)

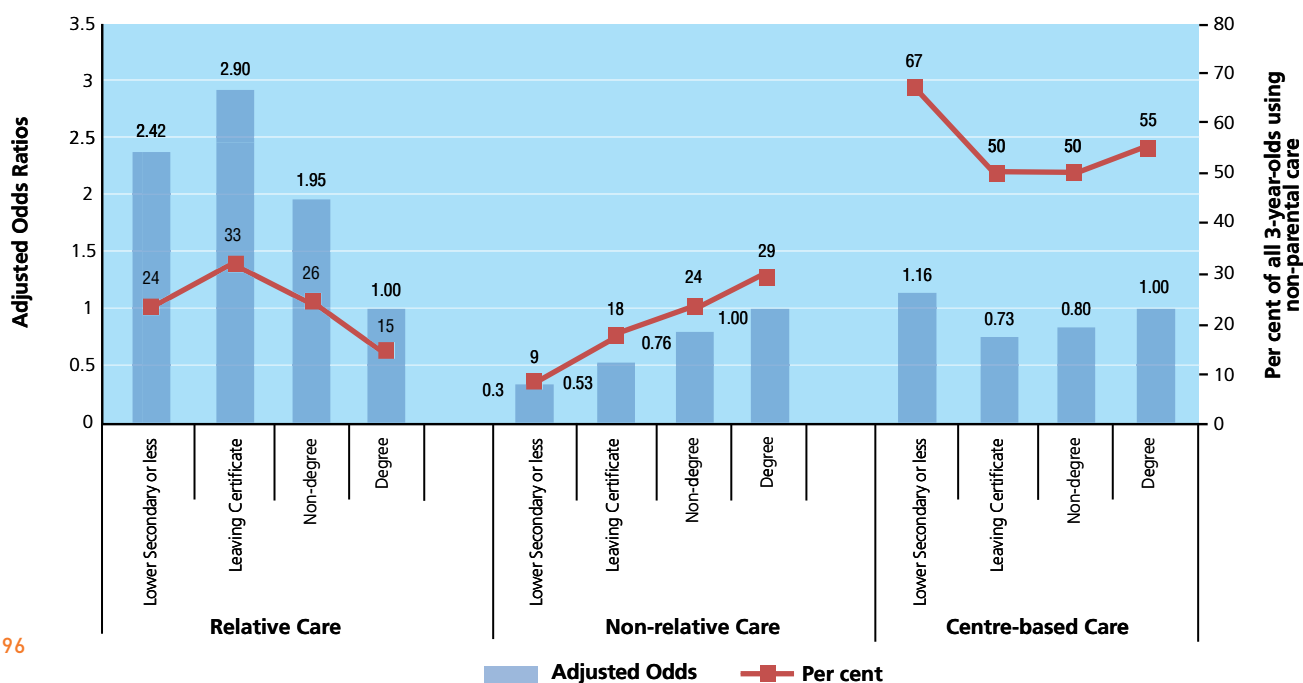


Table 7.3 shows that the cost of non-parental childcare is positively associated with the Primary Caregiver's highest level of educational attainment. Averaged across all types of care providers, the average cost per hour of childcare is lowest – at €3.30 per hour – for those with a lower secondary qualification and rises to €5.00 per hour for those with a degree-level qualification. This is a potentially important finding as cost is sometimes used as a proxy for the quality of childcare (Helburn & Howes, 1996), although it should be acknowledged that cost may also reflect convenience (e.g. proximity to home or work) and may not be representative of the full cost of care if subsidies are in operation for lower-income groups.

**Table 7.3: Average cost per hour of non-parental childcare of three-year-olds, by the Primary Caregiver's highest level of educational attainment**

	Relative care	Non-relative care	Centre-based care	Total
	€	€	€	€
Lower Secondary or less	2.59	5.11	3.18	3.30
Leaving Certificate	3.29	4.25	3.84	3.84
Non-degree	4.10	4.73	4.69	4.62
Degree	4.47	5.08	5.02	5.00

## 7.5 PARENTAL SATISFACTION WITH CHILDCARE PROVISION

*There were high levels of parental satisfaction with the quality of childcare provided; more than 90 per cent of parents endorsed positive statements about environmental (e.g. availability of toys, books, etc) and programme characteristics (e.g. learning objectives).*

The current focus on early childcare and education for young children generally (as opposed to targeted interventions for particular groups) has come to the fore relatively recently (Department of Education and Science,<sup>28</sup> 2009). Non-parental care arrangements developed haphazardly and according to local need. The need for childcare strengthened as more women joined the labour market and, when the issue emerged on the policy agenda, it did so as an employment issue, with the objective being that of enabling more women to take up employment. Ireland has, however, historically (and currently) performed rather poorly in international rankings relating to early childcare provision. For example, a 2008 report by UNICEF, titled '*The child care transition: A league table of early childhood education and care in economically advanced countries*', saw Ireland and Canada tied for last place in meeting nine of the 10 benchmarks set out by the report. The State of the Nation's Children report for 2010 quotes a key finding from a national survey (the Quarterly National Household Survey, 2007) that only 29 per cent of parents with children under 13 years reported having access to "high-quality, affordable childcare in the community" (Office of the Minister for Children and Youth Affairs,<sup>29</sup> 2010).

As summarised in Layzer & Goodson (2006), childcare quality has been variously operationalised using structural characteristics (e.g. staff-child ratios), programme characteristics (e.g. learning objectives or curriculum), and environmental characteristics (e.g. availability of age-appropriate learning materials and outdoor spaces) of the care environment. Despite the varying definitions used, the literature indicates that better childcare (both in and outside the home) is associated with more positive outcomes for children (e.g. American Academy of Pediatrics Committee on Early Childhood, Adoption, and Dependent Care, 2005) even after adjustment for confounders and taking account of family selection effects in terms of childcare provider (McCartney, 2004; Owen, 2011).

<sup>28</sup> Now the Department of Education and Skills (Summer 2013).

<sup>29</sup> Now the Department of Children and Youth Affairs (Summer 2013).

Table 7.4: Parental ratings of satisfaction with childcare quality for their three-year-olds

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
	Per cent				
There are plenty of toys, books, pictures and music for my child	83	16	0.9	0.4	0.2
My caregiver knows a lot about children and their needs	83	16	0.6	0.3	0.2
My child is happy in this arrangement	84	15	1	0.1	0.2
The place where my child is cared for is kept clean	87	13	0.2	0.1	0.2
My child spends time learning letters and numbers	69	22	6	3	0.7
There are different play activities, (e.g. water-based, sand-based, outdoor play) available	73	19	4	3	0.4

*Growing Up in Ireland* asked parents who used childcare outside of the parental home to indicate the extent to which they agreed or disagreed with six statements concerning their perception of, and satisfaction with, their main childcare provider. The list of statements and the percentage of parents endorsing each response category is shown in Table 7.4. It is evident that there are high levels of satisfaction among Irish parents with regards to childcare provided. Indeed, across each of the indicators, more than 90 per cent of parents reported that they ‘strongly agreed’ or ‘agreed’ with the statement, reflecting a high level of satisfaction with childcare. This would seem to contrast somewhat with indications from other surveys such as the one highlighted by the State of the Nation’s Children report quoted above; however, the parents in *Growing Up in Ireland* had already placed their children in this particular childcare and possibly would not have done so had they had serious concerns about quality. As well, the emphasis in these items is not on the affordability of the care.

## 7.6 THE FREE PRE-SCHOOL YEAR SCHEME

*Nearly all parents were planning to avail of the Free Pre-School Year.*

The Free Pre-school Year Scheme is a relatively new government initiative, which replaced the Early Childcare Supplement from January 2010. All children aged between 3 years, 2 months and 4 years, 7 months at 1st September each year are eligible to receive free pre-school provision of either three hours per day, five days per week for 38 weeks, or two hours, 15 minutes per day, five days per week for 50 weeks. More than 5,000 pre-school services notified to the Health Service Executive or registered with the Irish Montessori Educational Board are eligible to participate in the scheme (at time of writing). The date of commencement of the scheme coincided with the start of the data-collection phase for the *Growing Up in Ireland* three-year survey (December 2010 – August 2011). The vast majority of parents reported that they had heard of and intended to avail of the scheme (92 per cent) or were currently availing of the scheme (three per cent). Only two per cent indicated that they would not be availing of the free pre-school year, most commonly because they wanted to keep the child in their current arrangements, and just one per cent said that they had never heard of the scheme. This has relevance not just for the take-up of this particular policy initiative but also has implications for the Study Children’s likely exposure to formal, centre-based care by the time of the third wave of data collection when they are five years old.



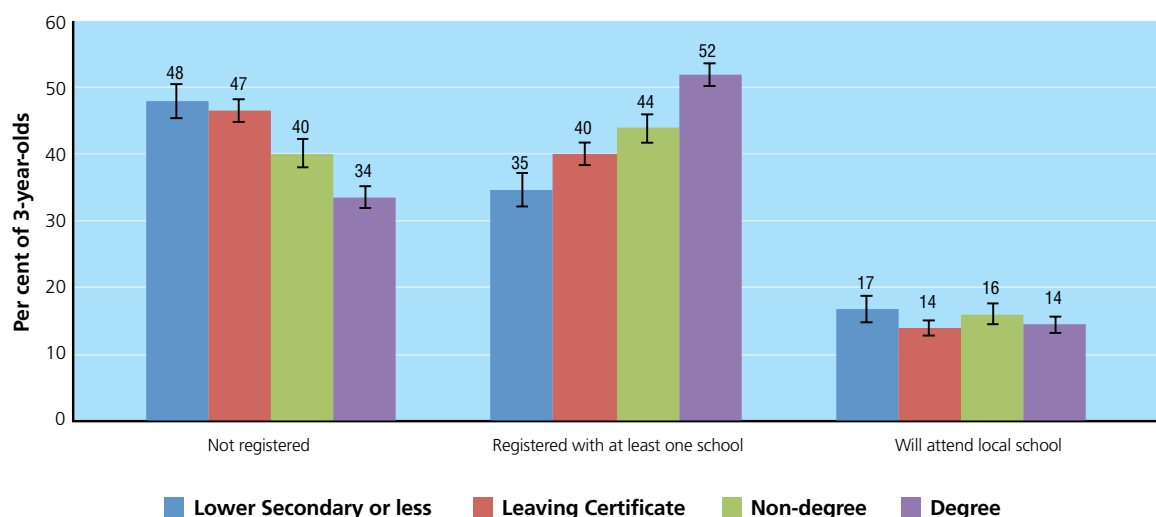
## 7.7 PLANNING FOR SCHOOL ENTRY

*At three years of age, two in five children were registered or enrolled with a primary school. There was a strong socio-economic patterning; parents from more affluent and educated backgrounds were more likely to have registered their child with a primary school.*

In Ireland, children begin their formal education between the ages of four and six years of age, and typically before their sixth birthday. There is increasing pressure on primary school places. The Department of Education and Skills (July 2012) estimated that primary school enrolments will increase from an actual figure of 505,998 in 2010 to a projected figure of 548,939 in 2014 (when the last of the Study Children will be enrolling). Therefore, the questions of when parents start enrolling their children in particular schools, whether some schools apply 'selection criteria', and what impact choice of school at this stage has on later outcomes are likely to attract increasing attention.

Parents were asked about their plans for the Study Child's future schooling and whether they had registered their child with a primary school. Thirty-five per cent of the sample reported that they had registered their child with at least one school and 9 per cent of the sample that they had registered their child with more than one school. Fifteen per cent indicated that they had not registered but planned for their child to attend the local school, while the remaining 41 per cent of the sample had not yet registered their child with a primary school. Figure 7.5 shows strong variation in school registration during the pre-school years, by the Primary Caregiver's highest level of educational attainment: 35 per cent of parents with a lower secondary education, increasing to 52 per cent of those with a degree-level qualification.

**Figure 7.5: Percentage of three-year-old children registered with a primary school, by the Primary Caregiver's highest level of educational attainment**



## 7.8 THE ROLE OF GRANDPARENTS IN THE CHILDREN'S LIVES

*The vast majority of Primary Caregivers reported regular contact with the child's grandparents. Grandparents provide a significant amount of childcare as well as financial and babysitting support for their grandchildren.*

Researchers have found that the relationship between adult children and their parents is important, as parents can often play a strategic role in helping the individual over the life-course (Eggebeen & Hogan 1990; Rossi and Rossi 1990). There is growing recognition of the importance of grandparents in the lives of their grandchildren, often over many years (e.g. Ross, Hill, Sweeting, Cunningham-Burley & Morton, 2005). Table 7.2 above showed that 9 per cent of children in Ireland were cared for by their grandparents for eight hours or more during the day. Grandparents may provide a strong influence on child development through 'surrogate parenting' (Smith & Drew, 2002). As such, they may provide emotional support during familial stress, act as an attachment figure for young children where one or more parent is disengaged, or serve as a protective factor for the development of children of parents who may have inadequate parenting skills (Bornstein & Sawyer, 2006). Previous research has shown that contact with grandparents seems to be relatively high in Ireland (Hogan et al., 2002; Lundström, 2001; Williams et al., 2010), perhaps because of the small size of the country and low levels of mobility but perhaps also because of the value placed on the extended family. To date, there has been limited research examining the role of grandparents in the lives of children in Ireland, but **Growing Up in Ireland** has collected information on the frequency and type of contact between grandparents and the Study Child at three years of age.

**Growing Up in Ireland** asked whether the Primary Caregiver was in regular contact with the Study Child's grandparents. High levels of contact with grandparents were reported at Wave 2; 91 per cent of respondents indicated that they were in regular contact with the Study Child's grandparents. Six per cent reported that the Study Child's grandparents lived abroad and a further one per cent reported that the Study Child's grandparents were deceased. Only two per cent of the sample reported that they were not in contact with the Study Child's grandparents. Those who reported that they were in regular contact with grandparents were asked about the nature and frequency of grandparental involvement in the Study Child's life. Table 7.5 confirms the extent of the role of grandparents in the lives of Irish three-year-olds and their families. It shows that 68 per cent of grandparents buy toys or clothes for the Study Child at least once every three months or more frequently. Similarly, it shows that grandparents are involved from an early age in providing informal opportunities for learning for the Study Child; 36 per cent taught the child letters or numbers at least weekly and more than a quarter took him or her out with similar frequency.

**Table 7.5: Extent and nature of supports provided by grandparents to three-year-olds and their families in Ireland**

	Rarely/never	At least once every 3 months	At least weekly
How often do the Study Child's grandparents ...?	Per cent		
Babysit	36	36	28
Have the Study Child to stay overnight	71	23	6
Take child out	46	27	26
Buy toys or clothes for the child	33	56	12
Teach the child letters or numbers	38	26	36
Help you out financially	86	12	3

Figure 7.6 displays the proportion of grandparents providing different types of support to the Study Child and their family (at least once every three months or more frequently). Across waves, it indicates that, generally, the high levels of support that were evident when the child was nine months old continued.

**Figure 7.6: Percentage of grandparents who provided each type of support at least once every 3 months or more regularly, at nine months and three years of age**

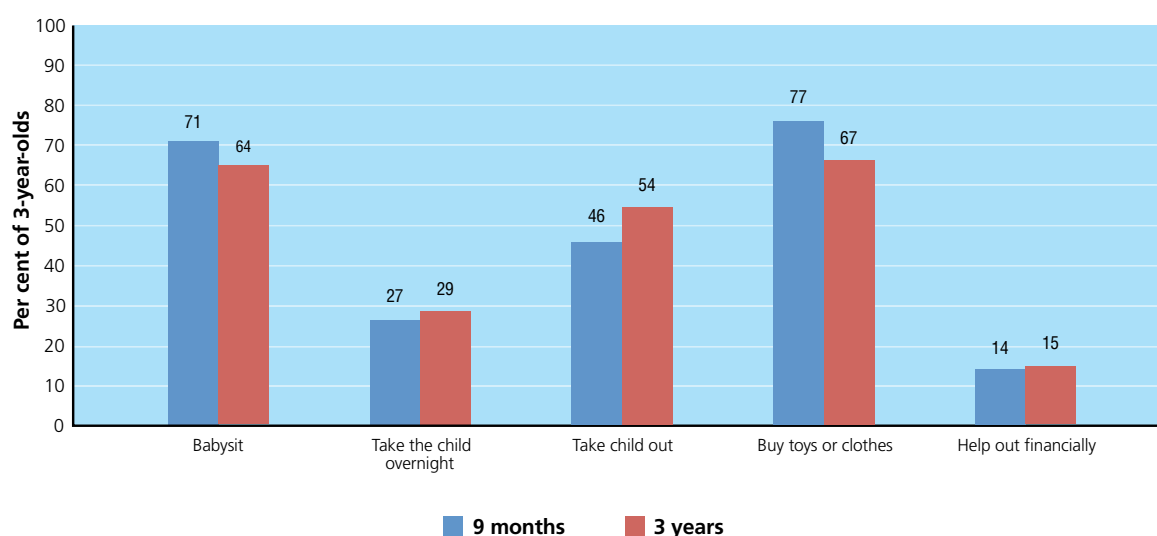
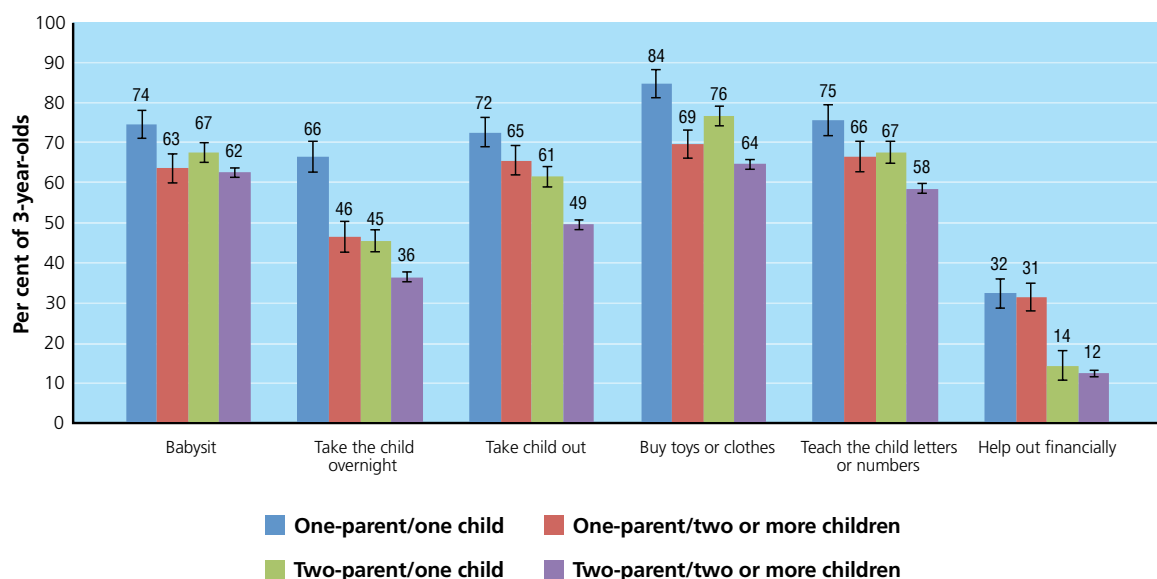


Figure 7.7 shows how the level of grandparental support varies across different family types. One-parent, one-child families had the highest levels of grandparental involvement across each of the indicators, with the exception of financial help where lone parents with multiple children received a similar level of support. Financial support was the area showing the biggest divide between one-parent and two-parent families, with nearly one-in-three of the former getting regular financial help compared to less than 15 per cent of two-parent families.

**Figure 7.7: Level of grandparental involvement in the lives of three-year-olds, by family type (frequency of a least once every 3 months or more often)**



## 7.9 SUMMARY

Half of three-year-old children in *Growing Up in Ireland* were in some form of non-parental childcare, 27 per cent in a centre-based setting, 11 per cent in a domestic setting where the care was being provided by a relative and the remaining 12 per cent in a domestic setting where it was being provided by a non-relative. On average, duration of non-parental care per week for those receiving it was 23 hours at a mean hourly cost of €4.50. Social and education gradients were clear in the prevalence of childcare use, being highest among those with higher education qualifications and from more advantaged class backgrounds. High levels of contact with grandparents were recorded, with a significant proportion of childcare being provided by them, as well as financial and babysitting support.

### Next steps: opportunities for future research

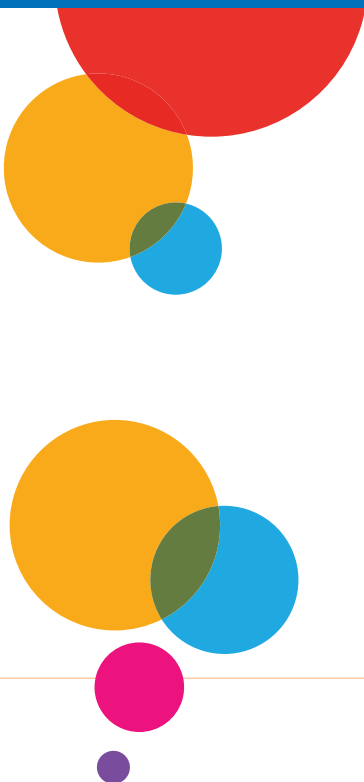
*Growing Up in Ireland* provides the opportunity to study the impact of different childcare arrangements on child development and well-being. It also facilitates the analysis of changing labour-market and social policies on parental participation rates and patterns of caring. Maternal employment patterns (considered in Chapter Eight) influence both the time children spend in parental care and the scale of household resources. Tax and welfare policies, one-parent family supports, childcare policies and policies around maternity/parental leave and work-family balance will all shape the level of parental involvement in care and the extent to which that care is gendered.

The next obvious pathway for detailed analyses on patterns of non-parental care, and grandparent involvement more generally, is the effect (if any) on children's developmental outcomes. Such an analysis could look back at the effects of childcare at nine months as well as current childcare arrangements. The relationship between childcare and outcomes is particularly complex; factors such as quality of the home environment, the parent-child relationship, child temperament and the characteristics of the childcare itself all potentially play direct, indirect, mediating or moderating roles.



# Chapter 8

## FAMILY FINANCIAL CIRCUMSTANCES AT THREE YEARS





## 8.1 INTRODUCTION

This chapter considers aspects of the economic and financial circumstances of the three-year-old's family and how these have changed between first and second interview. These aspects may affect not only the immediate well-being of the child but may have longer-term consequences for their development, some of which may persist to adulthood. Low income and poverty have been negatively associated with a range of physical, emotional, behavioural and educational outcomes (e.g. Duncan and Brooks-Gunn 1997; Bolger et al., 1995; Duncan et al., 2007; Holzer et al., 2007; Duncan et al., 2010). The timing of adverse financial circumstances in the early life of the child also matters; poverty in infancy is more strongly associated with adult employment outcomes than poverty experienced in later childhood (Duncan et al., 2010).

The pathways through which the family's financial circumstances may affect child outcomes are varied and complex. Some will be direct, mostly related to the lack of resources available to the family, others will be indirect. Some effects will be mediated through the amount and quality of time which parents have to spend with their children; the quality of the home environment; family nutrition; quality of non-parental childcare (if relevant); parental health and access to healthcare (possibly through private health insurance); the quality of local neighbourhoods, and the impact of economic stress on the parent-parent and parent-child relations within the home.

This chapter begins by considering the work status of parents, including changing status over time, as well as work-life balance. It then moves on to examine family income, economic strain and the effects of the recession which Ireland has been experiencing since the family was first interviewed in 2008.

## 8.2 PARENTAL EMPLOYMENT AND WORK-LIFE BALANCE

In common with other developed countries, female labour-force participation rates in Ireland increased substantially in the years preceding the first interview at nine months of age. For example, they stood at 44 per cent in 1998, rising to 55 per cent in 2008 before falling back somewhat (to 53 per cent) by the last quarter of 2011. Maternal employment outside the home will generally result in higher family income and potential command over resources. This may impact positively on child health outcomes through an increased likelihood of private health insurance and higher nutritional content of diet, as well as improvements in the mother's self-esteem and her mental health (Morrill 2008). Out-of-home working, however, may also have a negative impact on the child's health. This may be associated with less parental time available for supervision of children, for food preparation and play time (Gennetian et al., 2010; Berger et al., 2005). A number of studies have, for example, focused on health issues related to increased prevalence of overweight and obesity among children whose mother works outside the home (Ruhm, 2008; Fertig et al., 2003; Cawley and Lin, 2007; Anderson et al., 2003 and Phipps et al., 2006).

As well as influencing physical health outcomes, maternal employment may also negatively impact on the child's cognitive, socio-emotional and behavioural outcomes (Greg et al., 2005; Ermisch and Franceconi, 2000; Desai et al., 1989; Han et al., 2001; Waldfogel, 2002; Ruhm, 2004; Bernal, 2008; Belsky & Eggbeen, and Belsky, 1986, 1988, 1990 and 2001). The evidence on the size of the effects is mixed (Brooks-Gunn et al., 2002, Baum et al., 2003, Bayder and Brooks-Gunn 1991, Blau and Grossberg, 1990, Harvey, 1999). Some of these effects may be mitigated by the nature, type and quality of non-parental childcare, home environment and quality of parenting. The figures in this section refer to the economic and related status of mothers and fathers, in contrast to Primary and Secondary Caregivers.

### 8.2.1 WORK STATUS OF PARENTS

*Just over half (54 per cent) of the mothers of three-year-olds worked outside the home, with a further 37*



per cent being engaged in home duties / looking after the family. This compares with 57 per cent and 36 per cent respectively when the child was nine months old. This apparent stability in mother's employment status at the two points of interview masks a lot of change at the level of the individual over the period in question. Mothers who worked outside the home when the child was three years of age did so, on average, for 29 hours per week. Substantial minorities of mothers who worked outside the home appeared to experience work-life imbalances. As would be expected, the extent of these pressures was strongly related to the number of hours worked.

#### Labour-force status at nine months and three years

Table 8.1 summarises the self-defined work status of both mothers and fathers when their Study Child was aged nine months and then three years. Over half of mothers and 82 per cent of fathers described themselves as being *at work outside the home* at three years. Almost 37 per cent of mothers described themselves as being engaged in *home duties / looking after the family* at that time. The table shows relatively few changes in the net figures on mother's labour-force status between nine months and three years, a three-percentage-point fall in the proportion *at work outside the home* and a one-percentage-point increase in *home duties*.

**Table 8.1: Labour force status of resident mothers and fathers in Wave 1 and Wave 2, when Study Child was nine months and three years respectively**

	Mother when Study Child was:		Father when Study Child was:	
	Nine months	Three years	Nine months	Three years
	Per cent*			
At work outside home	57	54	91	82
Unemployed	5	5	6	14
Home duties / looking after family	36	37	1.5	1.5
Student / training	1.5	2.5	0.7	1.3
Other	0.9	1.3	1.1	1.7
Total	100.0	100.0	100.0	100.0

\*Percentages under 3 per cent are shown to one decimal place, all others are rounded to whole numbers

The labour-force status of fathers showed more change over the period in question. There was a nine percentage-point fall in the proportion *at work outside the home* and an eight point increase in the proportion who described themselves as being *unemployed*.<sup>30</sup> This is clearly in line with national trends over the period.

Changes in the circumstances and characteristics of individual respondents can be tracked over time over the two waves of *Growing Up in Ireland*. Table 8.2 shows how the employment status of the Study Child's mother changed between nine months and three years. It illustrates that the small net change (of just under a percentage point) in the proportions of mothers engaged in *home duties / looking after the family* (outlined in Table 8.1) masks considerable change at the level of the individual. Just over 71 per cent of mothers who described themselves as being engaged in *home duties / looking after the family* when the child was nine months of age continued to describe themselves in that way when the child was three years old. Approximately 18 per cent of those engaged in *home duties* at nine months reported that they were at work outside the home by the time the child was three years of age. A further 6 per cent described themselves as unemployed. The 18 per cent who changed between nine months and three years from *home duties* to *at work outside the home* are matched by a 14 per cent counter-flow (from *at work outside the home* to *home duties*) over the same period.

<sup>30</sup> The figures in the table are not unemployment rates. They refer to the percentage of mothers and fathers of three-year-old children who were unemployed at the time of their interview.



**Table 8.2: Changes in labour force status of Study Child's mother, nine months to three years**

Labour-force status, nine months	Labour Force Status, three years					Per cent at nine months
	Employed	Unemployed	Home duties/ looking after family	Other	Total	
At work outside home	81	3	14	2	100	57
Unemployed	26	21	43	11	100	5
Home duties / looking after family	18	6	71	4	100	36
Other	20	9	46	25	100	2
<b>Total</b>	<b>54</b>	<b>5</b>	<b>37</b>	<b>4</b>	<b>100</b>	<b>100</b>

Table 8.3 focuses on the amount of time worked outside the home by three-year-olds' mothers. The figures refer to the number of hours worked, regardless of how the respondent reported her principal economic status.<sup>31</sup> This shows that 45 per cent of mothers of three-year-olds did not work at all outside the home. A further 16 per cent indicated that they undertook work for 20 hours or fewer per week. On average, the 55 per cent of mothers who did any work outside the home did so for an average of 29 hours per week.

**Table 8.3: Hours worked outside the home by mothers of three-year-olds at Wave 2**

Number of hours worked per week by three-year-olds' mother	Per cent
None	45
1-10 hours	4
11 – 20 hours	12
21 – 30 hours	14
31 – 40 hours	21
40+ hours	4
<b>Total</b>	<b>100</b>
<b>Average weekly hours worked outside home</b>	<b>29 hours</b>

### Socio-demographic variations in mother's labour-force status

Substantial variations were apparent in mother's labour-force status according to her educational attainment and family social class. Table 8.4 indicates that when the Study Child was three years of age 74 per cent of graduate mothers were *at work outside the home*. This compares with 43 per cent of those who had left school with a Leaving Certificate and 22 per cent of those who left school at lower secondary level (Junior Certificate) or less. The largest educational gradients were apparent in the proportion who described themselves as being engaged in *home duties / looking after the family* – 62 per cent for those with the lowest educational attainment compared to 21 per cent for those with the highest.

<sup>31</sup> For example, someone who reported being principally involved in home duties / looking after the family could have a part-time job outside the home. Her hours working outside the home are included in these figures. The incidence of part-time work among those who were not economically active outside the home was very low – approximately 2 per cent of all mother of three-year-olds.



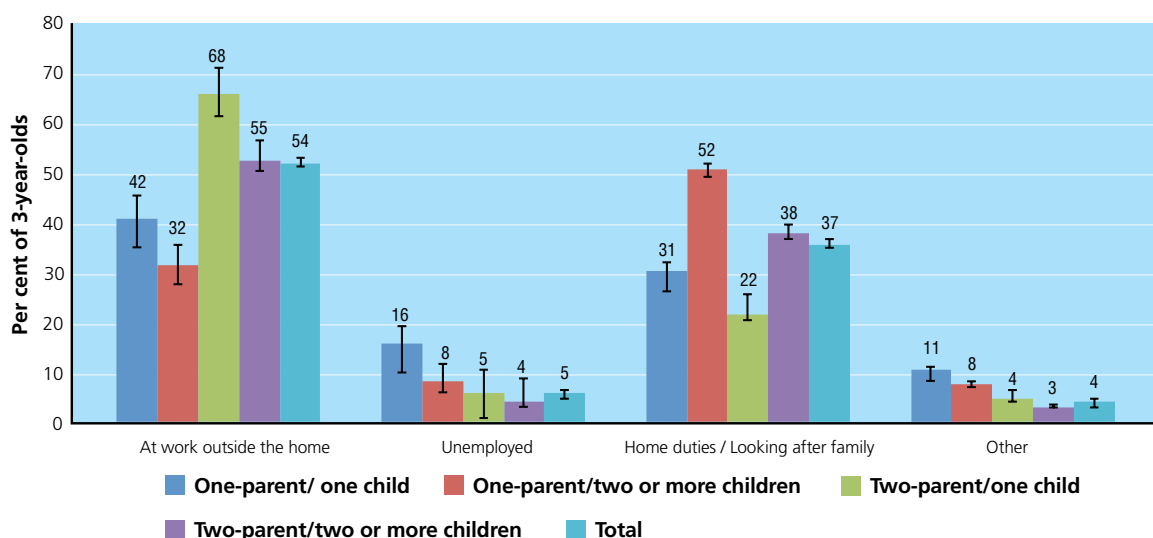
**Table 8.4: Labour-force status of mothers of three-year-olds, by mother's education and family social class**

	At work outside the home	Unemployed	Home duties / looking after family	Other	Total
<b>Mother's Education, Wave 2</b>	<b>Per Cent</b>				
Lower Secondary or less	22	9	62	6	100
Leaving Certificate	43	6	45	5	100
Non-degree	62	5	30	3	100
Degree	74	3	21	2	100
Total	54	5	37	4	100
<b>Family Social Class, Wave 2</b>					
Professional / Managerial	72	3	23	1.5	100
Non Manual / Skilled Manual	52	8	38	3	100
Semi-Skilled / Unskilled	35	8	52	5	100
Never worked	0	4	80	16	100
Total	54	5	37	4	100

\* Due to rounding, rows may not total to exactly 100 per cent. Percentages below 3 are presented rounded to one decimal place.

These social and educational gradients are reflected in variations by family type. Figure 8.1 shows that, in general, mothers in one-parent families were significantly less likely to be *at work outside the home* and more likely to be engaged in *home duties / looking after the family* than their two-parent counterparts (e.g. 42 per cent of smaller one-parent compared with 68 per cent of smaller two-parent families).

**Figure 8.1: Labour force status of three-year-old's mother, by family type**



### 8.2.2 WORK-LIFE BALANCE

One of the main consequences of parental employment is the effect it has on the time available for child-rearing and on the parent's work-life balance. Parents who recorded their principal economic status as being at work outside the home were asked to indicate their level of agreement or otherwise with a number of statements on the effect that work responsibilities had on family activities and quality of family time, as well as the impact of family responsibilities on work activities and work time. The results are summarised in Table 8.5.

**Table 8.5: Measures of work-life balance for mother and father when child was three years old (Wave 2) (based only on those who worked outside the home at time of interview)**

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Total*
	(Row Per cent)					
<b>Because of your work responsibilities:</b>						
a) You missed out on family activities						
<b>Mother</b>	18	31	8	27	16	100
<b>Father</b>	14	28	8	35	15	100
b) Your family time is less enjoyable and more pressured						
<b>Mother</b>	17	38	10	26	9	100
<b>Father</b>	17	41	11	25	7	100
<b>Because of your family responsibilities:</b>						
c) You have to turn down work activities or opportunities that you would prefer to take on						
<b>Mother</b>	21	46	7	21	5	100
<b>Father</b>	22	48	10	18	3	100
d) The time you spend working is less enjoyable and more pressured						
<b>Mother</b>	17	47	10	21	5	100
<b>Father</b>	20	48	12	17	4	100

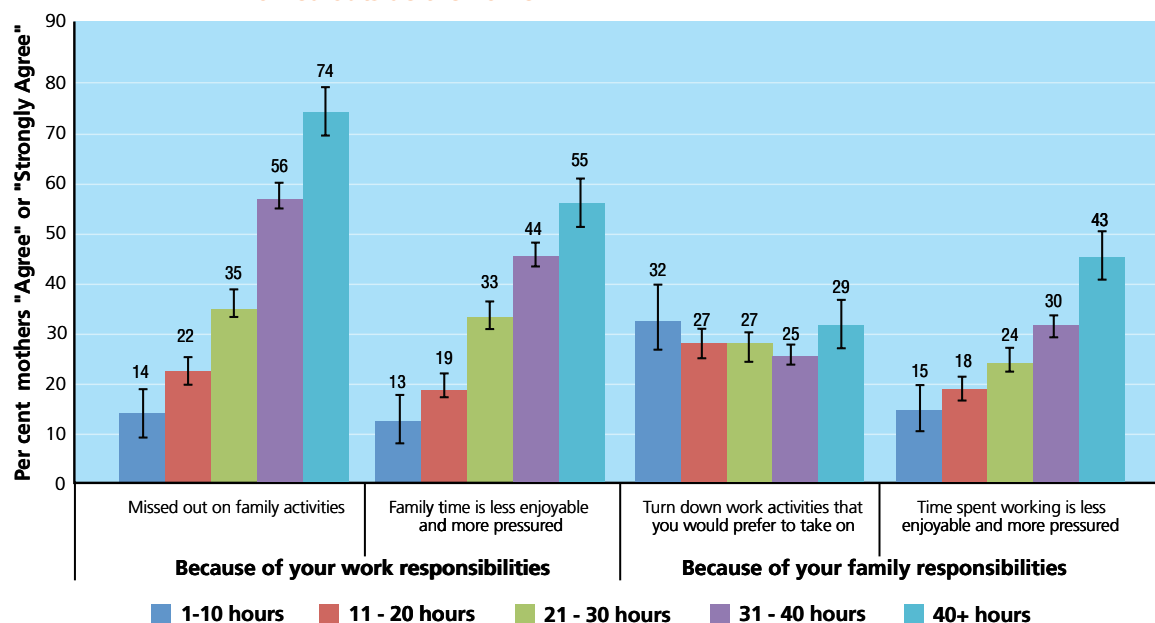
\* Due to rounding, rows may not total to exactly 100 per cent.

It is clear that substantial percentages of both mothers (43 per cent) and fathers (50 per cent) at work *outside the home* felt that they had missed out on family activities as a result of work responsibilities. Furthermore, approximately one-third of both (35 per cent of mothers and 32 per cent of fathers) *agreed/strongly agreed* that their family time was less enjoyable and more pressured as a result of out-of-home work responsibilities. Table 8.5 also indicates that 26 per cent of mothers and 21 per cent of fathers *agreed/strongly agreed* that as a result of their family responsibilities they had to turn down work activities or opportunities which they would have preferred to take on. Similar percentages of both mothers and fathers (26 per cent and 21 per cent respectively) *agreed/strongly agreed* that the time they spent in work was less enjoyable and more pressured as a result of their family responsibilities.

Figure 8.2 illustrates that the percentage of mothers who indicated that their work responsibilities had adversely affected their family time was strongly related to the number of hours worked outside the home. For example, 14 per cent of mothers working 10 or fewer hours per week recorded that they had missed out on family activities as a result of work responsibilities. This percentage increased progressively with number of hours worked – to 74 per cent of those who worked 40 or more hours per week. (Note, however, that, as Table 8.3 shows, only 4 per cent of the mothers of three-year-olds worked 40 or more hours outside the home each week.)



**Figure 8.2: Measures of work-life balance for three-year-old's mother according to number of hours worked outside the home**



### 8.3 ECONOMIC AND FINANCIAL CIRCUMSTANCES

As one might expect, there were substantial variations in income according to social class and educational attainment. There was a big increase in the percentage of families who were experiencing difficulties in making ends meet between the interviews at nine months and those at three years, reflecting the serious recession in Ireland since 2008.

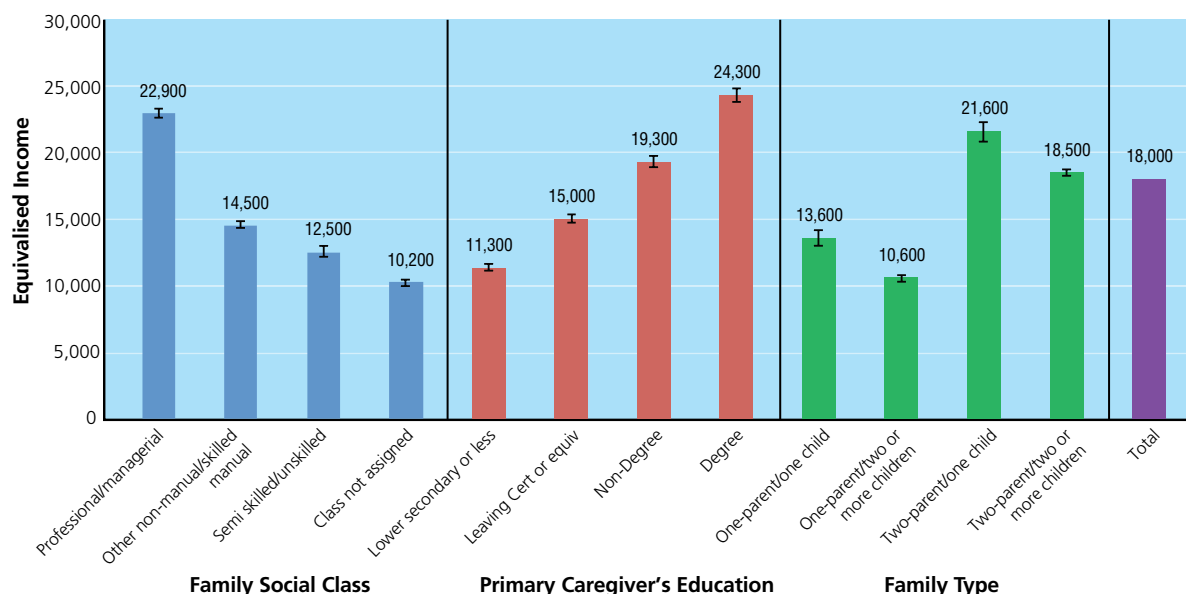
The association between family income, poverty and economic strain on the one hand and child outcomes on the other has been well established in the literature. The incidence, duration, timing and dynamics of poverty and economic strain have been associated, to greater or lesser degrees, with a negative influence on developmental outcomes for children (e.g. Bolger et al., 1995; Duncan and Brooks-Gunn, 1997; Brooks-Gunn & Duncan, 1997; Aber et al., 1997; Yeung et al., 2002; Wood, 2003; NICHD, 2005; Kiernan & Huerta, 2008; Duncan et al., 2010). Duncan and Brooks-Gunn (1997), in particular, led the way in identifying that family economic and financial circumstances in early childhood are especially important in shaping later developmental outcomes.

#### 8.3.1 INCOME

Figure 8.3 summarises average annual equivalised household income, broken down by a number of background characteristics. As noted in Chapter One, to make meaningful comparisons across families in terms of their disposable income, household size and composition (number of adults and children) were taken into account to create an 'equivalised' family income.<sup>32</sup> From the chart, it is clear that income is strongly related to family social class, Primary Caregiver's education and family type. The overall average of €18,000 across all families varied from €10,200 for the lowest social class category to almost €23,000 for the highest. A similar trend was apparent in respect of Primary Caregiver's education. Average family income increased from €11,300 for those whose Primary Caregiver was in the lowest educational group to €24,300 among those in the highest category. Variations by family type were also evident. Larger one-parent families had the lowest equivalised family income, with an average of €10,600. This was just under 60 per cent of the national average for all families with a three-year-old and just less than half of that of smaller two-parent families (who had an average of €21,600).

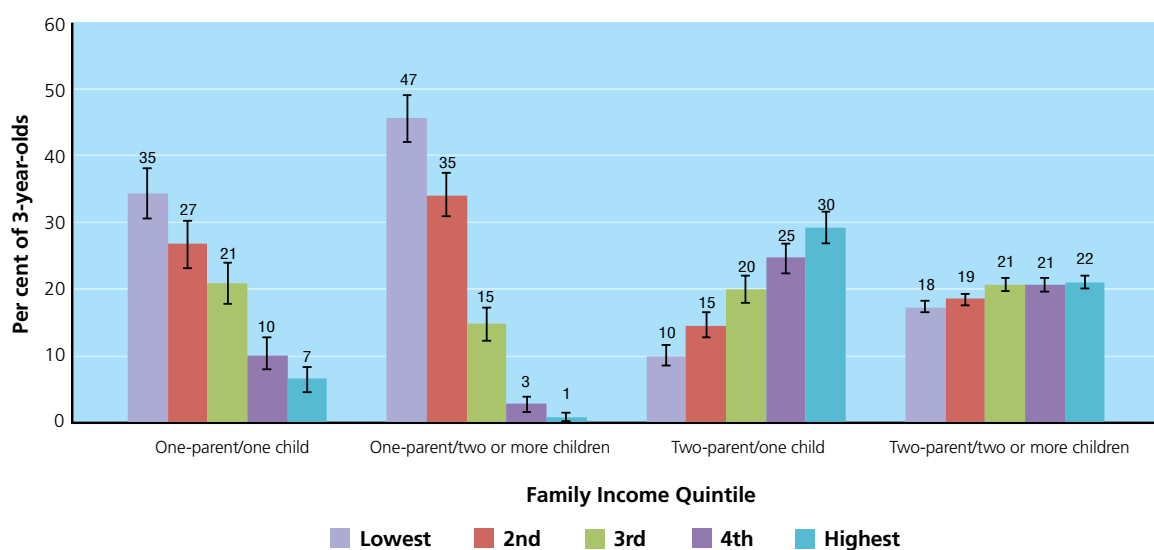
<sup>32</sup> To do this, the number of 'equivalised' adult members resident in the household is calculated. This is done by assigning a weight of 1 to the first adult, 0.66 to all subsequent adults and 0.33 to each child (14 years or less). The total number of adult equivalents is then divided into the household's total disposable income to give the household's equivalised disposable income.

**Figure 8.3: Average annual equivalised household income of families with three-year-olds by (a) family social class (b) Primary Caregiver's education and (c) family type**



The association between income and family type at three years of age is further considered in Figure 8.4. This provides a breakdown of the four family types according to equivalised income quintile. It shows the percentage of each family type falling into each income quintile. Overall, the chart indicates a much greater concentration of one-parent families in the lower-income quintiles. Thirty-five per cent of smaller and 47 per cent of larger one-parent families were in the lowest income quintile. Comparable figures for two-parent families were 10 per cent and 18 per cent respectively. This, of course, reflects differences in the underlying characteristics between one- and two-parent families, including educational attainment, family social class and principal economic status of family members. The relative flatness of the distribution of larger two-parent families indicates that this group is spread throughout the income distribution, with approximately 20 per cent in each income quintile. This is in stark contrast to the steep downward-sloping distribution of one-parent families who are, as noted, heavily skewed towards the lower-income groups.

**Figure 8.4: Family type of three-year-olds by family equivalised income quintile**

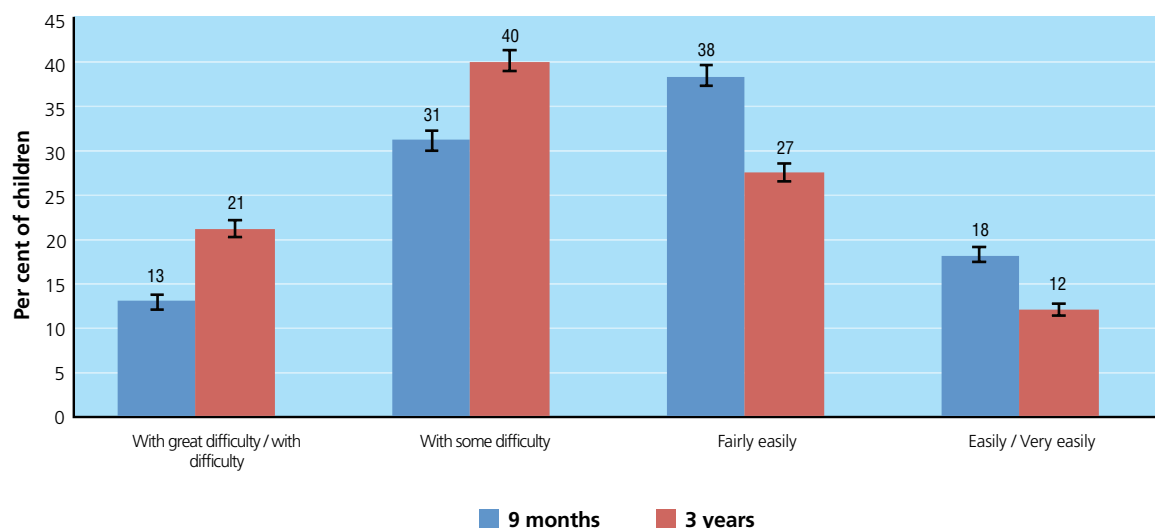




### 8.3.2 DIFFICULTIES IN MAKING ENDS MEET

At both rounds of interviewing, families were asked to record on a six-point scale how difficult they were finding it to make ends meet.<sup>33</sup> Figure 8.5 shows the results. One can see that the percentage of families who said they were experiencing some degree of difficulty<sup>34</sup> increased over the period from 44 per cent to 61 per cent.

**Figure 8.5: Families according to their perception of difficulties in making ends meet when the Study Child was nine months (Wave 1) and three years (Wave 2)**



At the level of the individual family, between their first and second interview, 16 per cent recorded an improvement in terms of their self-assessed economic strain, 44 per cent no change and 40 per cent an increase in strain.

### 8.3.3 EFFECTS OF THE RECESSION

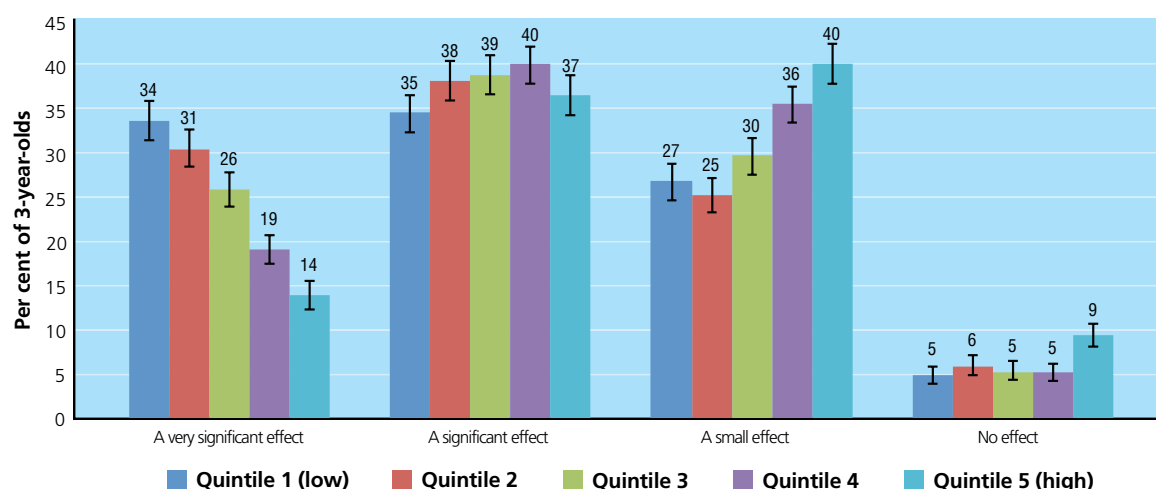
In common with international experience, Ireland has suffered a serious economic recession since 2008, the scale of which could not have been anticipated at the time of the first interview. In 2007 average unemployment stood at 4.5 per cent,<sup>35</sup> rising to 6.4 per cent by 2008. By the time the families were re-interviewed in 2011 the annualised unemployment rate was 14.4 per cent. Female labour-force participation rates had increased by eight percentage points between 2000 and 2007 but, between 2008 and 2011, fell back to 2004 levels. Emigration rates increased towards levels experienced during the economic recessions of the late 1980s and early 1990s. Income levels fell substantially and house prices halved, leaving many families in a situation of serious negative equity and with difficulties in servicing their domestic mortgages. To assess the extent to which families in *Growing Up in Ireland* were affected by the recession between their first and second interview, the Primary Caregivers of three-year-olds were asked to record if it had had a *very significant effect*; a *significant effect*; a *small effect*, or *no effect at all*. Overall, 25 per cent of families with a three-year-old recorded that it had had a *very significant effect* on their lives, with a further 38 per cent recording that it had had a *significant effect*. Only 6 per cent of all families said it had had *no effect at all*.

<sup>33</sup> The response categories were: *with great difficulty*; *with difficulty*; *with some difficulty*; *fairly easily*; *easily*; *very easily*.

<sup>34</sup> i.e. *with great difficulty*; *with difficulty* or *with some difficulty*

<sup>35</sup> See, for example, <http://www.cso.ie/en/statistics/labourmarket/principalstatistics/seasonallyadjustedstandardisedunemploymentratessur/>

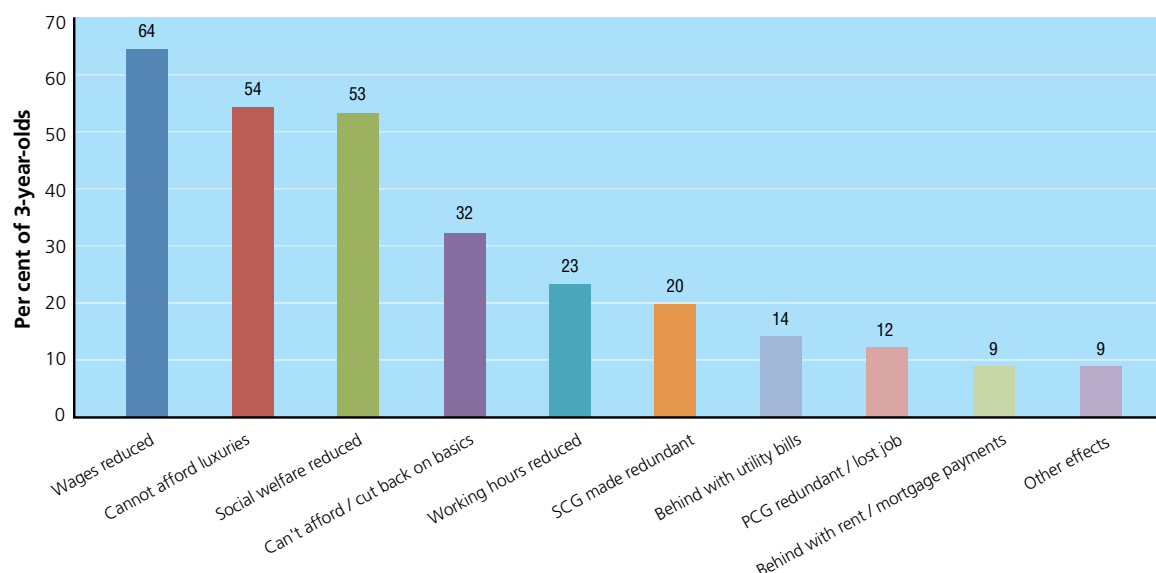
**Figure 8.6: Reported effect of the recession on families with three-year-olds, according to income quintile when the Study Child was nine months old**



The impact of the recession was felt to varying degrees in terms of families' income. Figure 8.6 provides a breakdown according to family income, when the Study Child was nine months of age. This shows that families in the lowest income group at the start of the recession were more likely to record that it had had a *very significant* negative impact on them than those with higher incomes at that time. For example, 34 per cent of families in the lowest income quintile when they were first interviewed said that the recession had a *very significant* effect on their lives. This compares with only 14 per cent of those in the top income quintile at that time.

The families who recorded that the recession had had any effect on their lives (*a very significant, significant or small effect*) were asked to record the nature of these effects, from a list of 10 responses presented to them at their interview. These ranged from the Primary or Secondary Caregiver having experienced a *reduction in wages/salaries* to the family being *unable to afford/cutting back on basics*, to being *behind with utility bills* or being *behind with the rent/mortgage* payments. The relative importance of each of the 10 responses is shown in Figure 8.7. This shows that almost two-thirds of relevant families recorded that they had experienced a *reduction in wages or salaries* and over half indicated that they could no longer afford luxuries (54 per cent) or had experienced a reduction in social welfare (53 per cent). One-third (32 per cent) said they could not afford or had had to cut back on basics. Almost 14 per cent recorded that they were behind with utility bills while 9 per cent indicated that they were behind with rent or mortgage payments.

**Figure 8.7: Effects of the recession on family income since child was nine months**



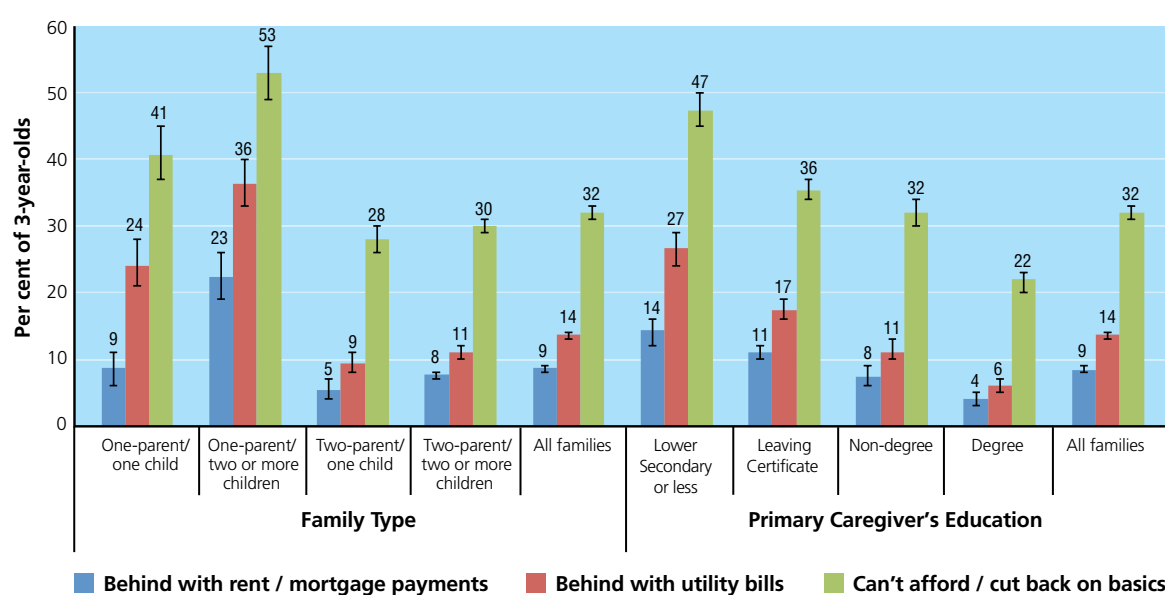




All of these effects will potentially have an influence on the lives of children, both directly in terms of their family's command over resources, and indirectly through increases in stress associated with greater economic strain and its related effects on relationships within the home.

Not only did the recession affect different types of family to different degrees, but the nature of that impact also differed according to the family's circumstances. Figure 8.8 considers three of the potential effects of the recession which are fundamental to the family's well-being: (i) *could not afford/had to cut back on basics*, (ii) *behind with utility bills* and (iii) *behind with the rent/mortgage payments*. The figure indicates the differential effects of the recession according to family type and also Primary Caregiver educational attainment.<sup>36</sup> Significantly higher proportions of one-parent families and those with lower levels of education recorded that the recession had resulted in difficulties in all of the items in question. For example, 53 per cent of larger one-parent families said they *couldn't afford/had to cut back on basics* (compared with 32 per cent of all families); 36 per cent were *behind with utility bills* (14 per cent of all families) and 23 per cent were *behind with rent/mortgage payments* (9 per cent of all families). Similar variations were apparent in respect of Primary Caregiver education.

**Figure 8.8: Differences in three selected effects of the recession, by (a) family type and (b) Primary Caregiver's education at Wave 2 interview (when child was three years of age)**



<sup>36</sup> Primary Caregiver's education and family structure are, of course, correlated (see Section 6.2.3 above).

## 8.4 SUMMARY

This chapter has considered aspects of the financial and economic circumstances of three-year-olds. The period between interviews was marked by one of the most serious recessions ever to have been experienced in Ireland.

The mothers of just over 54 per cent of three-year-olds worked outside the home. Very importantly, the analysis illustrated that the relative stability in this figure between first and second interview masked a great deal of change in labour-force status at the level of the individual family. Just over 14 per cent of the mothers who were *at work outside the home* when their child was nine months old changed their status to *home duties* by three years of age, with a comparable flow of 18 per cent from *home duties* back to the labour force by three years. Mother's economic status was strongly linked to her educational attainment and family social class. There was clear evidence of substantial levels of work-life imbalance among the parents of three-year-olds; 42 per cent of mothers and 50 per cent of fathers agreed that they had missed out on family activities as a result of their work responsibilities.

The chapter also identified strong social and educational gradients in the equivalised income available to families. The concentration of single-parent families and those with lower levels of educational attainment in the lower ranges of the income distribution was highlighted. The substantial increases between the first and second interviews in the percentage of families recording difficulties in making ends meet (44 per cent to 61 per cent) reflect the very changed economic environment facing children and their families by the second interview. Almost all families recorded that they had been affected by the recession, and quite sizeable minorities in very fundamental ways, such as not being able to afford or having to cut back on basics or being behind with utility bills or rent/mortgage payments.

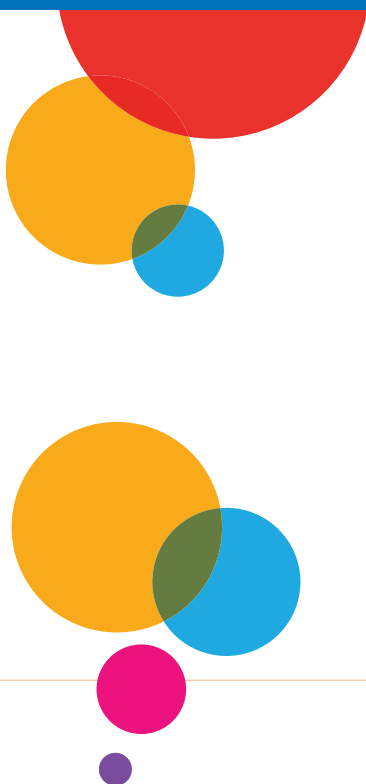
### Next steps: opportunities for future research

The issues identified in this chapter are all highly policy-relevant and malleable. Many of them can be influenced by family-friendly and flexible labour-market policies, income supports and so on. The next obvious pathway for detailed analysis is an investigation of the relationship between the family's circumstances and child outcomes. As noted at the start of the chapter, the international literature indicates a strong relationship between physical, emotional and cognitive outcomes on the one hand and family income, poverty and economic strain on the other. *Growing Up in Ireland* can uniquely examine the relationship between outcomes and financial circumstances, controlling for a range of other contributory and confounding factors.



# Chapter 9

## SUMMARY



## 9.1 INTRODUCTION

This report was based on the data from the second wave of the Infant Cohort, when the child was three years of age. It provided a first descriptive overview of the circumstances, relationships and developmental outcomes of three-year-olds. Most importantly, the report provided a first longitudinal look at how the circumstances of children changed in a little over two years, from nine months to three years of age. These were an extremely turbulent two years for families in Ireland, with the country moving from a situation of economic boom to one of severe economic recession.

The research was structured within the overall framework of the bio-ecological conceptual framework underlying the project. The initial chapters focused on the child and his/her outcomes at three years of age. These were in the three broad outcome domains of physical health, growth and development (Chapters 2 and 3); socio-emotional development (Chapter 4); and cognitive and language development (Chapter 5). This was followed by a consideration of some of the contexts and environments within which the child is growing, moving from the micro- to the macro-systems within the Bronfenbrenner model. Chapter 6 considered the family and parenting environment. These have the first and most enduring influence on the developing child and will usually exert the most important influence on the quality of the child's life and on his/her early development. Chapter 7 discussed childcare arrangements and Chapter 8 considered aspects of the financial and economic circumstances of the child and his/her family.

## 9.2 DISCUSSION OF FINDINGS ON THREE-YEAR-OLDS IN IRELAND

### Physical development and growth of three-year-olds

The majority of the children were found to have achieved the basic motor milestones expected of them at three years of age. Only a few were found to be slower in some of the more complex skills, such as riding a tricycle. Evidence was presented of children who were somewhat developmentally delayed at nine months of age (assessed with the Ages and Stages Questionnaire) being at greater risk of continuing to lag behind their peers at three years, although many did appear to have 'caught up' since the first interview.

The most worrying public health issue among these young children was the prevalence of overweight and obesity – 19 per cent were overweight and 6 per cent were obese. Prevalence of elevated Body Mass Index (BMI) was strongly linked to the family's social class. These trends in BMI and related obesity levels are in line not only with international trends but also with the evidence from the nine-year cohort in *Growing Up in Ireland*.

### Health, illness and injuries among three-year-olds

The children were found to be generally in good health at this age but some important health policy issues were identified. There appeared to be a widening of the social gradients in parental ratings of children's health over time. In terms of chronic illness, children from lower social class groups and also boys were more likely to have been diagnosed by a doctor as having experienced a chronic illness. GP visit levels were also socially differentiated, being higher among children in lower-income families and those covered by a medical card, even when account was taken of health status. Almost two-thirds of three-year-olds had received a course of antibiotics in the year before the survey. Children who were covered by a medical card had significantly higher prescribing rates than those with no coverage, though this relationship was no longer significant when controlling for difference in the average number of GP visits. These social inequalities in health among three-year-olds are a matter of policy concern as early childhood health contributes not only to immediate quality of life but also to differentials in morbidity and mortality in later life.

### Socio-emotional development among three-year-olds

Gender differentials were identified based on the Strengths and Difficulties Questionnaire (SDQ), with boys showing significantly higher levels of behavioural difficulties than girls. Socio-demographic and family

characteristics (including parenting characteristics of warmth and hostility) were also strongly correlated with the prevalence of behavioural problems. Infant temperament at nine months was found to be highly predictive of behavioural problems at three years. Understanding the factors which explain these differentials in childhood behavioural problems and in how parenting styles and parental stress relate to the child's psychological well-being is clearly of importance for the child's current and future well-being.

### Cognitive and language outcomes of three-year-olds

Gender differences in cognitive ability were identified; three-year-old girls performed better than boys in the Picture Similarities and Naming Vocabulary sub-tests of the British Ability Scales. Social gradients were also apparent, especially with respect to the mother's educational attainment and family income. Longitudinally, the disadvantages associated with low birth-weight which were observed at nine months of age were found to persist in terms of developmental delay into the pre-school period. The social gradients which were identified as early as three years of age are clearly a cause of concern. Some evidence in the literature (e.g. Becker, 2011) suggests that attending pre-school can help to mitigate the delays, especially for children from lower-educated families. The recently introduced Free Pre-School Year initiative may have a similar effect on the cognitive development of children in Ireland. This should become apparent when the children are re-interviewed at five years of age. The (UK) Millennium Cohort Study has found that cognitive development is associated with activities such as reading to the child. The results presented in the current report confirm this, showing that three-year-olds whose parents read to them every day were significantly more developed cognitively than other children. While this is good news in the sense that it is a low-cost response to the problem, families may need support in restructuring their time to fit these activities into an otherwise busy schedule. Making them aware of the issues and providing the supports to accommodate the child activities in question is an important first step.

### Parenting and the home environment of three-year-olds

In broad terms, a positive picture emerges of the interactions between parents and their three-year-olds. On balance, most changes in the structure of the immediate family of three-year-olds were associated with the birth of a younger sibling. A minority of children, however, were found to have experienced either the arrival or departure of a parental figure (typically the father) between nine months and three years of age. Approximately 2.6 per cent of children changed from a one-parent to two-parent family while 2.8 per cent changed in the other direction (from a two- to one-parent family unit). Both Primary and Secondary Caregivers appear to be high in warmth, consistent and low in hostility. A cause of concern is the negative association between parental stress and parent-child relationships, with more stressed caregivers being less warm, less consistent and more hostile. There was a large degree of variation in the extent of contact between non-resident parents (mostly fathers) and their three-year-olds. While 23 per cent of three-year-olds had daily contact with their non-resident parent, 28 per cent had no contact at all.

### Childcare for three-year-olds

The quality of early childcare and early education has an important and lasting influence on the child's socio-emotional, behavioural and cognitive development. Half of three-year-olds were in some form of non-parental care for eight or more hours per week. Prevalence of childcare was strongly linked to out-of-home employment, Primary Caregiver education and family social class. As in previous rounds of *Growing Up in Ireland*, regular contact with grandparents was high and they were a major provider of childcare as well as financial and babysitting support for the Study Children. Childcare costs were on average €4.50 per hour, ranging across types of childcare, being highest for non-relative care in the child's home and lowest for those who had a relative care for the child in the relative's own home.

### The financial and economic circumstances of three-year-olds

Ireland was particularly affected between first and second interview by an unprecedentedly severe international recession. This changed the financial and economic circumstances of a very large proportion of families and

resulted in increased unemployment, reductions in wages and salaries, negative equity among home-owners and increased economic strain. Just over half of the mothers of the three-year-olds worked outside the home, with one-third being engaged in home duties. Mother's labour-force participation was strongly associated with her educational attainment – the better-educated she was the more likely she was to work outside the home. Analysis indicated that an apparent stability in the overall labour-force status of mothers at nine months and three years of age masked a substantial degree of change at the level of the individual, with large proportions of mothers changing labour-force status between the nine-month and three-year interviews. As one might expect (in view of the economic circumstances which prevailed between interviews) levels of economic strain increased substantially for families between interviews. At nine months of age 29 per cent of families said they were experiencing great difficulties or difficulties in making ends meet. This had increased to 61 per cent by three years of age.

### 9.3 POLICY IMPLICATIONS

*Growing Up in Ireland* was devised and developed principally as a policy-focused study. One of its main objectives was to provide a strong evidence base which could be used by policy-makers, service providers and researchers with an interest in childhood and children. One of the many strengths of *Growing Up in Ireland* lies in its ability to consider how child outcomes are influenced over time by factors operating across multiple levels and embracing individual and family risk factors, and how policy can address the major risks faced by children. The points below are highlighted for public policy discussion and for the development of the National Early Years Strategy for 0-6 year-olds.

**Obesity:** The high levels of obesity among children as young as three years of age are a cause of major concern. They may be more amenable to policy intervention than those evident among older children, say at nine or 13 years of age, in the older cohort in the study. Although food preferences may have been established by three years of age, three-year-olds have neither the money nor the freedom to buy snack foods in shops. It is unlikely that psychological factors such as low self-esteem and low mood are causing three-year-olds to overeat. Children's food consumption at three years of age is probably more amenable to control and alteration by parents than is the case in later childhood. Parental education was strongly and positively associated with consumption of fruit and vegetable consumption and strongly and negatively related to energy-dense foods such as crisps, chips, hamburgers/hotdogs and non-fizzy drinks. It is important, therefore, that an anti-obesity campaign should include a major promotional drive among parents of pre-schoolers who are still in the process of developing food preferences, eating habits and exercise habits. This implies that schools alone cannot be relied upon to convey the message to parents and children about the importance of a balanced diet and exercise.

**Socio-economic relationship to health outcomes:** The analysis suggested the development of social gradients in terms of health status and chronic illness by three years of age, which were not in evidence at birth or nine months. This increased likelihood of ill health and illness among more socially disadvantaged groups is clearly of significance for policy-makers and service providers. The increased levels of GP visits associated with medical-card cover (even when controlling for confounding influences of ill health) is also a matter of policy concern.

**Infant temperament and support for parents:** Infant temperament was found to be highly predictive of both behavioural maladjustment by three years of age and parental stress levels (which in turn may have feedback implications for parent-child interactions and subsequent behavioural outcomes). This points to the important role which could be played by ensuring that appropriate parenting supports are in place for the groups most at risk.



**Cognitive and language development:** The analysis of cognitive and language development also highlighted the correlation between early developmental delays and those at three years of age. Low birth-weight and poor developmental scores at nine months on the Ages and Stages Questionnaire (ASQ) strongly predicted developmental delays in the pre-school period and highlight the importance of early intervention.

**Child care:** Aspects of non-parental childcare and its role in the child's development – especially issues around the cost of childcare and time spent in various forms of care arrangements – can all inform the debate in policy areas such as statutory maternity leave; childcare; reform of the tax and welfare systems; the flexibility of the labour market, and the family-friendliness of the workplace.

#### 9.4 FUTURE POLICY-RELEVANT RESEARCH

An important next step with the three-year phase of *Growing Up in Ireland* is to go beyond the descriptive and examine the impact of various characteristics and contexts of children and their families on child outcomes, controlling for confounding and mediating influences across all domains in the child's life. The availability of linked nine-month and three-year information makes possible the analysis of change in the early life of the child and facilitates identification of the factors which mediate and moderate the associations between a range of child characteristics and outcomes. With more rounds of the data, this could develop into a consideration of growth trajectories and an analysis of causal relationships.

The announcement in May 2012 of an extension of the Infant Cohort to include a data-collection phase when the Study Children are five years of age greatly enhances the potential of the *Growing Up in Ireland* study. The children and their families will be interviewed in their houses between March and September 2013. Having three observations on the children will substantially improve our understanding of the impact of early life experiences on the development of later outcomes.



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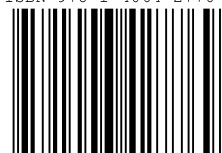
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