



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



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MOTHERS' RETURN TO WORK AND CHILDCARE CHOICES FOR INFANTS IN IRELAND

INFANT COHORT



REPORT 2

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MOTHERS' RETURN TO WORK AND CHILDCARE CHOICES FOR INFANTS IN IRELAND

Frances McGinnity, Aisling Murray and Sinéad McNally

July 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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EXECUTIVE SUMMARY

This report investigates three key research questions relating to the care of infants in Ireland: the characteristics of those mothers who take up paid employment before their infant is nine months old, and when exactly they do so; the extent and nature of non-parental childcare for infants; and the association between childcare and infant health. The report uses a large sample of mothers and infants from the nine-month Infant Cohort of the national longitudinal study of children: *Growing Up in Ireland*.

To set the context, the report considers key features of the labour market and maternity leave and childcare policy in Ireland. The period preceding the fieldwork saw an economic boom in Ireland accompanied by a rapid rise in employment opportunities for women. Following a number of extensions to maternity leave, by 2008-2009, most mothers were entitled to six months' paid leave, and up to sixteen weeks' unpaid maternity leave. Childcare is and has been a major issue for parents and policymakers for many years now. In 2008-2009 state funding for early care and education services for pre-school children was limited, and costs were some of the highest in the OECD. There have been some policy developments since the survey, such as the Free Pre-School year, but not for the 0-2 age group.

This research found that relatively few mothers in Ireland returned to work before the infant was six months old. More specifically:

- Early returns (before 6 months) were more likely to be by self-employed mothers, young mothers or lone mothers.
- Those who returned in the 8-9 month period were more likely to be highly educated, older, Irish and mothers living in a couple.
- Those who had not yet returned at nine months tended to be low-educated mothers, and either very young or older mothers, and lone mothers.
- Highly educated mothers were more likely to return to work than low-educated mothers, but only when paid leave had ended.
- Mothers of three or more children were much more likely to have been out of the labour market prior to childbirth, and their employment rates at nine months were lower than those with one or two children.

Mothers most often cited financial reasons as the main reason for returning to work, though other reasons, such as getting out of the house and career reasons, also played a role, the latter particularly for highly educated mothers.

Almost all mothers working before childbirth took paid maternity leave; a smaller proportion also took unpaid leave, and these tended to be more privileged in terms of income and education. Relatively few mothers returned before 6 months, and a significant proportion returned to work at 6 - 7 months. This suggests that in Ireland, as in other countries, the duration of paid maternity leave plays a strong role in mothers' employment patterns after childbirth.

Just under two-in-five infants (39%) were in regular non-parental childcare at nine months of age. Following the pattern of return to work, most children started non-parental childcare around six months of age; at nine months, the majority (62% of those in care) were in care for less than 30 hours. Use of non-parental childcare for infants at nine months was closely related to mothers' employment. Even accounting for this, family income also played a salient role, with higher-income families more likely to use childcare. Infants from larger families were also less likely to be in non-parental care: this is also likely to be related to cost.

The report also examined differences between childcare settings in terms of use, costs and qualifications of carers. The most common main form of childcare was that provided by a relative (42%, predominantly grandparents), followed by non-relatives (31%, predominantly childminders), with centre-based care such as crèches coming third (27%). Multiple care settings were used each week for around 13% of the infants who were in any kind of regular non-parental care. Carer surveys revealed interesting differences in the care settings, with less one-to-one interaction in centre-based settings, but more books available. Many people caring for infants did not have any childcare-related qualifications. Qualification levels were highest among centre-based carers, but even here they were relatively low.

Relatives emerged as the main non-parental carer for a majority of infants in childcare; the presence of family members living nearby influenced not just the choice of relative care over other care types but also whether non-parental care was used at all. While the infants of more advantaged mothers – in terms of education and income – were less reliant on care provided by relatives, relatives (most of whom were grandparents) were an important source of childcare for low-income families and for younger mothers. Both the strong patterning of childcare choices by income – with low-income families choosing relative care even after accounting for whether family members live nearby, and also parents' own responses on financial constraints – suggest that the cost of childcare was an important factor in childcare choices.

The report also analysed infant health outcomes associated with different childcare settings. Use of a childcare centre was associated with a proportionally low, but statistically significant, increased risk of poorer overall health when compared with parental care. In addition, though there is uncertainty about the timing of infections relative to starting in childcare, infants in centre-based care were at a higher risk for infections of the respiratory tract, ear and gastro-intestinal system. In general, infants in home-based care settings (e.g. relative care or childminders) did not differ in terms of these health risks from infants still in exclusive parental care. The increased risk associated with centre-based care remained, even when adjusting for factors such as child's health at birth and family income.

This report is relevant to two important and related policy issues concerning children: maternity leave and childcare policy. Although causal conclusions cannot be drawn from these data, the evidence in this report suggests that paid maternity leave is an effective instrument influencing the duration of sole maternal care. If government's aim were to extend the duration of sole parental care, extending paid leave would be a potentially successful policy strategy. Whether this leave should be for mothers or fathers or both is another relevant policy decision. Fathers did not benefit from leave extensions to the same extent as mothers, and the data showed that take-up of the existing provision, of unpaid parental leave, was very low.

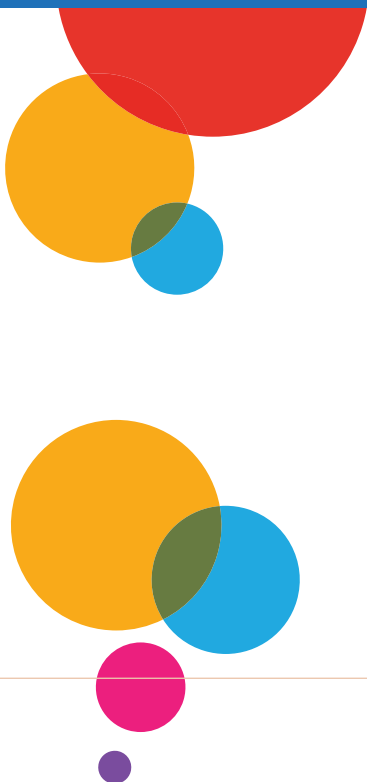
Paid childcare for infants aged under three in Ireland is very expensive. In particular, low-income, low-educated parents were much more likely to use relative care, or no non-parental care at all. Given the role of employment in protecting low-income families from income poverty, high childcare costs are likely to act as a particular disincentive to employment for this group and have implications for income poverty. High-quality affordable childcare would also promote women's continuity in employment, a key issue in terms of the gender wage gap.

Quality of childcare has been shown to be a key factor in child developmental outcomes, and previous research has demonstrated a clear link between carer qualifications and quality of care. To advance the quality of care, it would be beneficial to promote training and qualification of childcare workers. Given the importance of paid childminders as carers for infants in Ireland, consideration should also be given to the regulatory requirements and training supports for childminders.



Chapter 1

INTRODUCTION



1.1. WHY ANALYSE RETURN TO WORK AND CHILDCARE CHOICES?

Who looks after infants in the first year of their life and the potential implications of this has been the subject of much recent debate (OECD, 2009). While there has been a dramatic rise in women's labour market participation in Ireland, including mothers' returning to work after having a child, little is known about who is caring for infants in Ireland and the impact of this on the child and their parents (Russell et al., 2009). Using a large sample of mothers and infants from the nine-month Infant Cohort of *Growing Up in Ireland*, this report investigates three key research questions relating to the care of infants in Ireland: which mothers take up paid employment before nine months and when they do so; the extent and nature of non-parental childcare for infants; and the association between childcare and infant health.

The report contributes to research on caring for children in two main ways. It uses a very large nationally representative sample of infants to provide the first detailed analysis of childcare in Ireland. It also contributes to the international literature by investigating mothers' return to work and childcare in a particular policy setting.

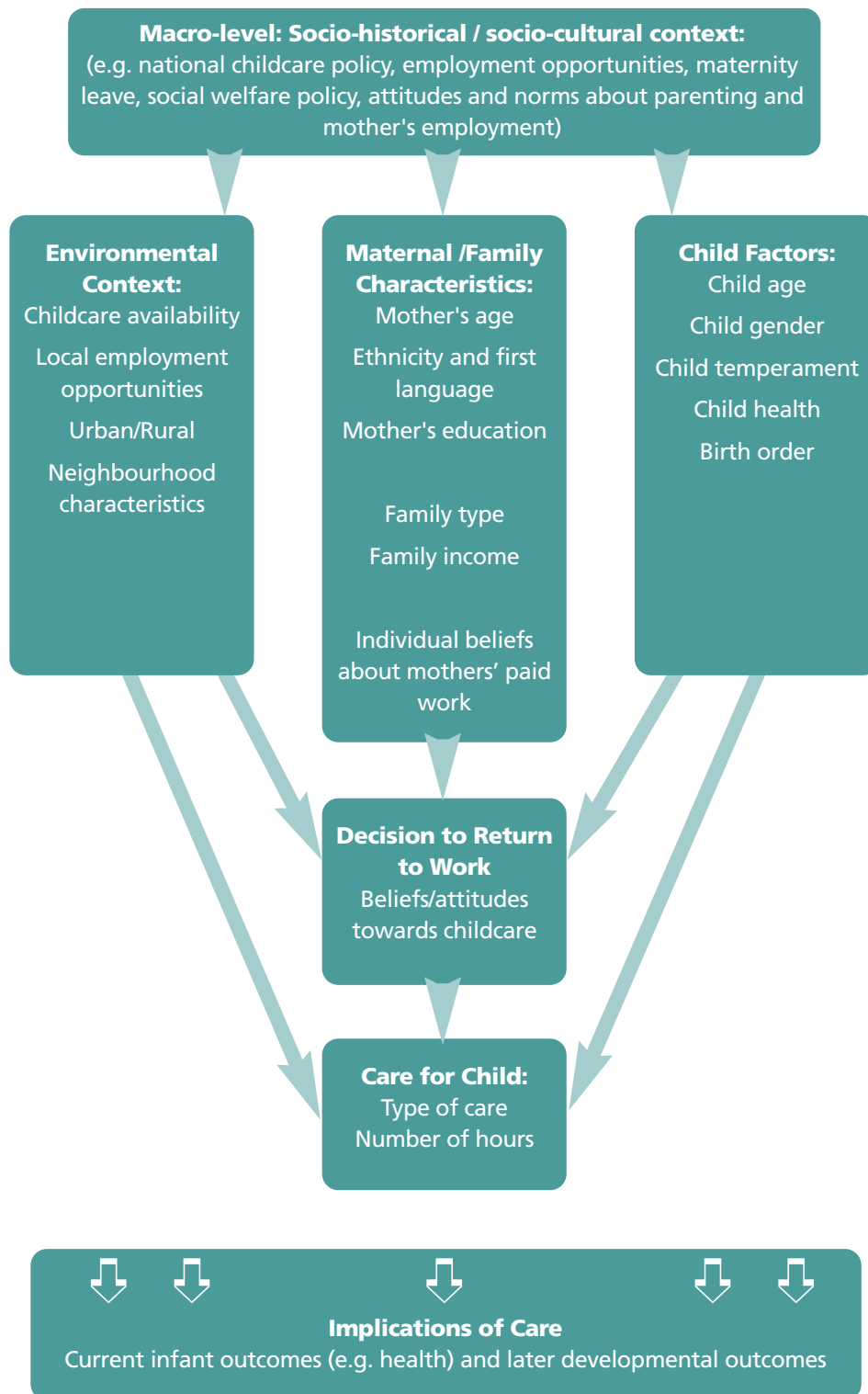
The report is therefore particularly relevant to two important policy issues: maternity leave and childcare policy. Previous research has highlighted the role of maternity leave in incentivising maternal care in the early months (Gregg and Waldfogel, 2005; OECD, 2007). It has also made clear the impact of policy on childcare choices (Sylva et al., 2007). There are many aspects of a young child's life that the State has little influence over, but it does have direct influence over leave provision and many aspects of non-parental childcare.

In the next section (1.2), a conceptual framework for the report is presented, which informs our analysis of infant childcare and the factors associated with it. Section 1.3 provides a broad overview of key issues in previous research and how it has highlighted various factors in the conceptual framework. In Section 1.4, the *Growing Up in Ireland* survey is discussed, with an emphasis on how it is excellently suited to our research questions on maternal return to work and use of childcare; and a description of how key factors influencing parental and non-parental childcare are measured.

1.2 CONCEPTUAL FRAMEWORK

Figure 1.1 presents a conceptual model which underpins much of the empirical analysis of this study. The model ultimately rests on a bio-ecological model (Bronfenbrenner and Morris, 2006), and also draws on Sylva et al. (2007) in their analysis of childcare. It places the selection and timing of childcare within a series of nested contexts, with the child at the centre and the parents, family and neighbourhood context all contributing to (and being influenced by) the mothers' decision to return to work and the choice of childcare. The choice of childcare is then seen as having a potential impact on both current infant outcomes (such as infant health) and later developmental outcomes. The 'macro level' here includes government policy and the labour market context, in which the decisions at the 'micro' and 'exo' levels are embedded.

Figure 1.1: Conceptual model of childcare decision-making in the first year



While this is a useful model for understanding the care of infants, it is of course a simplification of the process. Mothers' paid employment varies widely in terms of hours, for example. Figure 1.1 does not include all possible factors and, perhaps more saliently, does not incorporate all possible directions of effect. The implications of care, in terms of outcomes, are likely to feed back into beliefs and attitudes towards childcare.

Figure 1.1 does, however, highlight key factors that should be considered and how they fit together, and the model it presents underlies the structure of the report. In Chapter 2 the policy context in relation to maternity leave, childcare policy and employment opportunities is outlined. Chapter 3 examines the timing of mothers' return to work and its association with maternal, child and family characteristics, as well as reasons for return and maternity leave policy. Chapter 4 examines the choice between parental and non-parental care, and the quantity of non-parental care provided. In Chapter 5 descriptive information on types of childcare, cost and aspects of quality is provided, as a prelude to analysing how the type of non-parental care is associated with child-related, mother and family characteristics, neighbourhood context and policy context. In Chapter 6 the association between childcare and an outcome particularly relevant for infants, namely health, is analysed. The final chapter summarises the results and reflects on the implications for policy.

1.3 RESEARCH AND DEBATES ON MOTHERS' RETURN TO WORK AND CHILDCARE

1.3.1 PARENTAL CARE AND RETURN TO WORK

Given that regular non-parental care of infants is so strongly linked to the employment status of their mothers, one key issue in understanding the care of infants in the first year of their life is how long their mother stays at home to be the sole carer of her child. A growing international literature investigates the factors that influence a mother's decision to return to paid work after childbirth and its timing. Often this research is concerned with the impact of childbirth on gender equality in the labour market, but it is also highly informative about the duration of sole maternal care. There is much interest in the impact that maternity leave policy has on the timing of return to work, but also on how the characteristics of the mother and her family are associated with return to work.

Previous research has found that women with higher education typically return to work more quickly than those with lower education in the UK, and also in Ireland (Russell et al., 2006). However, some authors have found it is low-educated women who return early, as they are under financial pressure (Smeaton, 2006). Of course, the association between educational qualifications and return to work may be related to maternity leave provision, an issue highlighted by Waldfogel et al. (1999). For example, educational qualifications may play a limited role before the end of paid maternity leave.

The impact of a mother's age on her return to work is less clear, and has been found to vary across countries (Russell and Banks, 2011). Whether or not a mother has a partner may also influence if and when she returns to work. The financial pressure to return to work may be particularly acute for women who bear sole financial responsibility for their children. However, caring for a small infant may be difficult to combine with paid work for mothers without a partner, particularly if reliable and affordable childcare is not available. Previous research shows that patterns of return to work are very sensitive to benefit provisions for lone mothers (Pedersen et al., 2000). Research from the US suggests that mother's ethnicity may be associated with her return to work after childbirth, though this often depends on the nature of the ethnic group and the national context (Sylva et al., 2007). In terms of the infant's characteristics, studies that examined the effect of child temperament on mothers' return to work usually found weak or no associations (Pungello and Kurtz Costes, 1999). Studies do typically find associations between breastfeeding and both the timing of return to work and hours of work (Lindberg, 1996).¹ Studies of infant health at birth and mothers'

¹ See also Layte and McCrory (forthcoming).

employment are less common, though typically child disability is associated with much lower rates of employment for mothers than for children without a disability (Powers, 2001).

Factors other than a woman's personal or family characteristics may influence return to work. Some authors have argued that individual women's work orientation and personal preferences play a role in her choice between full-time motherhood and a combination of paid and unpaid work (Hakim, 2004). The type of job and organisation a woman worked for before the birth of her child may also influence her return to work, such as employment status, the size of the organisation she worked for, industrial sector and security of tenure (Russell et al., 2011). Finally, international research suggests that the timing of return to work is very sensitive to policy provision, though more to paid than unpaid leave (Berger et al., 2005; OECD, 2007).

1.3.2 NON-PARENTAL CHILDCARE CHOICES

There is a considerable amount of research and policy interest in the impact on child development of non-parental childcare in the first 12 months, and much debate (Gregg and Waldfogel, 2005; Belsky, 2005). At first, research was primarily concerned with whether children in childcare centres developed differently from those not attending such centres, though later results highlighted that childcare was diverse and that quality of care mattered (NICHD ECCRN, 2002; Harrison, 2008). Additional research drew attention to the fact that the impact of non-parental childcare may vary depending on the child's home background, in particular that disadvantaged children are more sensitive to variations in quality of care than other children (Phillips and Lowenstein, 2011). Much of this research originates in the US, where the policy context is quite different from Ireland, and it focuses on centre-based 'daycare'. Some more recent studies, particularly in the UK, also examine care by relatives and childminders (Sammons et al., 2003). Research has looked at child-parent attachment, social and emotional outcomes, and cognitive and language development (Melhuish, 2004).

A child's attachment to the mother has come to be seen as a fundamental aspect of development. In an early report, Belsky (1988) argued that insecure attachment patterns were over-represented within a daycare group compared to a home-reared group. More recent work from a large study of daycare in the US, the National Institute of Child Health and Development Early Child Care Research Network study (NICHD ECCRN), found no overall effect of daycare on child-parent attachment, but that the combination of poor-quality care in the home combined with more than 10 hours per week of day care, more than one childcare arrangement or poor-quality childcare was associated with increased risk of insecure attachment (NICHD ECCRN, 1997).²

In terms of social and emotional outcomes, there is some evidence that high exposure to non-parental childcare, in particular group care in the first two years, may increase the risk of developing antisocial behaviour at 3-5 years, though this finding is only for low-quality care (NICHD ECCRN, 2003a). This research shows no harmful effects where quality is high. Gunnar et al (2010) compared cortisol levels of children aged 3 - 4.5 years in family daycare in the US and a group of children in sole parental care. They found higher levels of cortisol in the majority of children (63%) in day care, with 40% classified as showing a stress response, compared to no increase for children at home. Quality of caregiver interaction was crucial: intrusive, overcontrolling care was associated with the cortisol rise. In the UK, Sammons et al. (2003) found no impact on behavioural outcomes for care by relatives. In terms of language and cognitive development, the quality of care has been shown to have differential effects depending on the child's home environment: high-quality care had little or no impact on children who were not disadvantaged in their home environment, but had positive effects on disadvantaged children. Poor-quality care is associated with poorer language development for children overall, though the effect is smaller for disadvantaged children (Melhuish, 2004).

Gregg et al. (2005), commenting on the effect of mothers' return to work on child development in the UK,

² NICHD was set up in 1987 by the National Institute of Child Health and Human Development. The study sampled 1,364 children from different communities in the US and followed them longitudinally; collecting detailed information on the quality and quantity of early non-maternal childcare and taking into account a wide array of relevant background variables.

suggest adverse effects in the case of full-time working in the first year; overall, the size and scale of these effects are smaller than in the US. They suggest that this is due to the greater use of part-time working and the lower incidence of return to work in the first three months as a result of better maternity-leave rights. They conclude that, on average, it is only full-time work up to when the child is 18 months that has adverse effects on child cognitive development, with both part-time work and work after 18 months having no effect.

Typically, research on the impact of non-parental care in the first year on developmental outcomes considers outcomes at 18 months, or more typically 3-5 years. Nine months is very early to examine language and cognitive development. Further, many of these children have not been in childcare for very long – an average of two months. Many of the developmental indicators (communication, gross motor skills, fine motor skills, problem-solving, socio-emotional skills) are evolving and unstable at nine months. This report focuses on a child outcome where it is plausible that there will be an immediate association, such as infectious illness.

Some of the inconsistencies in findings in early childcare research are due to the fact that research has not always taken account of the complexity and diversity of childcare arrangements (Sylva et al., 2007). One key focus of the current report is on type of care for infants, its quantity and cost; on which infants are in which type of care and for how long. Features of the care settings for infants which are likely to be linked to quality are also discussed.

Child, mother, family, neighbourhood and policy factors influence use of non-parental childcare, and likely relate to our understanding of developmental outcomes (Pungello and Kurtz-Costes, 1999). Much of the work on childcare has focused on centre-based care. However, previous work in Ireland has found high levels of relative care of infants, as well as non-relative home-based care (childminders, nannies, etc) (CSO, 2009; Williams et al., 2010).

Following Figure 1.1, factors influencing the type and intensity of non-parental childcare are linked to the child, the maternal/family context, the neighbourhood/local environment, and the mother's employment status. Previous research has found that the age of the child is related to use of childcare; typically, younger children are more likely to be in home-based care and older children in centre-based care (Pungello and Kurtz Costes, 1999). Use of childcare is also clearly related to birth order: first-borns are more likely to be in care than second or subsequent children (Sylva et al., 2007).

Economic circumstances often drive a family's use and timing of childcare, particularly in the US and the UK. A UK study found that at three months low-income children were more likely to be in childcare while at 10 months more advantaged families used childcare (Sylva et al., 2007). Psychological factors also play a role; children of mothers who believe employment brings benefits to children are more likely to be in non-parental childcare (Greenberger et al., 1988).

Finally, policy forms the context in which childcare decisions are made (see Figure 1.1.). This includes national childcare policy – the funding and cost/organisation of childcare; maternity leave and benefit regulations, and employment opportunities for mothers. The policy context is discussed in detail in Chapter 2.

1.3.3 QUALITY OF CHILDCARE

A clear conclusion emerging from recent literature is that the quality of non-parental childcare matters for children's outcomes. How is quality of care defined? Research on quality of care typically distinguishes between process and structural aspects of quality: (1) process refers to the characteristics of the child's experience, e.g. interactions with others, learning experiences, variety in stimulation; (2) structural factors include aspects of the environment, such as accommodation, group size, adult-child ratio, training of staff

and management structure. Research has shown how staff behaviour may be associated with enhanced social and cognitive development. Staff who are highly responsive, have high levels of positive interaction, provide informative verbal information and are not harsh and controlling may enhance children's cognitive/language development and their social behaviour (compliance, cooperativeness, peer interactions) (Howes, 1990; NICHD ECCRN, 2002). Structural factors such as smaller group sizes, low staff turnover and better-trained staff are also associated with improved cognitive and language development (Clarke-Stewart, 1987).

Of course, structural and process aspects of quality are closely related: structural features of good quality provide the conditions that support quality processes (Harrison et al., 2009). For example, carers' qualifications and specific preparation in early childhood care and education are closely related to the quality of language and cognitive interactions, and the extent to which interactions with children are positive, sensitive and warm (Oberhuemer, 2005; OECD, 2006; European Commission, 2011).

In the *Growing Up in Ireland* survey, self-report questionnaires were sent to the children's carers, whether home- or centre-based. While these questionnaires do not provide the kind of detailed information on quality that comes from observational studies, like the Quality of Childcare Settings module in the Millennium Cohort Study in the UK, they do provide a rich source of indicators shown by previous research to be associated with quality, from both centre- and home-based settings, including number of children, number of staff, staff qualifications, time spent on activities and resources for play and learning. In Chapter 5 these features are described in more detail and compared for different kinds of non-parental childcare settings: centre-based care, non-relative home care and relative care.

1.3.4 CHILDCARE AND THE HEALTH OF INFANTS

The *Growing Up in Ireland* Infant Cohort measures a range of developmental and health outcomes at nine months, including developmental outcomes (communication, gross motor skills, fine motor skills, problem-solving, social-emotional skills) and general health and experience of specific infections and illnesses; however, as noted above, there are methodological problems with associating use of childcare and developmental outcomes at this age. In this study, rate of infections is used as an indicator of health outcomes. The impact of childcare on prevalence of infections is more likely to be immediate rather than long-term. However, it will not be possible to compare infections before childcare with infections during one or two months of childcare.

The apparent increase in infections among children who attend centre-based care has been a major focus of the literature in recent years. Research from countries as diverse as the USA, Australia and Norway typically report higher incidents of infections affecting the respiratory tract, ears and gastro-intestinal system among children in centre-based care compared to parental or other home-based care (NICHD ECCRN, 2001; Nafstad et al., 1999). There is some evidence that children aged one year and under may be particularly vulnerable to picking up infections in centre-based care settings (Kamper-Jorgensen et al., 2008). It is likely that the higher risk associated with centre-based care arises from the greater number of children that the infant comes into contact with.

More frequent infections for children as young as nine months may have implications beyond the experience of the illness itself. Increased infections may lead to greater use of antibiotics, and an additional burden and stress for parents in terms of medical fees, absenteeism from work or the need to arrange back-up childcare. While such immediate detrimental effects are clear, the impact is not straightforward: some research suggests that early exposure to illness or infection through care settings may benefit children by boosting immunity over the long term. Findings from the National Institute of Child Health and Development Early Child Care Research Network, for example, have indicated that children who experienced large-group care in their third year were less likely to get stomach and upper respiratory tract

infections in later childhood (NICHD ECCRN, 2003b). Chapter 6 examines the association between overall infant health and the incidence of specific infections, and use and choice of non-parental childcare.

1.4 KEY FEATURES OF THE GROWING UP IN IRELAND INFANT SURVEY

1.4.1 OVERVIEW OF PARTICIPANTS AND FIELDWORK

The primary sampling unit was the nine-month-old infant. Age-eligible infants, born between December 2007 and May 2008, were randomly selected from the Child Benefit Register. Interviews with the mother of the infant were conducted in the home when the infant was nine months old during the period September 2008 to March 2009. The response rate was 65%. A total of 11,134 infants and their families took part in the survey, representing approximately one-in-seven of the total infant population for that cohort. The sample is reweighted to ensure that it is representative of the full population of 73,600 nine-month-olds resident in Ireland at the time of the fieldwork (see Williams et al., 2010, for more details of the survey). This sample represents a unique opportunity to investigate issues relating to childcare for a large, nationally representative sample of very young children. Note that, in the analytic chapters of this report, the *primary caregivers* are referred to as mothers, though in a tiny number of cases they were not the biological mother.

In addition to the main fieldwork with the infants' families, a postal survey of childcare providers was undertaken. Mothers of infants who typically spent eight or more hours per week in a regular non-parental care arrangement were asked for permission to contact their main childcare provider. Where permission and valid contact details were obtained, a self-complete questionnaire was posted to the care-provider. There were different versions of the questionnaire depending on whether the care-provider was home-based (relatives, childminders, etc) or centre-based (e.g. crèche). In total 770 questionnaires were returned from centre-based carers and 1,114 from home-based carers. This represents a response rate of 46% overall; 72% for centre-based carers and 41% for home-based carers. Further details of these questionnaires and patterns of response are discussed in Chapter 5, where the results are also presented.

1.4.2 DESCRIPTION OF KEY DERIVED VARIABLES

Child variables

Temperament: Temperament was measured using the Infant Characteristics Questionnaire (Bates et al., 1979). The primary caregiver rated the infant from 1-7 on a set of items that form four subscales: 'fussy-difficult', 'unadaptable', 'dull' and 'unpredictable'.

Birth order/number of siblings: This variable was based on the number of children in the house, other than the Study Infant, who were aged under 14 years and who were either a full, half, step, adoptive or foster sibling to him/her. This figure was re-coded as 'only child', 'one sibling' and 'two or more siblings'.

Child health at birth: the child's health at birth was measured in response to the question, 'In general, how would you describe infant's health at birth?'. Anything other than 'very healthy at birth' was coded as 'less healthy'.

Duration of breastfeeding: These measures were based on answers to two questions, 'Was infant ever breastfed?' and 'How old was infant when s/he stopped being breastfed?'. Responses were classified as 'never breastfed'; 'breastfed for less than 3 months'; 'breastfed for 3 months or more'.

Maternal and family variables

Age: Age of the primary caregiver was re-coded, in general, into four categories as follows: 'under 25 years', '25-29 years', '30-34 years' and '35 years or older'.

Ethnicity: Ethnicity of the mother was self-reported by the respondent and subsequently regrouped, in general, into three categories: 'Irish' (Irish, Irish Traveller), 'White non-Irish', and 'other ethnic minorities' (African, Black not African, Chinese, Asian not Chinese, Other/Mixed).

Education: Mothers initially chose one of 13 answer categories ranging from 'no formal education' to 'doctorate'. These were re-coded as a four-level variable as follows: 'lower secondary education or less', 'Leaving Certificate or equivalent', 'Post Leaving Certificate' (FETAC, HETAC, etc) and 'Degree or higher'.

Family structure: In this report, family structure is summarised as the mother living with or without a partner – and in the latter case being classified as a lone parent.

Family income: Family income was recorded in the interview as an exact figure or as a 'best guess estimate'. This figure was then 'equivalised' to take account of the number and ages of family members. Finally the equivalised income figure was divided into quintiles, with the wealthiest families being in the highest income quintile.

Area/neighbourhood characteristics

Region: This variable is based on the location of the family home (open country, small town, Dublin city, etc). It is summarised for this report as either 'rural' or 'urban'.

Other family members living in the area: This was a direct yes/no question to the mother and was to include their partner's family (i.e. in-laws).

Availability of centre-based childcare: Mothers were asked a yes/no question on whether 'crèche, day-care, mother-and-toddler groups, etc' were available within relatively easy access of their local area. 'Local area' was self-defined.

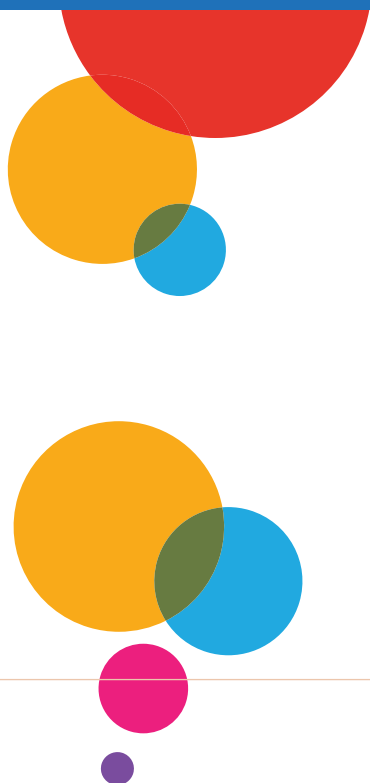
Regular contact with grandparents: This was coded as yes if the primary caregiver said they were in regular contact with the infant's grandparents living in Ireland.

Neighbourhood disadvantage/condition: This variable is an index derived from four statements about the local area which the mother rated on a four-point scale from 'not at all common' to 'very common'. The items referred to 'rubbish and litter lying about', 'homes and gardens in bad condition', 'vandalism and deliberate damage to property' and 'people being drunk or taking drugs in public'. The new index was created by reversing the scoring and summing the four items such that higher scores indicated greater disadvantage. The Cronbach's alpha for the derived index was .86. For analysis, the total score was divided into quartiles, with the highest quartile reflecting particularly disadvantaged/poorest-condition neighbourhoods.



Chapter 2

CARE OF VERY YOUNG CHILDREN – THE POLICY CONTEXT IN IRELAND



2.1 INTRODUCTION

The previous chapter outlined research which shows why non-parental childcare matters for young children: it has an important influence on an infant's wellbeing and development. In addition, the care an infant receives in the early years of his or her life can have a crucial impact on a range of later outcomes (Melhuish, 2004). The purpose of this chapter is to consider the policy and labour market context for care of infants in Ireland – the 'macro' context in Figure 1.1. There are many aspects of a young child's life over which the State has little direct influence; for example, what a child eats and drinks, parenting styles, many aspects of the home learning environment. In contrast, the State has direct influence over parental leave and many aspects of non-parental childcare, which is why it is important to consider the nature of State support.

For the vast majority of infants in Ireland, parental care is the sole or dominant form of care in their very early months. State-provided leave entitlements may influence the duration of this care, so in Section 2.2 leave provision in Ireland is considered. Policies to combine paid work and caring may also influence the hours of work of the primary carer when they do return to paid work, as well as the flexibility in allocating those hours to respond to their infant's needs. This can include flexible working hours, the right to work part-time for the parents of young children, and being able to take time off when the infant is sick. The labour market situation will influence the opportunities for mothers to take up paid employment, so in Section 2.3 the remarkable changes in the Irish labour market in the years preceding the survey, in particular the growth in female employment, are documented.

The system, funding and organisation of childcare provision will influence the nature and quality of non-parental care. How non-parental care for young children is funded and organised varies considerably across countries, and the Irish system is unique in a number of respects; this is the focus of Sections 2.4 and 2.5. As the main purpose of this chapter is to provide a context for the empirical analysis which follows, the focus is on policy provision at the time of the survey, Sept 2008-April 2009. There have been some significant developments in childcare policy since then; these are noted in the text where relevant and summarised in Box 2.1 at the end of the chapter.

2.2 PARENTING AND PAID WORK: LEAVE POLICIES AND FLEXIBLE WORK ARRANGEMENTS

As noted in Chapter 1, some commentators have argued that, in most cases, parental care should be the dominant form of care in the first year of a child's life (UNICEF, 2008). Debates on child wellbeing highlight the role of maternity leave in incentivising maternal care in the early months (OECD, 2007). International research suggests that the timing of return to work is very sensitive to policy provision (OECD, 2007).

All women who become pregnant while in employment in Ireland are entitled to take leave after the birth of their infant, and have the right to return to the same job or to a job on a similar level.³ Many women, if they satisfy certain qualifying conditions (described below), are entitled to receive payment from the State during all or part of this leave. The duration of maternity leave in Ireland was low compared to other European countries at the beginning of the economic boom in the mid-1990s; although legislation, partly in response to an EU Directive, has now improved provision considerably. A series of successive changes meant that, by April 2007, paid maternity leave was 26 weeks, and unpaid leave was 16 weeks. The duration of total maternity leave provision in Ireland now compares well to other West European countries (Moss, 2010, 2012).

³ The entitlement to a basic period of maternity leave from employment extends to all female employees in Ireland (including casual workers), regardless of how long they have been working for the organisation or the number of hours worked per week.



To qualify for paid maternity leave (maternity benefit), the woman needs to (a) have been in insurable employment immediately before the first day of maternity leave and (b) satisfy certain social insurance (PRSI) contribution conditions in the year or years prior to birth. Under these eligibility requirements, the main reasons women may not qualify for payment are either inadequate social insurance contributions due to short service, self-employment or informal employment, or leaving employment more than 16 weeks before the birth of a child (Russell et al., 2011). Payment is calculated as 80% of average gross monthly income in the relevant tax year, subject to a minimum payment of €222 per week and maximum of €280 per week (in 2008, the time of the survey). The relatively low maximum threshold means that the statutory replacement rate for maternity benefit in Ireland falls below the level in a number of comparable EU countries (Moss 2012). Some women receive additional payments from their employer during maternity leave, known as 'top-up' benefits. Russell et al. (2011) found that around half of women (48%) received such top-up payments from their employer.⁴

Parental leave is employment-protected leave of absence to allow employed parents to care for an infant or young child. The 1998 Parental Leave Act introduced a statutory entitlement for both parents to 14 weeks of unpaid parental leave. The EU Directive on which the Parental Leave Act is based allowed individual countries to decide whether this should be paid or unpaid; Ireland chose to have unpaid parental leave.⁵ This lack of payment means many parents cannot afford to avail of leave, and also that men are less likely to avail of it. There is no legal entitlement to paid paternity leave (i.e. time off for the father following the birth of a child) in Ireland. In fact, while the duration of maternity leave has been substantially extended in the last decade, fathers have not benefited to the same extent as mothers. In some other European countries, including the UK, a recent trend has been towards sharing of some portion of post-birth leave (Moss, 2010).

While maternity leave may affect when and if a mother returns to work, the ability to vary working hours to take account of family demands may also influence both when and if women return to work. Such measures could include: the right for parents (or others) to reduce hours when caring for small children; flexible working time or flexi time; job sharing, and working from home.⁶

In Ireland there is no legislative right for parents to work part-time, as is the case in, for example, France, Germany, Holland, Finland, Belgium and France (Gornick and Meyers, 2003); and in Britain for parents of small children. The closest *de facto* part-time work for parents in Ireland is parental leave, though whether this can be taken weekly is at the discretion of the employer, and each parent is limited to 14 weeks per child (Russell et al., 2009).⁷ Rates of part-time work for women rose from 21% of those employed in 1993 to 31% in 2003, but were more stable thereafter (e.g. 32% in 2007). Survey estimates are that the rate of take-up of flexi-time reported for employees in Ireland in early 2009 was around 30% in total, and somewhat higher for women (Russell and McGinnity, 2011). The rate of job sharing (9% of employees) and home working (12% of employees) was much lower. There was a marked increase in both the availability of and use of flexible working arrangements between 2003 and 2009 (Russell and McGinnity, 2011), though considerable variation across occupations and sectors of the labour market.

In Ireland, research has found very high rates of poverty among lone parents and their children, and low rates of labour market participation compared to other European countries – the lowest in the OECD (OECD, 2007). In light of this, consideration was given in Irish policy to reforming the income supports and measures to facilitate return to work for lone parents (Department of Social and Family Affairs, 2006). Such reforms would be in line with practice in many European countries, and would help reduce poverty among lone parents, but authors have argued that their success would depend crucially on childcare supports being available, which is a challenge in the Irish context (Callan et al., 2008). The costs of paid childcare for lone parents represent a very substantial proportion of their income (see Section 2.4). Another key decision in the design of the system is whether engagement in training, education or employment should be compulsory,

⁴ No information is provided in their study about the amount of the payment. The receipt of 'top-up' payments is more common among women in the public sector and in larger organisations.

⁵ A new directive on parental leave, agreed by the Council of Ministers in 2010, was implemented in Ireland in March 2013. This increases the amount of parental leave available for each child to 18 weeks, and also provides a right for employees returning from parental leave to request flexible working and/or reduced hours for a set period of time.

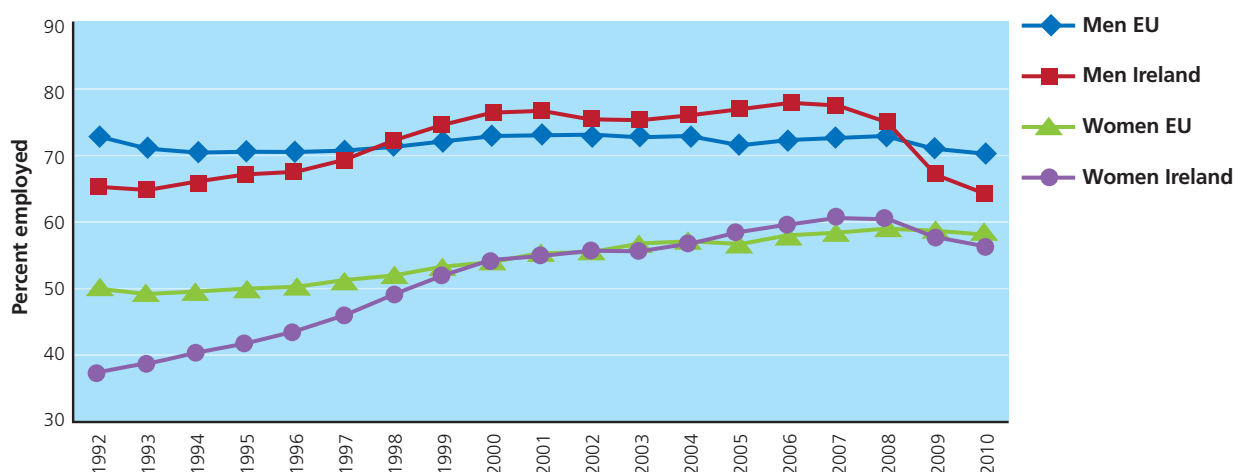
⁶ The Parental Leave Act also gives all employees limited paid leave for family emergencies (force majeure leave) – three days in 12 months.
⁷ Since March 2013 the entitlement is 18 weeks per child. Parental leave, which is unpaid in Ireland and can be taken up to when the child is eight years old, is not the same as paternity leave, which is time off at the birth of a child.

though once again, compulsion is predicated on the existence of high-quality and affordable childcare support (Callan et al., 2008).⁸

2.3 THE ECONOMIC AND LABOUR MARKET CONTEXT FOR MOTHERS' EMPLOYMENT

Many of the changes in childcare provision and women's work were precipitated by remarkable changes in the Irish labour force and market demand in the years preceding the *Growing Up in Ireland* survey. The period 1994 to 2007 was a period of exceptional and sustained growth in the Irish economy and the labour market. The number employed almost doubled in this period, from just under 1.2 million in 1993 to 2.2 million in 2007 (QNHS, Labour Force Survey data). One of the most distinctive features of this labour market change was the growth in female labour market participation. In 1992, the employment rate of women in Ireland was just over 37%. This was well below the European average (see Figure 2.1). By 2004, the employment rate of women in Ireland was 56%, and had converged with the EU average. By 2008, the time of the survey, the employment rate of women in Ireland was 60%. Since then, the employment rate for women has fallen due to the recession, though not as much for women as for men, so the gender gap in employment has also fallen (see Figure 2.1).

Figure 2.1: Employment rates for men and women in Ireland compared to the EU average



Notes: European Union (EU15 – 1992-2004; EU25 – 2005-2006; EU27 – 2007-2010). This employment rate is calculated by dividing the number of persons aged 15 to 64 in employment by the total population of the same age group.

Source: Eurostat, EULFS, population aged 15 to 64 years.

What kinds of jobs did women get? Russell et al. (2009) analysed the 1996 and 2006 Censuses to look at change in occupational sub-groups. Overall, jobs for women were created across the occupational distribution, in a whole range of jobs. Growth was particularly marked in a number of high-skilled occupations, such as managerial/executive and business and commerce occupations, as well as in scientific and technical occupations, but also in low-skilled occupations – notably, in this context, ‘personal service and childcare workers’. This is not surprising, given that a rapid rise in women's labour market participation will create a demand for non-parental care, and, as discussed below, there was a huge capital investment in childcare places.

The overall rise in labour market participation conceals variations among groups of women. In particular, as Russell et al. (2009) note, the rise in participation was much more marked among women with children aged 5-15 and those with no children than among mothers of young children. Thus, even though participation rates rose for mothers of young children, to around 60% in 2007, the gap between them and other women widened during the boom. Participation of lone mothers with young children was particularly low: at 45%

⁸ Proposals for reforming the one-parent family payment have been introduced since early 2012 which involve a progressive lowering of the upper age threshold for the youngest child for receipt of the one-parent family payment. See <http://www.welfare.ie/en/Pages/One-Parent-Family-Payment.aspx> for further details.



in 2007, compared to a participation rate of 68% for lone mothers with older children (5-15 years). Participation of lone mothers did not rise during the boom (Russell et al., 2009).

Following two decades of rapid economic growth, by 2008 Ireland was experiencing a severe economic and labour market crisis, the worst recession since the foundation of the State. The numbers employed fell dramatically, and unemployment soared. The decline in employment was steepest among men, driven by the collapse in the construction sector, but employment rates and job opportunities also fell for women, since the peak in 2007 (see Figure 2.1). The crisis in public finances led to swingeing cuts in public spending, including cuts in public-sector pay and some welfare benefits, and poverty has risen, including poverty among children (CSO, 2011; Watson et al., 2012).

2.4 STATE SUPPORT FOR NON-PARENTAL CARE OF PRE-SCHOOL CHILDREN

Government support for childcare in Ireland has been guided by a number of competing objectives: supporting child development, female employment (and gender equality), social inclusion and high birth rates (Fahey & Russell, 2006). Significantly, the Government tried to steer a course that was neutral in terms of providing support for care in the home (by parents) and care outside the home.⁹ This distinguishes Ireland from many European counterparts, and had a significant impact on policy at the time of the survey.

A key example of this principle is that raising the Universal Child Benefit (UCB) was designated as an important element of the 'Childcare strategy'. Furthermore, in 2006 the Government announced an Early Childcare Supplement, a benefit payable with respect to all children under 5/6 (the qualifying age varied over time). It was explicitly introduced to help parents of pre-school children to meet their childcare needs. The payment was substantial. For example, in late 2008, at the time of the fieldwork for this survey, parents were entitled to €92 per month per child under 5½.¹⁰ This was in addition to €163 per child under 18 in Child Benefit.¹¹ However, as an important OECD report argues, the policy strategy of raising Child Benefit, a cash transfer paid whether parents are working or not, is poorly targeted expenditure in terms of childcare provision (OECD, 2007).

Another important element of policy is that in Ireland, when the demand for childcare rose during the boom, much financial support was indirectly provided in the form of capital grants to encourage private and community-sector provision, in contrast to other northern European countries and continental Europe where there was (or is) more emphasis on state provision of services. In response to the rapid economic boom and rising participation of women in the workforce (described below), the Equal Opportunities Childcare Programme (2000–2006) and its successor, the National Childcare Investment Programme (2006–2010) stimulated the creation and subsequent retention of over 40,000 childcare places through capital funding and subvention of the cost of delivery of services (Department of Education and Science, 2009). Capital grants were available to both private and voluntary-sector organisations, while staffing grants were available for the community/voluntary sector only. These grants allowed some subsidy to those availing of community/voluntary-sector places but the amount of subsidy was variable and the number of places was very limited, being available only in disadvantaged areas, representing about 20% of centre-based childcare providers. In 2008 the funding scheme for delivering community childcare was changed, with funding of community childcare schemes now being linked to social welfare receipt. Under the Community Childcare Subvention Scheme, low-income parents in receipt of specified welfare payments are eligible to a subsidy in participating community services only. Another small scheme, the FÁS (Foras Áiseanna Saothair – National Training and Employment Authority) childcare allowance scheme, offered free, full-time, temporary childcare places to parents on certain vocational training programmes run by FÁS.¹²

However, for the large majority of parents of children aged up to about three and a half, there was and still is no financial support specifically directed towards childcare. Childcare costs are not tax-deductible and there are no childcare tax credits. The Child Benefit and, at the time of the survey, the Early Childcare

⁹ This is less true of the past two years; see Box 2.1.

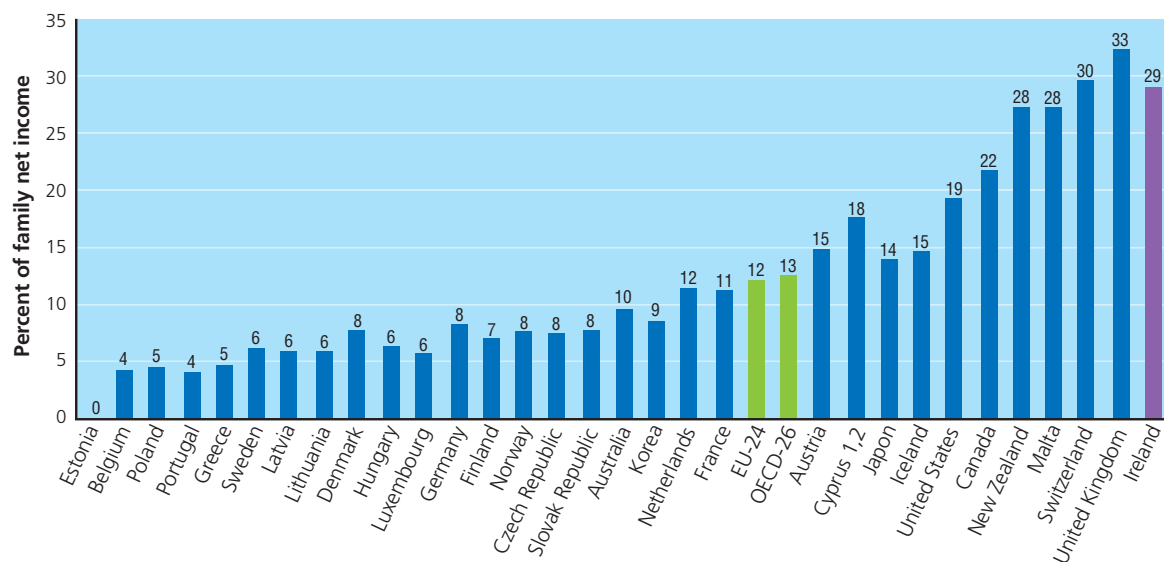
¹⁰ The Early Childcare Supplement was discontinued in December 2009. From January 2010 it was replaced with a free pre-school year of Early Childhood Care and Education (ECCE); see Box 2.1.

¹¹ Child benefit rates have since been reduced.

¹² The Childcare Employment and Training Support (CETS) Scheme replaced the FÁS childcare allowance and applies to people starting a training programme from September 2010 onwards.

Supplement, are/were paid at a flat rate and not contingent on childcare, as discussed above. The cost of childcare for families in Ireland is among the highest in the EU and OECD, because of the low level of government subsidy. Estimates from the OECD illustrate this clearly. Figure 2.2a shows that for a typical dual-earner family seeking full-day care for two pre-school children, the cost amounts to 29% of the family's net income in Ireland, compared to an OECD average of 13%.

Figure 2.2a: Net childcare costs as a % of family net income for a dual-earner family, 2004



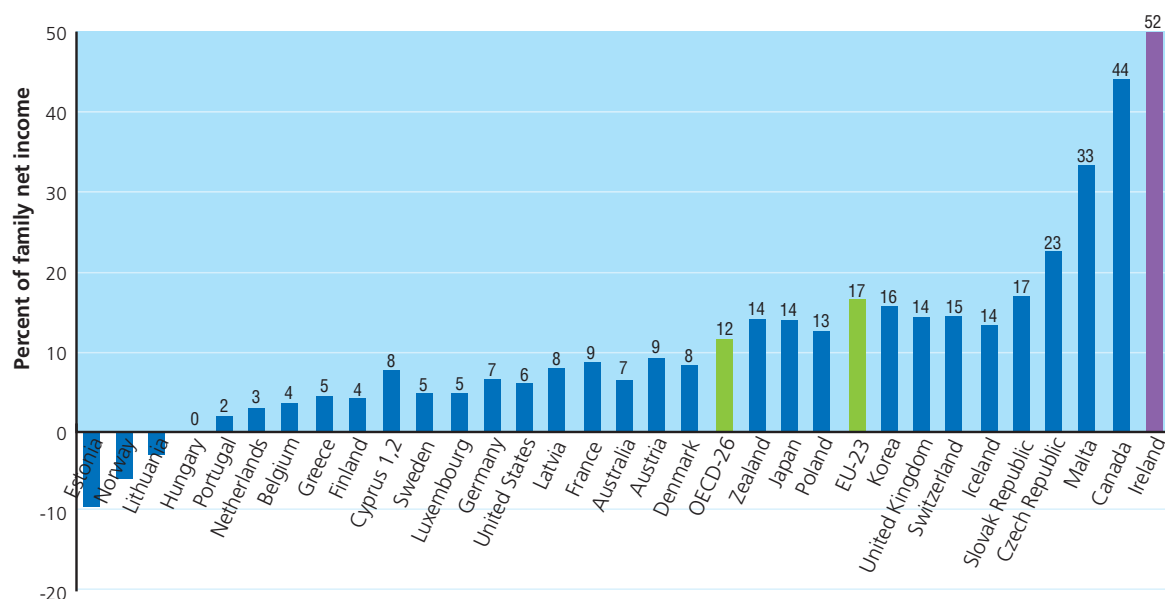
Note: Calculated on the basis that the combined full-time earnings of the couple are 167% of the average wage in that country. Estimates are similar for household earnings of equivalent to 133% and 200% of average wages. See OECD, 2007, pp. 152-5 for detail. Estimates are based on typical fees charged by childcare centres for full daycare for two pre-school children.

Source: OECD 2007.

For a single-parent family, the estimated net childcare costs are even higher. Figure 2.2b shows OECD estimates that, for a typical single-parent family seeking full-day care for two pre-school children, the cost amounts to just over 50% of the family's net income in Ireland, compared to an OECD average of 12%.



Figure 2.2b: Net childcare costs as a % of family net income for a single-parent family, 2004



Note: Calculated on the basis that the full-time earnings of the single parent are 67% of the average wage in that country. See OECD, 2007, pp. 152-5 for detail. Estimates are based on typical fees charged by childcare centres for full daycare for two pre-school children.

Source: OECD 2007.

The choice of childcare arrangement (parental, formal and/or informal care) is influenced by a wide range of factors, but affordability is one of the most influential. Given the costs, it is hardly surprising that previous data show a high reliance on informal childcare arrangements in Ireland. Among pre-school children in non-parental care in 2007 (36% of all children), 30% used informal care (a paid or unpaid relative or friend); 27% a paid carer; and about 43% a crèche/Montessori (CSO, 2009).¹³ There is a wide network of paid carers who look after children in either the child's home (usually au-pair or nanny) or the carer's home (usually called childminders). A large proportion of childminders are unregulated, as there is no requirement for childminders to notify the State if they are caring for three or fewer preschool children. The care of school-age children by childminders is not regulated.

An influential report by UNICEF rated 25 affluent countries on 10 benchmarks relating to the provision of early childhood care and education (ECCE) (UNICEF, 2008). Ireland came in joint last, achieving only one benchmark. There has been progress on some of these policy indicators since this report (see Box 2.1). However, shortly before the fieldwork for the *Growing Up in Ireland* study, dissatisfaction with childcare provision was also evidenced by parents. In a survey on childcare in 2007, 60% of households disagreed with the statement 'I have access to high quality, affordable childcare in my community' (CSO, 2009).

¹³ The use of centre-based services rose significantly between 2002 and 2007 – from 14% to 24% of households with pre-school children (CSO, 2009). This may well be as a result of the rapid rise in the number of childcare places during that period, made possible by government capital investment and the rapid rise in female labour market participation (described above).

Box 2.1: Recent Developments in Childcare Policy in Ireland

The introduction of the Free Pre-School Year in January 2010, which is available in the academic year preceding school entry, represents an important recent development in childcare policy. It replaced a universal cash supplement (Early Childcare Supplement) with an early care and education service, albeit for a limited number of hours. Children can start the scheme at any age between 3 years 2 months and 4 years 7 months, and it is estimated that it now has around 94% take-up.¹⁴ The Free Pre-School Year is phasing in qualification requirements, at a low level, and only in relation to pre-school leaders in the pre-school year: since 2012 leaders are required to have at least a qualification at level 5 on the National Framework of Qualifications.¹⁵ These requirements are not directly related to the care of infants, but may have a knock-on effect in centres where infants are being cared for in the same childcare setting as 3-4 year-olds.

In early 2012, the Minister for Children and Youth Affairs announced that Ireland's first National Early Years Strategy for children aged 0-6 years would be developed during the course of 2012, and an expert advisory group was established. According to the Department of Children and Youth Affairs (DCYA), "The Early Years Strategy will cover all aspects of children's experiences in their early years including health, family support, care and education and will identify the structures and policies needed to improve early years experiences in Ireland" (DCYA, 2012).¹⁶

2.5 GOVERNANCE, REGULATION AND QUALITY OF CHILDCARE

Developments in policies for the provision of childcare in Ireland over the past 15 years include the introduction of a national policy framework (Síolta, 2006), a curriculum framework (Aistear, 2009) and Equality and Diversity Guidelines (2006). However, by 2011 there was no national plan for early childhood care and education, in spite of recommendations from the OECD, the National Economic and Social Forum (NESF) and the Social Partners (Start Strong, 2010). Ireland's first National Early Years Strategy, for children aged 0-6, is still being developed at the time of writing (see Box 2.1).

The Office of the Minister for Children and Youth Affairs (OMCYA) was established in 2005 and in 2011 became the Department of Children and Youth Affairs (DYCA). This department is responsible for early care and education services. The Health Services Executive (HSE) is responsible for the inspection of childcare services and implementing regulations. A number of institutions are responsible for training childcare workers (primarily Vocational Educational Colleges and Institutes of Technology). At local level, City and County Childcare Committees were established in 2001 to support childcare services. They mainly offer supports to childcare service providers.

The regulation of childcare in Ireland has tended to focus on health and safety issues, as opposed to quality of care. For example, the Child Care (Pre-school Services) Regulations (DHC, 1996), which came into effect in 1997, outlined the requirements for services to provide a quality environment, including health and safety issues, staff-child ratios, space afforded per child, ventilation, lighting and insurance requirements.¹⁷

Adult-to-child ratios are specified to range from 1:3 for children under one year old in full-time day care; 1:5 for 1-2 year-olds; 1:6 for 2-3 year-olds and 1:8 for children over three (Department of Health and Children, 2006). Childminders may not look after more than five pre-school children, including their own, or more than two children less than 15 months old. The regulations are also limited to those caring for three or more children, which excludes many childminders.

¹⁴ There are a number of variants in the scheme. The most common is 15 free hours per week spread over 38 weeks per year, i.e. in line with the school terms. (A large proportion of 3-4 year-olds are now in sessional services for exactly 15 hours per week, i.e. zero net cost to parents.) Other variants have included 11 hours 15 minutes per week spread over 50 weeks (reducing the net fee charged for full daycare services).

¹⁵ In addition there is a higher capitation grant payable for sessional services led by a graduate with at least three years' experience.

¹⁶ <http://www.dcy.gov.ie/viewdoc.asp?DocID=1809%20>.

¹⁷ These apply to pre-schools, playgroups, day nurseries, crèches, childminders looking after three or more children, and similar services catering for children aged birth to six, though not children aged four, five and six attending national schools.



The 1996 regulations did not focus on many important elements of practice such as adult-child interactions, extending and enriching children's learning by understanding each child as a learner, and planning, creating and using a stimulating and nurturing learning environment (Department of Education and Science, 2009). The revised Child Care (Pre-school Services) (No 2) Regulations 2006 recognise the role of carers in children's learning and development, and include children's welfare and development, though in 2008-2009, at the time of this survey, there were no requirements regarding staff qualifications (Department of Health and Children, 2006).

More recent debates on childcare policy have recognised the importance of the quality of care, qualifications and the professionalisation of childcare work, as illustrated, for example, by the publication of 'Developing the workforce in the early childhood care and education sector: Background discussion paper' by the Department of Education in 2011. This is very much in line with international literature which highlights the relationship between the qualifications of staff and the quality of service provision (Oberhuemer, 2005; OECD, 2006; European Commission, 2011). Some qualification requirements have been introduced with the Free Pre-School Year (see Box 2.1), though these do not directly relate to the care of infants.

Overall, there is very little research on the characteristics of non-parental childcare settings in Ireland (Mahony and Hayes, 2006), particularly involving nationally representative data. Chapter 5 examines in more detail selected features of the childcare settings that nine-month-olds attend, in terms of facilities and activities, one-to-one interactions, ratio of carers to children and carers' qualifications.

2.6 SUMMARY

The purpose of this chapter was to describe the policy context for the care of young children in Ireland, as a prelude to analysing data on care of infants. As noted at the start of the chapter, leave policy and childcare policy may play an important role in influencing who is caring for children.

The years preceding this survey were of unprecedented economic growth, accompanied by a rapid rise in female labour market participation and job opportunities for mothers. The demand for childcare places rose rapidly.

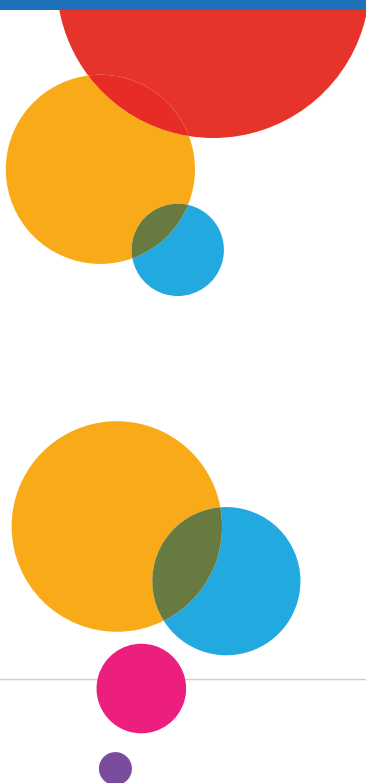
There were successive extensions to maternity leave in the decade prior to the survey, and paid maternity leave is now of six months' duration while unpaid leave is sixteen weeks. The total duration of leave for mothers now compares well to that in other European countries. There was less policy development in the period for fathers, with no paid leave entitlement at all at the time of the survey.

Childcare is and has been a major issue for both parents and policymakers for many years. When the demand for childcare rose during the boom, much financial support was indirectly provided in the form of capital grants to encourage private and community-sector, rather than State, provision. For some low-income parents there are childcare subsidies, but for the large majority of parents of children aged up to about three and a half, there was and still is no financial support specifically directed towards childcare, and no State provision. In 2008-2009 the quality of non-parental childcare – though one of the most expensive in the OECD – was not the primary focus of policy in Ireland.



Chapter 3

MATERNAL CARE AND RETURN TO PAID WORK





3.1 INTRODUCTION

One of the most striking changes in recent decades in Irish society has been the rapid rise in the labour market participation and employment rates of women. By 2004, female employment rates in Ireland had converged with the EU average. In this chapter the implications of this rise for the employment of mothers in the first nine months of a child's life is examined, by analysing the duration of sole maternal care for a large sample of mothers with infants.

The key research questions in this chapter are: when do mothers return to work and how is this associated with several key characteristics such as mother's education, age, ethnic background and partnership status (along with the other factors highlighted in Figure 1.1). It also considers the role of child factors (number of siblings, breastfeeding, child health, and child temperament) in the timing of return to work, as well as the role of family support, including the proximity of extended family and contact with grandparents. The reasons for return to work of mothers are complex, so as well as accounting for the mother's previous job, the models also investigate the reasons a mother gives for return to work and how this is related to the timing of return. As the focus is on biological mothers who may have been entitled to maternity leave, the very small number of other primary caregivers are excluded from the analysis in this chapter.

Mothers who had worked prior to the birth were also asked about whether they took paid or unpaid maternity leave. Chapter 2 discussed how maternity leave in Ireland had been progressively extended in the months prior to the study, and other studies have highlighted the role leave plays in the timing of return to work. This chapter considers the take-up of both paid and unpaid maternity leave for mothers who were working prior to the birth of their infant, as well as leave uptake by fathers. The association between the timing of return to work and taking maternity leave was also studied.

The nine-month observation period for the Infant Cohort of the *Growing Up in Ireland* study was relatively short, and many women who planned to return to work would not yet have done so, but it is nevertheless a crucial period for analysing return to work. Given the events were so recent, recall error was unlikely to be a problem since it was the last nine months that were covered.

3.2 PREVIOUS RESEARCH ON MOTHER'S RETURN TO WORK AFTER CHILDBIRTH

As noted in Chapter 1, the growing international literature investigating the factors that influence a mother's decision to return to paid work after childbirth and its timing is often concerned with the impact of childbirth on gender equality in the labour market, but it is also highly informative about the duration of sole maternal care. Most of this research has been conducted internationally but special attention is paid here to two Irish studies of the topic (Russell et al., 2006 and Russell et al., 2011).

Women with higher educational qualifications and those who occupy 'privileged' jobs prior to having an infant are likely to have both stronger financial motives to return to work, as they earn more, and stronger non-financial motives to return to work, as the consequences of a break in terms of career development may be higher for them than for women with lower education in low-skilled jobs (OECD, 2007). They may also enjoy work more. Previous research has certainly found that women with higher education typically return to work more quickly in the UK (McRae, 1993; La Valle et al., 2008) and also in Ireland (Russell et al., 2006). However, analysing UK data, Smeaton (2006) highlighted a countervailing influence: low-educated women returned early for financial reasons. For example, Russell et al. (2011) found low-educated women in Ireland are more likely than those with a degree to either return to work early, or to remain outside the labour market for more than two years. Of course, the influence of educational qualifications may be conditioned by maternity-leave provision, an issue highlighted by Waldfogel et al. (1999). It may be that educational qualifications play a role in the decision at the end of paid maternity leave.

In terms of demographic characteristics, the impact of a mother's age on her return to work has been found to vary across countries (Russell et al., 2011). For example, research in France and Ireland has found that older mothers have slower and lower return to work rates, even after controlling for other factors (Russell et al., 2006; Saurel-Cubizolles et al., 1999); however, in Spain older mothers are more likely return to work (Saurel-Cubizolles et al., 1999).

Whether or not a mother has a partner may influence if and when she returns to work. The financial pressure to return to work may be particularly acute for women who bear the sole financial responsibility for their children. However, caring for a small infant may be difficult to combine with paid work for mothers without a partner, particularly if reliable and affordable childcare is not available. Previous research shows that patterns of return to work are very sensitive to benefit provision for lone mothers (Pedersen et al., 2000). For those in partnerships, their partner's employment status or earnings may influence their return to work, and this may vary cross-nationally (Blossfeld and Drobnic, 2001). McCulloch and Dex (2001) found no impact of partner's resources on return to work in the UK, but more recent work from the UK found that women's likelihood of returning to work increased as their partners' earnings decreased (LaValle et al., 2008).

Typically, second and subsequent births are associated with lower return-to-work rates (Russell et al., 2006). Here it is important to distinguish whether the focus is limited to those working during pregnancy with this child, or mothers who had ever worked. Studies that examined the effect of child temperament on mothers' return to work usually found weak or no associations (Pungello and Kurtz Costes, 1999). Mothers' return to work, particularly full-time work, is associated with cessation of breastfeeding, so we would expect breastfeeding to be associated with later return to work (Lindberg, 1996; Layte and McCrory, forthcoming). Infant health problems may also delay return to work (Derigne and Porterfield, 2010).

Factors other than a woman's personal or family characteristics may influence return to work. Some authors have argued that individual women's work orientation and personal preferences play a decisive role in her choice between full-time motherhood or a combination of paid work and motherhood (Hakim, 2004; Pungello and Kurtz Costes, 1999). In practice it is hard to distinguish whether preferences influence behaviour, or behaviour influences preferences, as individuals may fit their preferences to match their

circumstances. In addition, individuals may not exercise their preference because of financial or other (e.g. childcare) constraints. Whatever a mother's individual preference, societal attitudes may influence mothers' return to work too (Pungello and Kurtz Costes, 1999). In recent decades, attitudes in Irish society have become considerably more supportive of mothers working. In 2002, for example, attitudes towards mothers of pre-school children working were more supportive in Ireland than in the USA, France or Spain (Russell et al., 2009, using ISSP data).

The type of job and organisation a woman worked for before the birth of her child may also influence her return to work. For example, Russell et al. (2011) found that self-employment was strongly associated with early return to work: self-employed women were five times more likely to return to work within 22 weeks than employees. This may be linked to lower benefit receipt for this group, and/or greater flexibility in scheduling work (Russell et al., 2011). Other factors associated with the timing of return to work in Ireland were the size of organisations, industrial sector and security of tenure (Russell et al., 2011).

International research suggests that the timing of return to work is very sensitive to provisions of maternity-leave policy, though more to paid than unpaid leave (OECD, 2007). In the US, Berger and Waldfogel (2004) found a strong association between leave entitlement and return to work: mothers who were entitled to take paid maternity leave (in this case 12 weeks' duration) were unlikely to return to work before 12 weeks post-birth, but were also considerably less likely to take leave of more than 12 weeks. Berger et al. (2005) found that, although maternity leave is associated with longer leave-taking (which may have certain economic costs) and may increase leave lengths up to a certain threshold, after a certain point evidence suggests it in fact facilitates increased return of mothers to work. Similarly, Saurel-Cubizolles et al. (1999), who compared return to work after childbirth in France, Italy and Spain, found that the patterns of return to work were consistent with the duration of paid post-natal leave in each country. Ondrich et al. (1996) used longitudinal data from the German socio-economic panel to estimate the impact of various changes to paid maternity-leave provision on the timing of mothers' return to work in Germany. They found no effect for the size of payment, but did find that mothers tended to take advantage of the full extent of paid leave, and lengthening the paid leave period had the effect of mothers interrupting paid work for longer. Together, this international evidence suggests that the duration of paid maternity leave is a powerful policy lever influencing the behaviour of mothers in the immediate post-natal period.

3.3 PATTERNS OF RETURN TO WORK BY MOTHERS OF INFANTS

Figure 3.1, based on the *Growing Up in Ireland* Infant Cohort, shows the percentage of mothers at work in the nine months after giving birth. As the key focus of this report is on the infants and who was caring for them, all mothers of infants were considered, and not just those who were working prior to birth, as is typical in analyses of interruptions to women's careers following childbirth. This graph and those that follow thus include those who worked before the birth of their infant, and those who did not.

An extremely low proportion of mothers started work in the first four months after childbirth, and even by five months only 8% were working. A rapid increase occurred at six months, which coincides with the end of paid maternity leave in Ireland. There was then a continual increase in subsequent months to 44% of mothers working by the time of interview. Some mothers supplemented paid leave with annual leave, and some also took unpaid leave; paid and unpaid leave together end at around nine months. Mothers also varied in terms of the amount of the 26 weeks' paid leave they took before the birth; 78% of mothers in this sample were working prior to birth. If the focus is limited to those who had worked, 57% of them were back to work by the time of interview at nine months.

Figure 3.1: Percentage of mothers in the GUI Infant Cohort at work in each month after giving birth to the Study Child



Note: 78% of mothers were working prior to birth, 22% were not working. Graph includes all mothers except those for whom no date of return to work was available.

Figure 3.1 looks remarkably different to one describing a similar sample of US mothers for the nine months post-childbirth (Han et al., 2008), where 40% of mothers were working after three months, and 60% at nine months. In the US, paid maternity leave is only available for a minority of mothers and for a much shorter duration than in Ireland (Han et al., 2008). As Berger et al. (2005) argue in relation to the US, return to work is very sensitive to leave provision.

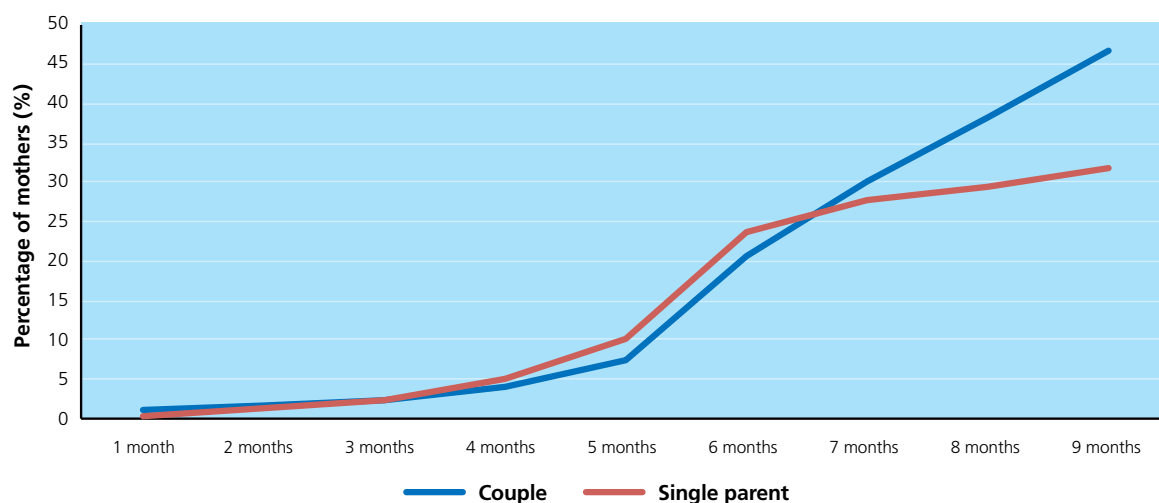
The rapid increase in paid employment at six months, together with international evidence on the role of paid leave (Saurel-Cubizolles et al., 1999; Ondrich et al., 1996), suggests that the duration of six months of paid maternity leave played a role in the timing of return to work of mothers of infants in Ireland.¹⁸ This will be investigated further using a multivariate model in Section 3.7.

Return to work can vary according to the characteristics of the child and the mother. Figure 3.2 compares the percentage of mothers in couples and single mothers at work after birth.¹⁹ Compared to mothers in couples, single mothers (lone parents) were somewhat more likely to be employed at four, five and six months but by nine months employment rates for lone mothers were much lower. Lone mothers may feel financial pressure to return early, as their jobs may be less well paid. Yet, as discussed in Chapter 2, they may also face trade-offs between work and welfare, and childcare costs. Net childcare costs as a proportion of total income are particularly high for single parents, and the loss of welfare income, combined with the cost of childcare, may make it more difficult to return to work.

¹⁸ Other explanations for the pattern of return to work could include breastfeeding or childcare availability. Given that 89% of mothers had stopped breastfeeding before five months, and over 70% by three months, the end of breastfeeding is likely to play a more minor role. There is also little variation in childcare costs and availability up to 12 months in Ireland.

¹⁹ An analysis distinguishing mothers in cohabiting couples and married couples was run but the timing of return was very similar for these groups so they are combined in Figure 3.2.

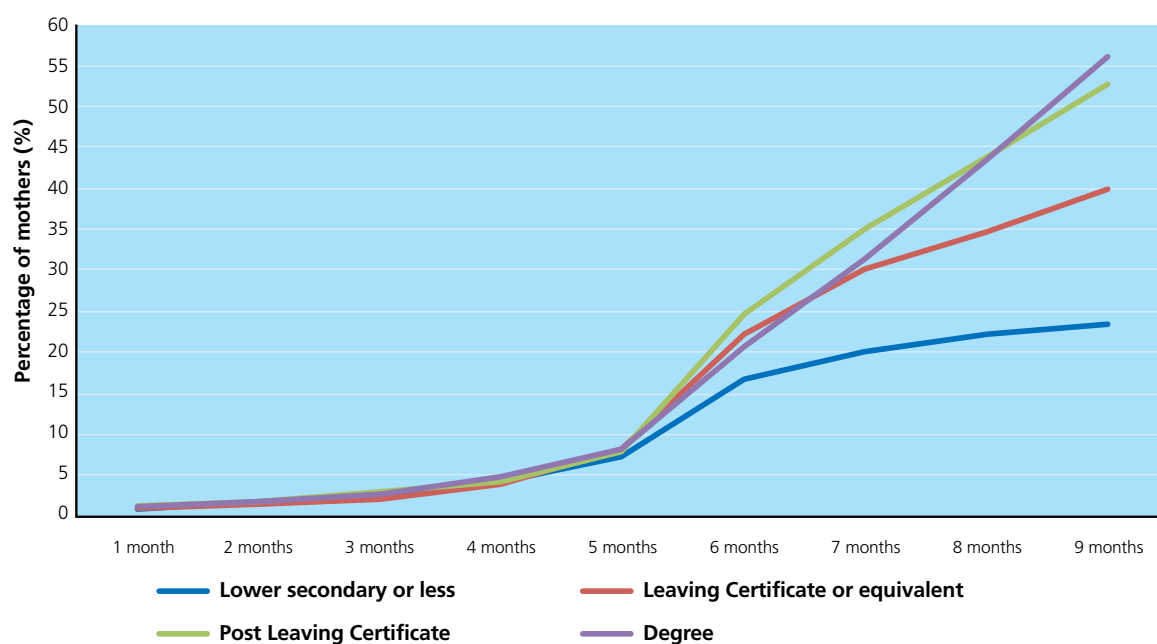
Figure 3.2: Percentage of mothers at work in each month after giving birth, by family type



Note: 78% of mothers were working prior to birth, 22% were not working. Graph includes all mothers except those for whom no date of return to work was available.

Education has been shown to have a strong influence on post-birth return to work, with incentives typically seen as higher for highly educated women to return to work more quickly. However, Figure 3.3 shows interesting patterns. While very few mothers of any education level return to work before six months, at six and seven months it is those with Leaving Certificate/post-Leaving Certificate qualifications who are more likely to be at work, and it is not until nine months that mothers with a degree have the highest employment rates. One of the reasons for this may be that mothers with a degree are more likely to have the financial resources to avail of unpaid leave (see Figure 3.6 on unpaid leave take-up). By nine months the proportion of low-educated mothers in employment is very low. Given their potential earnings, the net costs of childcare for this group would be particularly high.

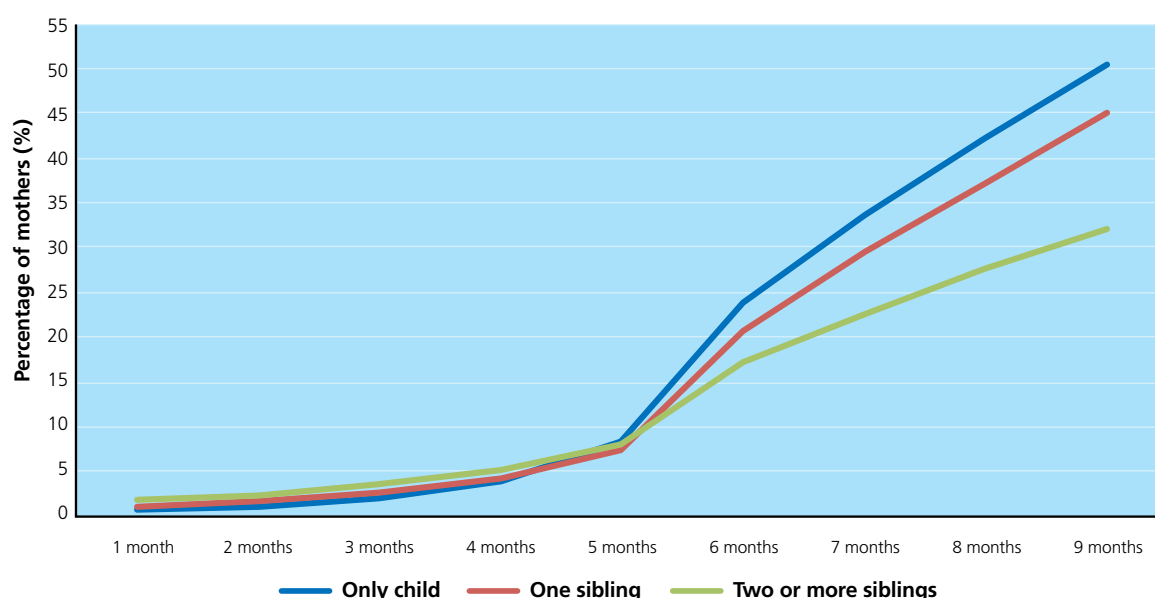
Figure 3.3: Percentage of mothers at work in each month after giving birth, by maternal education



Note: 78% of mothers were working prior to birth, 22% were not working. Graph includes all mothers except those for whom no date of return to work was available.

A final factor is how return to work varies depending on whether the infant is an only child, a second child in the household, or a third or subsequent child. Given high fertility rates in Ireland, a very high proportion of infants, almost one-quarter, are third or subsequent children; one-third are second children and just over 40% a first or only child. Figure 3.4 shows that employment rates of mothers of two or more children are actually slightly higher in the first five months. By nine months a clear pattern emerges whereby mothers of three or more children are much less likely to be working (31%) than mothers with one child (50%). An intermediate 44% of mothers with two children are working at nine months (Figure 3.4).

Figure 3.4: Percentage of mothers at work in each month after giving birth, by family size



Note: 78% of mothers were working prior to birth, 22% were not working. Graph includes all mothers except those for whom no date of return to work was available.

3.4 WHICH PARENTS TAKE LEAVE?

Chapter 2 showed how the duration of maternity leave was extended in the years preceding the survey. This section discusses what proportion of women in *Growing Up in Ireland* took maternity leave, and which women were more likely to take it, as well as parental leave uptake by fathers.

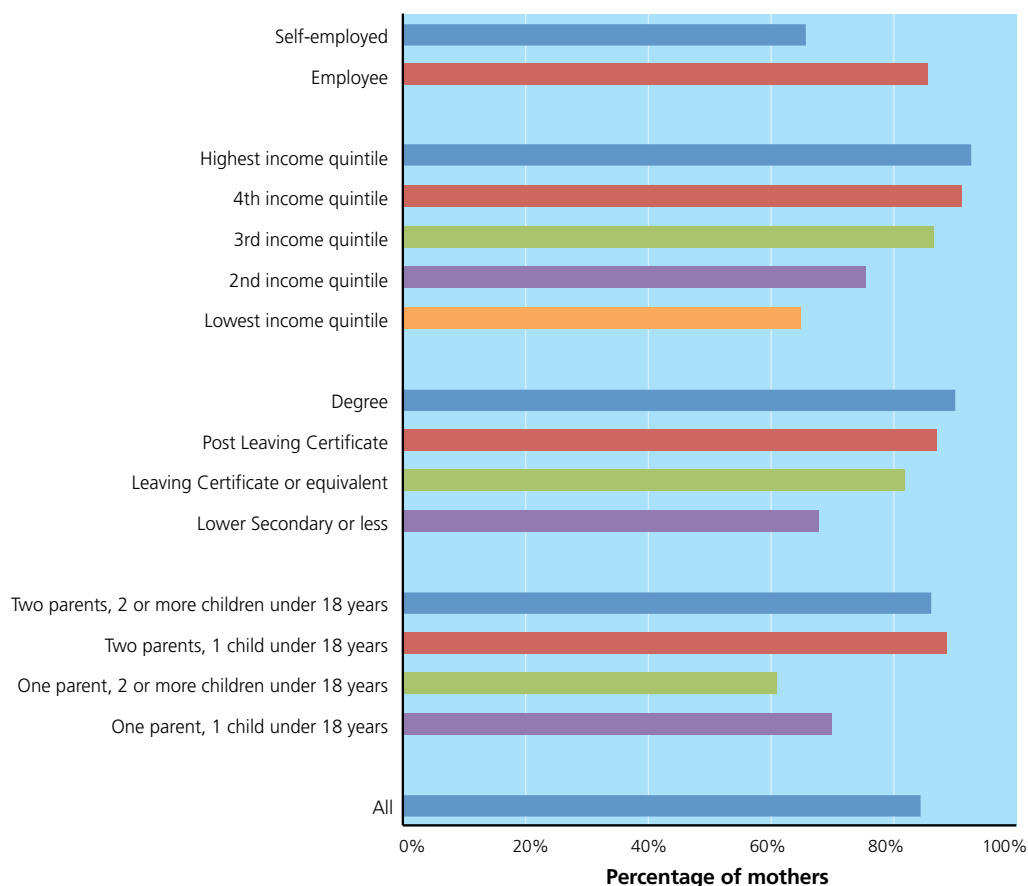
As maternity leave is linked to paid work, the *Growing Up in Ireland* Primary Caregiver questionnaire only asked questions about leave for women who were working prior to the birth of their child, and of those, excluded those who said they were unlikely to return to work. Of those women, 85% had taken paid maternity leave, and almost all of those taking paid maternity leave (90%) took the full paid leave entitlement of 26 weeks.²⁰

Figure 3.5 shows the percentage of mothers who had taken paid maternity leave by different characteristics (household type, education, income quintile, employment status). While, in general, uptake of paid maternity leave was extremely high for mothers who had worked, it was noticeably lower for those in the lowest income quintile, those with lower secondary education and those in single-parent families, particularly those with two or more children.

²⁰ In fact, evidence from Russell et al. (2011) suggests the wording of this question on paid leave may lead to an underestimate of the proportion of mothers who had worked prior to birth who took paid maternity leave, and that the true figure is likely to be over 90%. Russell et al. (2011) found that some mothers said they did not take paid maternity leave, in response to an identical question in the *Growing Up in Ireland* survey, but that they did receive maternity benefit. The adjusted estimates of paid maternity leave include both those who said they took paid maternity leave and those who received maternity benefit. Information on past receipt of maternity benefit is not available in *Growing Up in Ireland*.

Mothers who do not take paid leave tend to be those with insufficient contributions, due to either short service, self-employment, informal employment or leaving employment (either voluntarily or involuntarily) more than 16 weeks before childbirth (see also Section 2.2). Russell et al. (2011) point out that lack of knowledge of maternity benefits and rights may also mean some mothers do not take paid maternity leave.

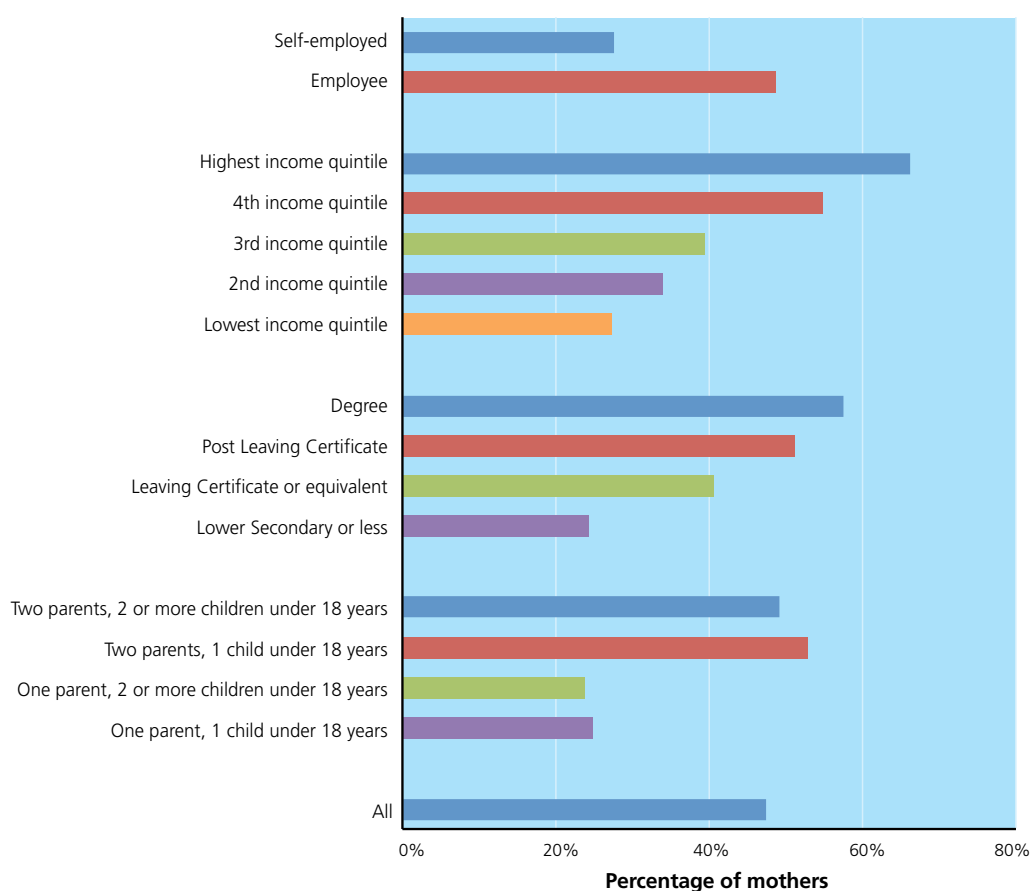
Figure 3.5: Percentage of mothers who had worked prior to birth who took paid maternity leave (excluding those unlikely to return to work), by socio-demographic characteristics



A much lower percentage of mothers took or intended to take any unpaid maternity leave – around 47% in total. Compared to paid leave, the duration of leave varied much more. The mean duration of unpaid leave was around 12 weeks, but varied widely. The maximum unpaid leave for these mothers was 16 weeks, but it is possible that for some women the interview took place before the end of their period of paid and unpaid leave (24+16 weeks).²¹

Figure 3.6 shows that unpaid leave take-up was much more prevalent among ‘advantaged’ mothers – those where family income was in the highest income quintile and those who had a university degree. These mothers were more likely to be able to afford a period without income from work. Unpaid leave uptake was also higher among mothers in couples, particularly where the infant was their first child (‘two parents with 1 child under 18 years’); these mothers were much more likely to have another source of income (i.e. their partner’s), on which they could rely while taking unpaid leave.

Figure 3.6: Proportion of mothers who had worked prior to birth who took unpaid maternity leave (excluding those unlikely to return), by socio-demographic characteristics



There is no paid parental leave for fathers in Ireland, except at the discretion of employers. In *Growing Up in Ireland* fathers were asked about whether they took unpaid parental leave. Their take-up of parental leave was low; around 12% of fathers who responded had taken leave by nine months, and the majority (74%) of those who did take leave took 2 weeks or less. This was mostly taken as a block (i.e. all together) but it should be noted that parental leave can be taken until the child is eight, so fathers may take more leave after nine months. Leave was disproportionately taken by highly educated fathers, by fathers of one child only (i.e. the Study Child) and non-Irish fathers.

3.5 THE TIMING OF RETURN TO WORK

It is clear from Section 3.3 that, for those who do return to work, the timing of return also varies considerably across time, particularly in the period of six to nine months post-birth. It is useful to know whether those not working when the infant was nine months old were working prior to childbirth and had not yet returned to work, or whether they were not working prior to childbirth, to give a comprehensive picture of sole maternal care in the first nine months of an infant's life.²²

A multinomial logistic regression model was estimated in order to compare mothers who return to work at six to seven months (the modal group) with other mothers: those who return before six months (early return); those who return at eight to nine months; those who have not yet returned, and those who were not working prior to birth.²³ This model allows us to estimate the association between the timing of return to work and mothers' characteristics, child factors and neighbourhood characteristics, while holding other characteristics constant. For example, are younger mothers more likely to return in a certain period than older mothers, even if we hold their educational level constant? In each case a subcategory within a group – e.g. third-level degree within education – is used as the reference group, and the model estimates odds of return to work for other subcategories (lower secondary education, Leaving Certificate, post-Leaving Certificate) relative to this reference group. In logistic regression modelling, odds ratios are estimated (see Table 3.1). If the odds ratio for any subgroup is greater than one, this group is more likely to return to work in this period than the reference group. By contrast, if the odds ratio is less than one, the group is less likely to return to work in this period. Subsequent models investigate associations between the timing of return and mother's motivation and previous job (Table 3.3), and between timing and maternity leave (Table 3.4), after controlling for other characteristics.²⁴ The column 'at 6-7 months' is the reference category. Model fit statistics for this and the other logistic models in the report are the model chi square and Nagelkerke R square.²⁵

This modelling framework is similar to that in Russell et al. (2011) in their study of mothers in autumn 2009, except that the observation window in *Growing Up in Ireland* stops at nine months, whereas the sample in Russell et al. (2011) was to two years. Russell et al. (2011) also focus on women working prior to birth, whereas in this model those who were not working were also included, and there were more child-related characteristics such as temperament, health and breastfeeding, as well as information about wider family support.

The first column in Table 3.1 shows those mothers more likely to return to work in the first five months: young mothers (under 20), white non-Irish mothers, single parents and mothers of two or more children. Overall employment of both young mothers and lone mothers was low, but those that do return to work do so quickly, presumably because of financial necessity. This pattern was also found by Russell et al. (2011). No other child or neighbourhood factors are associated with early return to work.

²² A small number of those mothers who were not working prior to birth were working at the time of interview (1.5% of all mothers). Because the focus in the survey is on return to work, there is no information on the age of the infant when these mothers returned, so they are included in the 'Not working prior to birth' category in the model presented in Table 3.2. These mothers share similar characteristics to other mothers who were not working before the birth of their infant. The results of this model do not change if this group are excluded.

²³ An alternative modelling strategy would be to use discrete-time event history modelling. This allows precise estimation of transition rates at any given month. However, it does not permit separately identifying mothers who did not work prior to birth, and it is also more difficult to allow the effect of covariates according to specific time periods than using this model. In addition, a key strength of event history modelling is the ability to use characteristics that vary over time, which are not available here.

²⁴ The models also allow us to determine whether the results are robust or 'statistically significant', i.e. whether we can be confident that the differences would not have been generated by chance, given the sample size in each case.

²⁵ The model chi square shows the improvement in the -2 log likelihood from adding the explanatory factors (age, education, etc) versus the model with none. Higher values indicate a better fit. The Nagelkerke is a pseudo R-squared measure which values from 0-1. It is useful to compare how models of the same outcome and the same number of cases compare in terms of predictive power, a higher R-squared indicating greater predictive power.

Table 3.1: Factors associated with timing of mothers' return to work (multinomial regression)

		Early return	6-7 months	8-9 months	Not yet returned	Not working before birth
Mother's characteristics		Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Education (Ref. Degree)	Lower secondary	1.31	1.00	0.34***	1.77***	5.33***
	Leaving Certificate	0.99	1.00	0.55***	1.22**	2.10***
	Post Leaving Certificate	0.87	1.00	0.70***	0.97	1.14
Age (Ref 35+)	Age under 20	2.64**	1.00	0.31	2.63***	12.43***
	Age 20-24	1.26	1.00	0.38***	0.94	2.28***
	Age 25-29	0.82	1.00	0.52***	0.64***	0.99
	Age 30-34	0.81*	1.00	0.81**	0.76***	0.75***
Ethnicity (Ref. Irish)	White non-Irish	1.43**	1.00	0.74*	1.36***	1.96***
	Black	0.96	1.00	0.41*	0.83	1.73**
	Asian	0.88	1.00	0.31***	0.35***	1.52*
Family status (Ref couple, partner emp)	Single parent	1.47**	1.00	0.50***	1.82***	2.08***
	Partner not employed	1.04	1.00	0.89	0.87	1.39**
Child factors						
Breastfed? (Ref: Not breastfed)	Less than 3 mths	0.97	1.00	1.13	1.00	0.86
	More than 3 mths	1.10	1.00	1.19*	1.42***	1.24*
N of siblings (Ref: none)	One sibling	1.06	1.00	0.97	1.02	3.99***
	Two plus siblings	1.56***	1.00	0.72***	1.17	11.46***
Child temperament	Fussy	0.98	1.00	0.99	1.00	1.02*
	Unadaptable	1.01	1.00	1.01	1.03***	1.02*
	Dull/subdued	0.99	1.00	1.03*	1.01	1.00
	Unpredictable	1.02	1.00	0.99	1.00	0.99
Child health at birth	Poor health	0.95	1.00	1.02	1.13	1.07
Neighbourhood/ extended family						
	Rural	1.12	1.00	1.07	0.94	1.03
	Family nearby	1.12	1.00	1.04	0.86*	0.78***
	Crèche locally	1.30	1.00	1.03	1.08	1.19
	Regular contact with g'parents	0.86	1.00	1.15	0.72**	0.58***
Total	N of cases	860	2374	1692	3504	2442

Note: Includes all mothers in the sample, except those missing on any covariates.
 N of cases 10,872. * p<.05, **p<.01, ***p<.001. Model chi square 3,331 (d.f. 100). Nagelkerke R-squared is 0.28 for this model.

Turning now to mothers who returned at eight-nine months, after the period of paid maternity leave had expired, the '8-9 months' column of Table 3.1 shows that higher-educated and older mothers (35+) were more likely to return in this period than younger and lower-educated mothers. Irish women were also more likely to return at eight-nine months than the other national/ethnic minorities. Mothers in couples were more likely to return than single parents. In terms of child factors, mothers who breastfed for three months or more were more likely to return at eight-nine months than mothers who did not breastfeed. Mothers with infants whose temperament was described as more subdued (dull) were more likely to return in this period too.

Mothers who had not yet returned to work when the infant was nine months' old tended to have lower educational qualifications (lower secondary or Leaving Certificate) and were either young (under 20) or older (over 35). Asian mothers were more likely to have returned to work by nine months than Irish mothers, while white non-Irish mothers were less likely to have done so. Single parents were less likely to have returned to work than mothers in couples. Considering child factors, mothers who breastfed for more than three months were less likely to have returned to work, suggesting that, overall, breastfeeding was associated with later return to work. Mothers of infants described as more 'unadaptable' were less likely to have returned to work; this may reflect a reluctance to leave unadaptable infants with another carer.²⁶ Mothers with family living nearby and those with regular grandparental contact were more likely to have returned to work. This could reflect the availability of family to engage in regular childcare, or to provide more general support – for example, when an infant is sick or at weekends. Proximity to family was certainly associated with return to work before nine months of age.

The final column illustrates which mothers were less likely to be working before birth. A number of associations stand out. For example, mothers with lower secondary education, young mothers (under 20), single parents, mothers who already had one or in particular two or more children were much less likely to have been working prior to the birth of the Study Child. A weaker association is that mothers who had family support (family living nearby or regular contact with grandparents) were more likely to have been working prior to childbirth.

3.6 RETURN TO WORK: MOTIVATION AND PREVIOUS JOB

Baxter (2008) notes that women's reasons for return to work after childbearing are complex, and may include a mix of financial and other reasons related to preferences and constraints. In the *Growing Up in Ireland* Primary Caregiver questionnaire, mothers who had either returned to work or had not yet returned but stated that they intended to were asked: 'What was (is) your main reason for going back to work?'. Responses to this question were combined in Table 3.2, in three categories: financial (including financial and job-related benefits like pension, car, etc); career (including 'maintain a career' and 'nobody else could do the job') and 'other' (mainly 'need an outlet outside the home' and similar responses, including multiple reasons). As motivations may vary by educational qualifications, Table 3.2 distinguishes reasons for return to work by educational level.

Table 3.2 shows that almost two-thirds of mothers cited financial reasons for return to work. A total of 65% of mothers cited this reason, though the proportion was somewhat lower for mothers with a university degree (61%). Just under 20% of mothers cited career reasons. This proportion varied substantially by education; only 10-11% of those with Leaving Certificate or less stated this reason, compared to 27% of mothers with a university degree. Conversely, returning to work for other reasons, such as needing an outlet outside the home, was more common among those with lower educational qualifications, accounting for almost one-quarter of mothers with lower secondary education or less. This is consistent with findings reported in Pungello and Kurtz Costes (1999) that giving higher importance to financial need was associated with fewer years of both maternal education and lower family income before the birth. Higher ratings of importance for career development were related to higher maternal and paternal income and higher prenatal family income.

²⁶ Note that temperament was measured at nine months. It is possible that if mothers returned to work before nine months, their evaluation of their infant's temperament might have changed since then.

Table 3.2: Main reason for return to work (for those who had returned to work or had intended to), by mother's education

	Financial	Career	Other reasons	Total
Lower secondary or less	67%	9%	24%	100%
Leaving Certificate or equivalent	69%	11%	20%	100%
Post Leaving Certificate	66%	17%	18%	100%
Degree	61%	27%	13%	100%
All	65%	18%	17%	100%

Notes: Unweighted N of cases 7,317.

In the model presented in Table 3.3, the reasons for return to work were included in the model presented above, along with the mother's occupation in her previous job (managerial/professional, technical/clerical or 'other' occupations, the reference category in the model) and whether the mother was an employee or self-employed.²⁷

Table 3.3: Timing of return to work: reasons for return and previous occupational class

	Up to 5 months	6-7 months	8-9 months	Not yet returned, but intended to
Model includes all factors in Table 3.1 plus:				
Reason for return to work				
Ref. Other Reason				
Career	1.59***	1.00	0.96	0.46 ***
Financial	1.13	1.00	0.84	0.37 ***
Previous occupation				
Ref. Other occupations				
Managerial/professional	0.86	1.00	1.51 ***	0.98
Technical/clerical	0.81	1.00	1.36 ***	1.11
Self-employed	8.70 ***	1.00	0.22 ***	0.33 ***
N of cases	852	2369	1691	2383

Note: Model also includes all women working before birth who stated an intention to return to work, if they had not yet done so.

Total number of cases 7,295. * p<.05, **p<.01, ***p<.001. Model chi square 1,704 (d.f. 90). Nagelkerke R-squared is 0.11 for this reduced sample without reasons for return or occupation/self-employment. Nagelkerke R-squared is 0.14 if reasons for return are included, and 0.22 with job characteristics.

The model fit statistics (e.g. Nagelkerke R²) suggest that adding reasons to return to work and particularly occupation/self-employment status improves our predictions of return to work, compared to a model without these factors.

Compared to those returning for other reasons, career-motivated mothers were more likely to return before six months. Also, those returning to work for either career or financial reasons were more likely than others to have returned by nine months (Table 3.3). Compared to other occupations, like sales and craft workers, women in managerial/professional organisations and technical clerical were no more likely to have returned early to work. Managerial/professional and technical/clerical were more likely than others to return to work at eight-nine months.

²⁷ In classifying the previous job, the International Standard Classification of Occupations (ISCO) coding into eight groups was used. 'Other occupations' comprise service and sales workers; craft and related workers; plant machine operators and assemblers, and elementary occupations and others.

Compared to employees, self-employed mothers were much more likely to return to work before six months – over eight times more likely. As seen in Figure 3.5, they were less likely to take paid maternity leave. Yet even when a model that accounts for this was estimated, self-employed women were much more likely to return to work early. This may be related to the nature of the employment: even if a woman has access to maternity benefit, she may fear loss of business if absent for a longer period and it may be difficult for someone else to do her work. In addition, self-employed women may also be more flexible in their hours and place of work, and can possibly have the infant accompany them, especially if they work from home. Further analysis would be required to examine their hours of work and whether they regularly work from home.

3.7 TIMING OF RETURN TO WORK AND MATERNITY LEAVE

A key policy instrument in this area is maternity leave. Section 3.3 discussed which mothers took paid and unpaid leave, and how this varied by their characteristics, based on questions asked of mothers who had worked prior to childbirth and had already returned to work or intended to do so. The following model builds on the previous models to examine when mothers who take leave are most likely to return, controlling for other factors (Table 3.4). The model distinguishes mothers who (1) just took paid leave; (2) just took unpaid leave; (3) took paid and unpaid leave, and (4) did not take any leave. Not surprisingly, the model fit statistics suggest that adding information about what leave mothers took allows us to predict much more accurately their date of return for this group of mothers (e.g. Nagelkerke R-squared now 0.42, compared to 0.22 in Table 3.3).

Table 3.4: Timing of return and maternity leave

	Up to 5 months	6-7 months	8-9 months	Not yet returned, but intended to
Model includes all factors in Tables 3.1 and 3.3 plus:				
Just paid leave	0.27***	1.00	0.33***	0.05***
Just unpaid leave	0.45***	1.00	0.59*	0.11***
Both paid and unpaid	0.08***	1.00	2.46***	0.30***
N of cases	852	2369	1691	2383

Note: Model also includes all women working before birth who stated an intention to return to work, if they had not yet done so. Total number of cases 7,295. * p<.05, **p<.01, ***p<.001. Model chi square 3,567 (d.f. 99). Nagelkerke R-squared for this model is 0.42.

Table 3.4 shows that women who took any leave – either paid or unpaid – were much less likely to return to work before six months. This is consistent with the fact that almost all women who took paid leave took the full entitlement of 26 weeks.

Women who took just paid or just unpaid leave were also less likely to return after six-seven months: these women were much more likely to return at this time, after the period of leave had expired. Those who took both paid and unpaid leave were more likely to return at eight-nine months. Finally, the model results presented in Table 3.4 show that mothers who took any leave were very much less likely to have not yet returned to work at nine months.

In summary, any form of maternity leave was associated with return to work at or after six months, and taking any kind of leave is strongly associated with return to work before nine months.

3.8 DISCUSSION

The key research question in this chapter was the timing of return to work, and how this was related to the characteristics of the mother, the child, the wider family support network, reasons for return to work and maternity leave. Very few mothers were in paid employment in the first five months after childbirth in this sample – 8% at five months. Four months later, by nine months after birth, around 44% of all mothers were in employment.

Mothers' characteristics played a major role in understanding their patterns of paid work after childbirth. The small proportion of 'early returners', defined here as returning to work earlier than six months, were more likely to be young mothers and lone mothers, and also white non-Irish mothers. Those who returned in the eight-nine month period were more likely to be highly educated, older, Irish and mothers living in a couple. Those who had not yet returned tended to be low-educated mothers, either very young or older mothers, and lone mothers. Highly-educated mothers were more likely to return to work than low-educated mothers in the period, but this effect was only evident after the end of paid maternity leave.

Child factors in general played a weaker role in when and if a mother had returned to work by the time the infant was nine months old. Two notable exceptions were the number of siblings an infant had and whether s/he was breastfed. Compared to those who did not breastfeed, mothers who breastfed for three months or more were more likely to have returned to work later – at either eight-nine months, or even later (that is they had not returned by nine months). Mothers of three or more children were much more likely to have been out of the labour market prior to childbirth and their employment rates at nine months were lower than those with one or two children. Temperament and child health seemed to play a minor role in return to work. In terms of neighbourhood characteristics, having family close by and being in regular contact with grandparents (in Ireland) was associated with return to work before nine months. Whether this is because of more general childrearing support provided by the parents' wider family or because relatives were regularly caring for children is explored in more detail in Chapter 5.

A majority of mothers of all levels of education cited financial reasons as the primary motive for returning to work. Compared to those returning for other reasons, career-motivated mothers were more likely to return to work early (before six months). Also, those returning to work for either career or financial reasons were more likely than others to have returned by nine months.

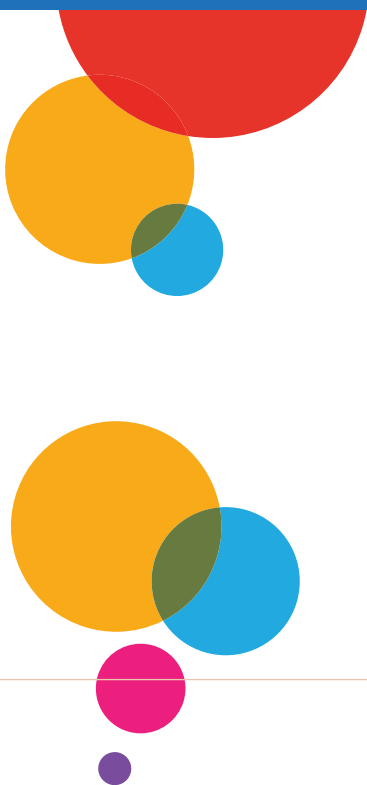
A very high proportion of mothers who worked prior to birth took paid maternity leave, and they did so for six months. The models show that mothers who took paid leave were much less likely to return to work before six months than those who did not. Unpaid leave is also associated with the timing of return to work, though take-up of unpaid leave is much lower and unpaid leave is more likely to be taken by (relatively) privileged mothers.

Without a comparison of return to work before and after changes to paid maternity leave, firm conclusions are not possible, but this evidence, combined with international findings, suggests that paid maternity leave is a powerful instrument in influencing behaviour of mothers in the immediate period after childbirth. There are many interesting questions remaining about return to work, even in this short period. Given research on the impact on children of high hours of childcare, it would be interesting to investigate which mothers engage in full-time and part-time work at nine months. Given policy debates about the labour market participation of lone mothers in Ireland, further modelling could also investigate which lone mothers return to work before the infant is six months old and how age and educational qualifications affect the decision.



Chapter 4

USE AND HOURS OF CHILDCARE



4.1 INTRODUCTION

Which Irish infants are in non-parental childcare and for how long each week? As illustrated in the conceptual framework shown in Figure 1.1 (Chapter 1), factors influencing the type and quantity of non-parental childcare could include child characteristics, the maternal/family context, and the neighbourhood/local environment. According to previous research, use of non-parental childcare is closely related to mothers' employment patterns; therefore, estimating models with and without mothers' employment are used to investigate which infants are in childcare, and the importance of mother's employment in understanding the patterns relative to other factors. The impact of a rural compared to an urban location and the condition of the neighbourhood (in terms of litter, public disorder, etc) are also considered.

Use of childcare has been found to be related to birth order. For example, Sylva et al. (2007), found that first-borns were more likely to be in care at 10 months old than second or subsequent children. Similarly, in the US, children in smaller families were more likely to enter childcare between three and five months (NICHD ECCRN, 1997). This was presumably linked to the employment of mothers in the first year, which tends to fall as the number of children rises (as found in Chapter 3). Findings on infant gender and temperament were less clear. Many studies find no effect of gender (e.g. girls were no more likely to be in childcare than boys). On temperament, Sylva et al. (2007) found that infants rated by their mothers as more 'fussy' spent more hours in childcare.

Regarding the characteristics of the primary caregiver, studies often find no impact of maternal age (NICHD ECCRN, 1997; Sylva et al., 2007), although it might be expected that this would be associated with other variables such as educational level and the timing of a pregnancy in relation to career trajectories. In terms of ethnicity, the findings were inconsistent, and depend on study samples and national contexts. However, variation in cultural attitudes towards non-parental care may reasonably be expected and again could also influence the availability of childcare by relatives for non-national families (Sylva et al., 2007).

Other characteristics such as mothers' education may influence attitudes towards types of non-parental care; mothers who believe employment brings benefits to children were more likely to use non-parental childcare (Greenberger et al., 1988; Sylva et al., 2007). However, education may act more directly as a mediator of the likelihood of the mother returning to work (see Chapter 3), and the family's ability to afford non-parental care. The presence of a spouse or partner in the home would normally be expected to reduce the need for non-parental care, but being a lone parent may make it less feasible to afford the levels of childcare necessary to work outside the home. While some US research found that single-parent families use childcare earlier, in the UK Sylva et al. (2007) found no impact of single motherhood on care choices, after controlling for family income.

Economic circumstances are often the driving force behind use of childcare, particularly in countries where childcare is expensive and costs are a factor. A UK study found that, at three months old, low-income children were more likely to be in childcare, while at 10 months advantaged families used more childcare (maternity benefit at the time of the survey in the UK covered four months) (Sylva et al., 2007). Family income is also likely to correlate with mother's characteristics, such as education, and work status if she has a well-paid job to which she is highly motivated to return.

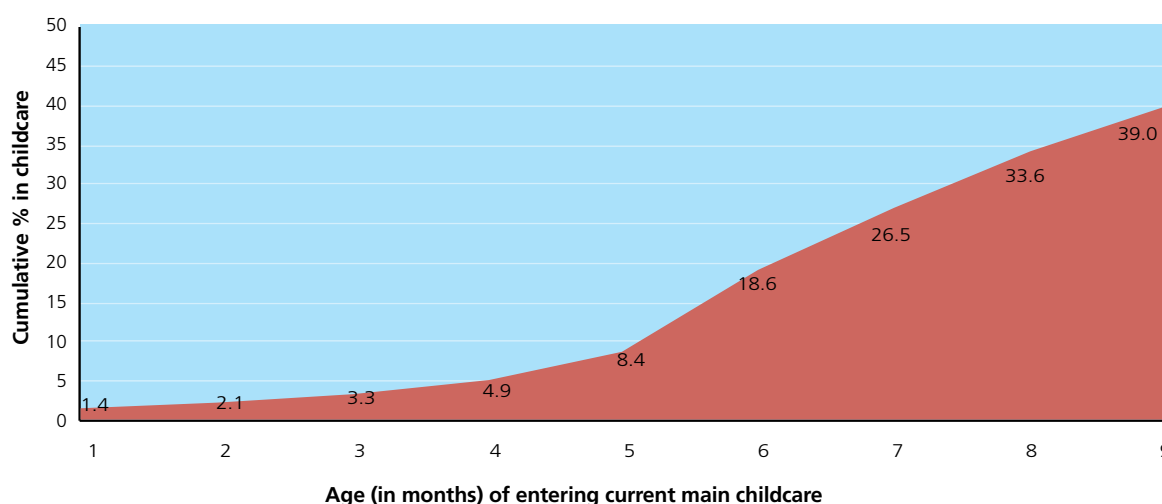
Studies typically focused less on the environmental context such as neighbourhood conditions and location. Factors likely to be linked to childcare choices outside the immediate family were whether the infant had extended family living locally, if there was regular contact with grandparents living within the State, and whether there was centre-based childcare available in the local area.

4.2 USE OF NON-PARENTAL CHILDCARE

In the *Growing Up in Ireland* study, just under two-in-five infants (39%) were in regular non-parental childcare at nine months of age. Most infants with regular care were using only one type of non-parental care. Of those infants in regular care, 87.2% had one non-parental carer and 12.8% had two carers, but having more than two carers was extremely rare. For the 12.8% of infants with two carers, the most frequent combination was a relative and a non-relative (one-third of this subgroup).

Figure 4.1 shows how the number of infants in childcare is low for very young infants but increases markedly at about the time when paid maternity leave ends, from 8.4% at five months to 18.6% at six months, with a steady increase over the unpaid leave period up to 39% when the infant is nine months old. The mean age for starting the current main childcare arrangement was 6.5 months (SD = 1.9).

Figure 4.1: Cumulative percentage of infants in regular non-parental childcare (for those infants still in that arrangement at the time of interview)



Note: For infants who switched care arrangement, this date will not be the same as the age they first started non-parental childcare, though we expect this to be a small minority of infants. There may also be infants who were in childcare for a short period and were now in full-time parental care. These will not be recorded in this graph.

To examine the factors influencing the decision to use non-parental childcare, both inclusive and exclusive of maternal work status, two logistic regression models were estimated with the dependent variable being whether the infant was in any regular non-parental care (Table 4.1). Following the conceptual framework discussed in Chapter 1, parents' decision on use of childcare was analysed using four broad sets of explanatory factors: child (gender, temperament, siblings, breastfeeding), mother (partner, age, education, ethnicity), income-related factors, and community factors (family availability, grandparent contact, region, crèche availability, neighbourhood disadvantage).

In the second model, the mother's working status (at home/works part-time/works full-time) was added. It was reserved as the last addition as it had been anticipated as the single biggest predictor in determining use of childcare, but would also correlate strongly with other factors such as mother's education and family income.

A majority of families where the mother worked full-time used regular non-parental childcare (81.1%), and there was a similar trend for those working part-time (70.3%). Just 8.5% of households where the mother did not work outside the home (at the time of the interview) used regular childcare; and a quarter of these were full-time students or parents on State training schemes. If these groups were excluded, the percentage of children in childcare dropped to 6.6% of households where the mother did not work outside the home.

Child factors

One of the most salient child characteristics is number of siblings. Only-children are more likely to be placed in non-parental care than those with either one sibling (OR=0.88) or multiple siblings (OR=0.74), although the statistical significance for just one extra sibling is reduced to marginal after adjustment for income and work status. There are a number of possible explanations for this trend. Childcare for multiple children may become too expensive relative to wages; stay-at-home mothers may choose to have bigger families and/or having three or more children may be more difficult to combine with paid employment in terms of time and energy, leading to the mother's decision not to work.

Another salient child factor is whether the infant was breastfed. Even after controlling for mother's characteristics and work status, infants who were breastfed for three months or more were less likely to be in non-parental childcare at nine months than those who were never breastfed (Odds Ratio=0.75). Breastfeeding was also associated with later return to work after childbirth (see Chapter 3). The precise mechanism by which this operates was not clear, but it could be that breastfeeding is difficult to combine with paid work, and/or that longer breastfeeding is associated with particular attitudes regarding maternal work or parenting values not measured in the survey.

The other child variables included in the model were four dimensions of temperament and the child's gender. Overall these factors had no or moderate associations with use of non-parental care, although there were some changes after the inclusion of work status when girls became less likely to be in non-parental care than boys (odds ratio decreased from 0.92 in Model 4 to just 0.86). The models suggest that infants rated by mothers as less adaptable have a slightly lower likelihood of being in non-parental care (and mothers of these infants are less likely to be at work at nine months; see Chapter 3), and that infants rated as more 'fussy' are marginally more likely to be in non-parental care, though the effects are small.

Maternal and neighbourhood factors

In Table 4.1, the relationships between use of non-parental care and the mother's characteristics (such as education, ethnicity and age) were to a large extent mediated by family income and work status. Thus, for example, much of the difference in non-parental childcare use between highly educated mothers and low-educated mothers was explained by the fact that highly educated mothers were much more likely to be in paid employment at nine months (see Chapter 3).

However, even after controlling for work status, infants of mothers with the lowest levels of education were still less likely to be in non-parental care than infants whose primary caregivers had degree-level education. Comparing non-parental childcare among infants of mothers aged under 25 with those in the 30-35 age group, the model indicated that once other factors, particularly work status, were taken into account, younger mothers who worked were actually more likely to use non-parental care for their infants (OR=1.31). However, as a group they were less likely to work full-time and had a lower usage of childcare overall (see also Chapter 3).

Considering family status, in the bivariate relationship the use of non-parental care was higher among partnered mothers (the completely unadjusted odds ratio for the 'partner' variable – not shown in Table 4.1 – is 1.16). Yet, as seen in Table 4.1, once the model controlled for the low employment rate among single parents at nine months (see Chapter 3) and their lower average income and education, partnered women were actually much less likely to use non-parental childcare for their infants than lone parents (odds ratio is 0.34 in model 2).

Table 4.1: Results of logistic regression model on factors associated with the Study Infant being in regular non-parental childcare), with and without mother's work status

Characteristic		Model 1 without work status	Model 2 incl. work status
Child's gender	<i>Reference: Boy</i>	1.00	1.00
	Girl	0.92	0.86*
Child's temperament (scales)	Fussy-Difficult	1.00	1.02*
	Unadaptable	0.98**	0.99
	Unpredictable	1.00	1.00
	Dull	1.00	1.01
Number of siblings under 14	<i>Reference: None (only child)</i>	1.00	1.00
	One sibling	0.87**	0.88
	Two or more siblings	0.62***	0.74**
Breastfeeding	<i>Reference: Never breastfed</i>	1.00	1.00
	Breastfed for 3mths or less	1.12*	1.04
	Breastfed for more than 3mths	0.72***	0.75***
Family structure	<i>Reference: Lone parent</i>	1.00	1.00
	Living with spouse/partner	0.44***	0.34***
Maternal age	Under 25 years	0.93	1.31*
	25-29 years	1.29***	1.29**
	<i>Reference: 30-34 years</i>	1.00	1.00
	35 years plus	0.88*	1.01
Maternal education	Lower secondary or less	0.53***	0.77 *
	Leaving Certificate or equivalent	0.67***	0.74 ***
	Post Leaving Certificate	0.85*	0.83 *
	<i>Reference: Degree level</i>	1.00	1.00
Maternal ethnicity	<i>Irish</i>	1.00	1.00
	White non-Irish	0.63***	0.64 ***
	Other ethnic groups	0.92	0.58**
Family income	Lowest quintile	0.15***	0.27***
	2nd quintile	0.24***	0.27***
	3rd quintile	0.49***	0.49***
	4th quintile	0.92	0.81*
	<i>Reference: Highest quintile</i>	1.00	1.00
Family living locally	<i>Reference: No</i>	1.00	1.00
	Yes	1.35***	1.21**
Regular contact with grandparents	<i>Reference: No</i>	1.00	1.00
	Yes	1.60***	1.81***
Region	<i>Reference: Urban</i>	1.00	1.00
	Rural	1.27***	1.29***
Local centre-based care	<i>Reference: Not available</i>	1.00	1.00
	Available	0.83*	0.86
Condition of neighbourhood	<i>Reference: Less disadvantaged neighbourhoods</i>	1.00	1.00
	In highest quartile of disadvantage	0.94	1.00
Working hours	<i>Reference: None</i>		1.00
	Part-time (29 hours or fewer)		26.47***
	Full-time (more than 30 hrs)		41.26***
Model chi square		1775	6054
Nagelkerke R ²		0.22	0.61

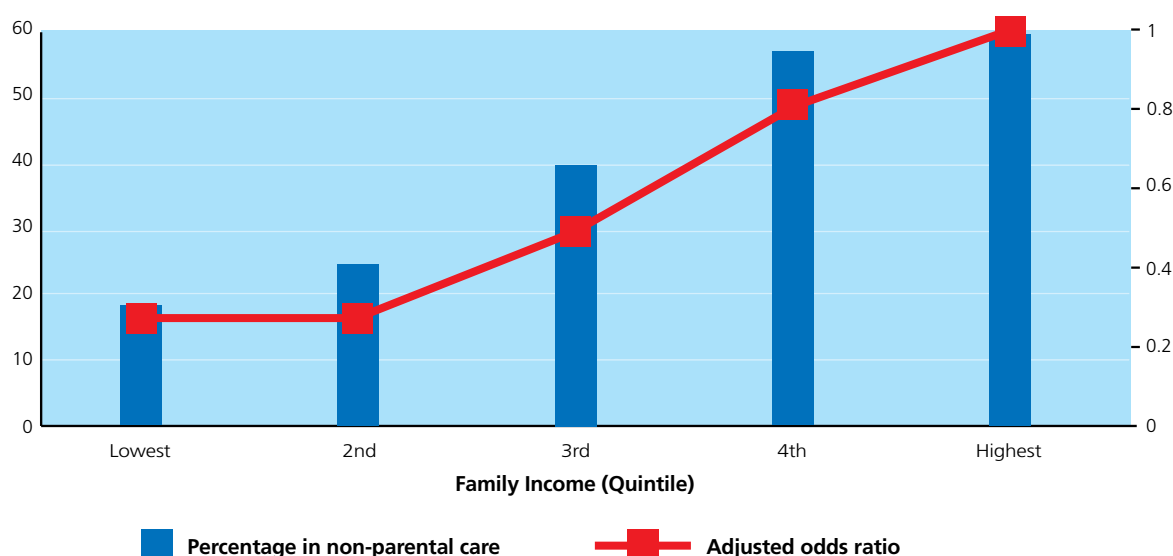
Note: Total number of cases 10,087. * p<.05, **p<.01, ***p<.001.

Table 4.1 clearly shows that the use of non-parental care was more probable when a family member who could undertake childcare was available. Both the variable reflecting the presence of family members in the local area and that referring to regular contact with a grandparent living in Ireland were associated with an increased likelihood of using non-parental care (ORs = 1.21 and 1.81 respectively).

Income and work status

As has been noted in the preceding paragraphs, income and work status clearly affected the relationship between other child and family/caregiver variables and the use of non-parental care. Apart from those interactions, whether or not the mother works outside the home was clearly the biggest single factor in predicting if an infant will be in regular non-parental care (Nagelkerke R^2 increases from 0.22 to 0.61). The odds of using non-parental care if working part-time were around 27 times that of not working, and over 40 times if working full-time. While obviously mothers who returned to work after maternity leave were more likely to need non-parental care of some form, it could also be that being able to organise suitable childcare made a return to work more feasible.

Figure 4.2: Percentage of infants in each family income quintile for whom regular non-parental childcare was used, and fully adjusted odds ratio from the logistic regression model



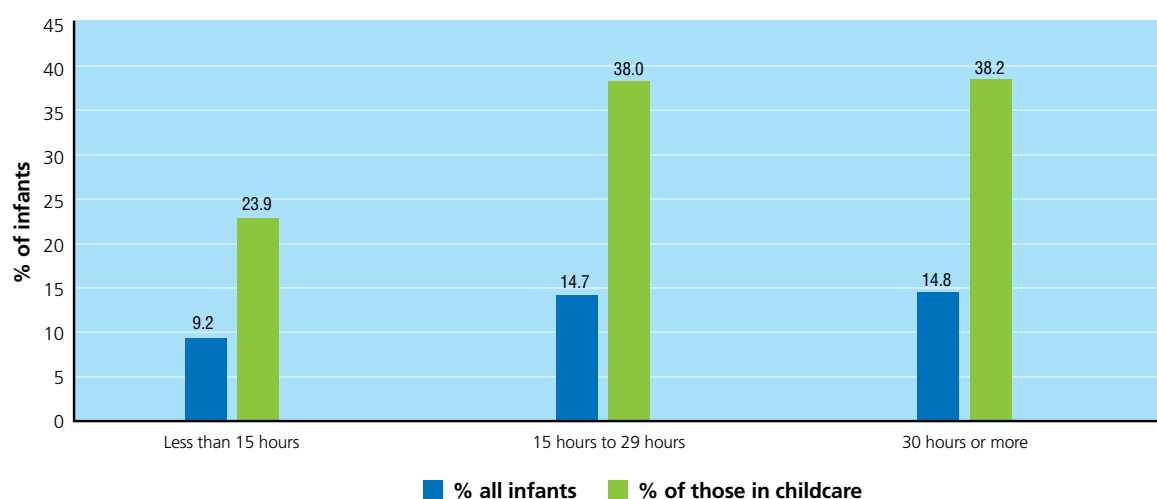
Finally, despite the major role of work status, family income had a significant effect that was not fully accounted for by work status or other characteristics such as family structure and education. Infants of families in the lower three income groups were less likely than those in the wealthiest families to be in non-parental care in all phases of the model. In addition, adjustment for work status widened the gap between the fourth and fifth income quintiles to statistical significance (from OR=0.92 to OR=0.81). Figure 4.2 illustrates both the raw percentages for use of non-parental childcare within each income quintile and the fully adjusted odds ratios from the model. This shows how adjusting for the other child, mother, community and work-status factors reduces the difference between some groups (e.g. lowest and second quintiles) but emphasises the difference between others (e.g. fourth and highest quintiles).

4.3 WHICH CHILDREN SPENT MORE HOURS IN CARE?

The amount of time an infant spends in non-parental care has previously been suggested as an important childcare factor affecting child outcomes (NICHD ECCRN, 2003c). For example, evidence from the National Institute of Child Health and Human Development Study suggested that the more time children in the US spent in any childcare arrangement across the first 4.5 years of life, the more externalising problems and conflict with adults they displayed at 54 months, even after controlling for a range of factors (NICHD ECCRN, 2003c). Similarly in Australia, Harrison (2008) found that carers reported more behaviour problems as children attended more hours of childcare, though the effects were modest.²⁸

The question, then, is: how long do infants spend in non-parental childcare, and which children are in childcare for longer hours?

Figure 4.3: Percentage of all infants and percentage of infants in regular non-parental childcare, by hours of childcare per week



Mothers were asked about any hours the infant spent in regular non-parental care (i.e. there was no lower threshold). The mean number of hours for an infant to spend in their main type of non-parental care (where such care was used) was 24.8 hours per week (SD=12.8), with 38% of infants in regular care spending at least 30 hours per week there (Figure 4.3).

To investigate factors associated with variations in the quantity of childcare, a linear regression was used to investigate the association between the number of weekly hours the infant spent with the main non-parental care provider and the same set of factors relating to the child, mother, income, and community level factors as used in Table 4.1. However, since (as previously mentioned) the work status of the mother is closely related to use of childcare, models were estimated with and without mother's employment status so the associations both before and after its inclusion could be considered (Table 4.2). The adjusted R-squared value for the second model was 0.29 (29%), and prior to the inclusion of work status it was 0.13 (13%). Note that these models were limited to children in regular childcare.

²⁸ Note that carers also reported higher social competence among children with higher hours of childcare.

Table 4.2: Results of linear regression explaining factors associated with hours per week in non-parental childcare

		Model 1	Model 2
Type of care	<i>Reference: Relative</i>		
	Non-relative	1.45**	1.65***
	Centre	5.30***	5.36***
Child's gender	<i>Reference: Boy</i>		
	Girl	-0.09	-0.13
Temperament (scales)	Fussy-Difficult	-0.10*	-0.05
	Unadaptable	-0.11	-0.07
	Unpredictable	0.15	0.07
	Dull	-0.11	-0.05
Number of siblings under 14	<i>Reference: None (only child)</i>		
	One sibling	-1.33**	-0.69
	Two or more siblings	-3.36***	-1.49**
Breastfeeding	<i>Reference: Never breastfed</i>		
	Breastfed up to 3 months	-0.43	-0.75
	Breastfed for 3 months or more	-1.69**	-1.70***
Family structure	<i>Reference: Lone parent</i>		
	Living with spouse/partner	-0.80	-1.92**
Maternal age	Under 25 years	-0.36	0.82
	25-29 years	-1.49**	-1.24*
	<i>Reference: 30-34 years</i>		
	35 years plus	-0.31	0.24
Maternal education	Lower secondary or less	-2.21**	-1.24
	Leaving Certificate or equivalent	-1.66**	-1.27**
	Post Leaving Certificate	-2.39***	-2.09***
	<i>Reference: Degree level or above</i>		
Maternal ethnicity	<i>Reference: Irish</i>		
	White non-Irish	0.04	-0.14
	Other ethnic groups	5.39***	3.12*
Family income	Lowest quintile	-7.87***	-4.00***
	2nd quintile	-7.50***	-4.30***
	3rd quintile	-4.91***	-3.23***
	4th quintile	-2.33***	-1.75***
	<i>Reference: Highest quintile</i>		
Family living locally?	<i>Reference: No</i>		
	Yes	-0.13	-0.40
Regular contact with grandparents?	<i>Reference: No</i>		
	Yes	1.92	1.78
Region	<i>Reference: Urban</i>		
	Rural	-0.27	-0.04
Local centre-based care	<i>Reference: Not available</i>		
	Available	-0.58	-0.14
Condition of neighbourhood	<i>Reference: Less disadvantaged neighbourhoods</i>		
	In highest quartile of disadvantage	-1.21*	-0.72
Working hours	<i>Reference: None</i>		
	Part-time (29 hours or fewer)		2.35***
	Full-time (more than 30 hours)		12.47***
R ²		0.13	0.29

Notes: n = 3,989; * p<.05, **p< .01, ***p<.001.

Child factors

Even after controlling for a range of factors expected to be associated with time spent in childcare in these models, infants who were looked after in centres, as their main form of non-parental care, spent over five hours longer per week in that care than did infants in relative care. Infants in mainly non-relative care spent around 1.5 hours longer on average in care than relative care.

Previous analyses have shown that mothers with one or particularly two other children are less likely to be at work at nine months (see Figure 3.4) and to use childcare (Table 4.1). In this model, which is confined to just those infants in some form of regular non-parental care, having two siblings was associated with 1.5 hours less in the main form of childcare than having no siblings. This may be because mothers with three children may work fewer hours.

Breastfeeding status also showed statistically significant trends in the second, fully adjusted model; infants who had been breastfed for more than three months spent around 1.7 hours fewer in care per week than those who had never been breastfed. The difference between infants who had been breastfed for less than three months and those who had never been breastfed was not significant. There were no significant relationships between hours in care and any of the temperament dimensions in the second model, nor were there any differences in regard to the child's gender.

Maternal and neighbourhood factors

In these models, mothers with the highest level of education used the longest hours of childcare, although adjustment for work status diminished the difference between them and the lowest-educated to marginal significance (1.2 hours fewer, $p=.074$), whereas prior to that the difference had been over 2 hours. Mothers from other ethnic minorities – albeit less likely overall to have non-parental care available – consistently used more hours of non-parental childcare than their Irish peers when they did avail of it – over three hours longer in the final model. There were no differences between Irish and white non-Irish mothers. Considering mother's age, the only group to have significantly different hours to the 30-35 year reference group were those aged 25-29 years, with 1.2 hours fewer per week in the final model. In terms of family structure, once income, education and work status were controlled, infants whose parents were married or cohabiting spent an estimated two hours less in non-parental childcare per week than infants living with a single parent. Lone parents were much less likely to be working at nine months (see Chapter 3), but when they did so they may have needed to work longer hours, as sole earners. In the second model, none of the neighbourhood factors was significantly associated with duration of weekly childcare hours.

Income and work status

By far the strongest associations with hours spent in non-parental childcare were maternal work status and income, in these models. Not surprisingly, infants whose mothers worked full-time outside the home spent more time in non-parental care per week (nearly 12.5 hours longer) than those whose mothers did not work outside the home. Working part-time outside the home was also associated with longer time in non-parental care – approaching 2.5 hours longer. This highlights the key role of mother's working hours in understanding an infant's hours in childcare.

In all models in this chapter, the coefficients for family income highlighted the differences between the wealthiest families and all the others. Even after adjustment for work status, infants from families in the lowest income quintile were spending nearly four hours fewer in non-parental care than those in the highest quintile; before this adjustment the difference was almost eight hours fewer – effectively a whole day's difference.

4.4 DISCUSSION

The decision on whether or not to use non-parental childcare, and on who will provide it, are important decisions for parents and their infants. Previous research and the analyses presented in this chapter indicate the complex nature of this decision and how many factors both within and external to the family may influence the choices made. As expected, a strong factor associated with the use of non-parental care, and the hours used per week, was the work status of the mother, with those who work full-time more likely to need non-parental care and to use it for more hours per week. Family income, which largely determines the affordability of childcare for parents, was another very significant factor in predicting use and hours of care. The association is related to, but not fully explained by, the work status of the mother. The salience of income is not surprising, given the very high costs of paid childcare in Ireland (described earlier in this report). Lower-income households are much less likely to use childcare than those with higher family incomes. Yet previous research has shown that children from lower-income families often benefit more from pre-school care and education than children from higher-income families (NICHD, 2003a).

Of the child-level variables, the most consistently relevant factor was the number of siblings under 14 years living with the infant. It would appear that, where there were a number of young children requiring care, it was less likely that non-parental care would be used for the infant; and where it was used, for fewer hours. This was particularly noticeable for families where there were more than two young children. Part of the explanation is that mothers with three or more children were less likely to work at all, and if they did so, were likely to work for fewer hours. Cost is likely to be a factor in both the decision to work and the number of hours used, due to the high costs of paid childcare for multiple pre-school children. The child's own temperament was not a strong predictor of use of care.

Breastfeeding for three months or more had a significant association with use and extent of non-parental childcare. These mothers were less likely to use non-parental childcare, and when they did, for fewer hours, even after controlling for potentially confounding variables such as education, age and ethnicity.

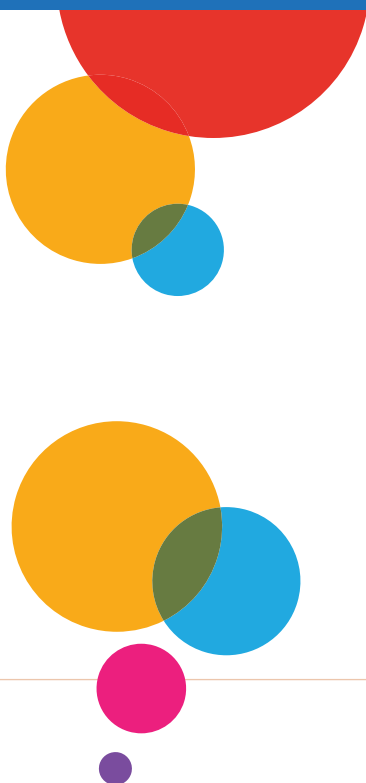
In terms of education, infants whose mothers had a university degree were more likely to be in childcare and for longer hours, even accounting for work status; these mothers were also more likely to be working at nine months. The most important neighbourhood characteristic associated with use of care was the potential availability of relatives to provide childcare, measured by family living locally and regular contact with grandparents living in Ireland.





Chapter 5

CHILDCARE SETTINGS AND CHILDCARE CHOICE



5.1 INTRODUCTION

Much of the research on childcare is concerned with centre-based care, particularly in the US. However, previous Irish research has found high levels of relative care of infants, as well as non-relative home-based care (CSO, 2009). Sylva et al. (2007) argued that research on early childcare needs to take account of the variation and complexity of childcare arrangements. This chapter takes a first step towards unpacking that complexity by examining different types of care for infants in Ireland.

First, how many children are in each care type, how do these settings differ in terms of cost and how do parents feel about the arrangements? The chapter explores differences in the settings that may be related to the quality of that care: the number of adults and children in each, one-to-one interaction with the carer, time spent on activities, and other facilities available.

Second, which infants were in which type of child care? Following Figure 1.1, the type and quantity of non-parental childcare were analysed in relation to factors linked to the child, the maternal/family context, the neighbourhood/local environment, and the mother's employment status. Previous research has found that childcare is related to birth order, with second and subsequent children more likely to be in relative or home-based care than first-borns (Johanson et al., 1996). Typically, research has found no link between temperament and type of childcare (Melhuish et al., 1991), or childcare and gender (Sylva et al., 2007).

Economic circumstances often play a key role in a family's use of childcare, particularly in the US and the UK, where childcare is expensive. More advantaged/higher-income families tend to use non-familial childcare, with disadvantaged families using care by relatives (Sylva et al., 2007). Studies typically focus less on the environmental context (such as neighbourhood conditions and location). Two factors likely to be linked to childcare choices are whether the infant has extended family living locally, and whether there is centre-based childcare available in the local area. Grandparental contact is also considered.

Mothers' beliefs about maternity leave, employment and childcare may also influence the choice of type. Some studies have found that parents who rate learning highly in childcare may be more likely to choose centre-based care, and those who value a 'home-from-home' more likely to choose a home-based setting (Pungello and Kurtz Costes, 1999). Of course this issue is complex to investigate; Pungello and Kurtz Costes highlight that maternal belief and childcare behaviours are bidirectional, in that attitudes influence behaviour and current behaviour or situation influences attitudes. *Growing Up in Ireland* did not collect data on beliefs about employment and childcare, though satisfaction with childcare is examined briefly.

5.2 CHILDCARE SETTINGS – USE, COST AND CONTEXT

When parents select a particular type of childcare for their infant, they may find themselves juggling aspirations with practical constraints such as cost, convenience and availability. In some families, childcare may be required for other children in addition to the Study Infant; arrangements may thus have to be adapted to provide the best fit for everybody's needs. Data from the Quarterly National Household Survey (e.g. 2009) indicated that childcare by relatives was the most common within the Irish population. There are several possible reasons for its popularity, including that parents may place more trust in their own relatives, particularly their own parents (i.e. the child's grandparents) and prefer a home-based setting, particularly for infants, that is similar to their own home, perhaps quieter, and where they may be less likely to pick up common childhood infections from other children, but there are several practical benefits as well. Care by relatives is usually cheaper (or free) than professional childcare and is likely to be more flexible in terms of times a child can be left or collected. However, relative care may not be available to everyone; family members may not live close enough or be able or willing to provide the amount or regularity of care required. Alternatively, some parents may have a preference for a particular childminder who already looks

after their older children or who is prepared to come to the family home. Parents may also prefer to use a crèche because of the presence of qualified staff or the wider range of facilities and activities that a commercial operation may be able to offer over a home-based setting.

Figure 5.1: Use of different forms of non-parental childcare

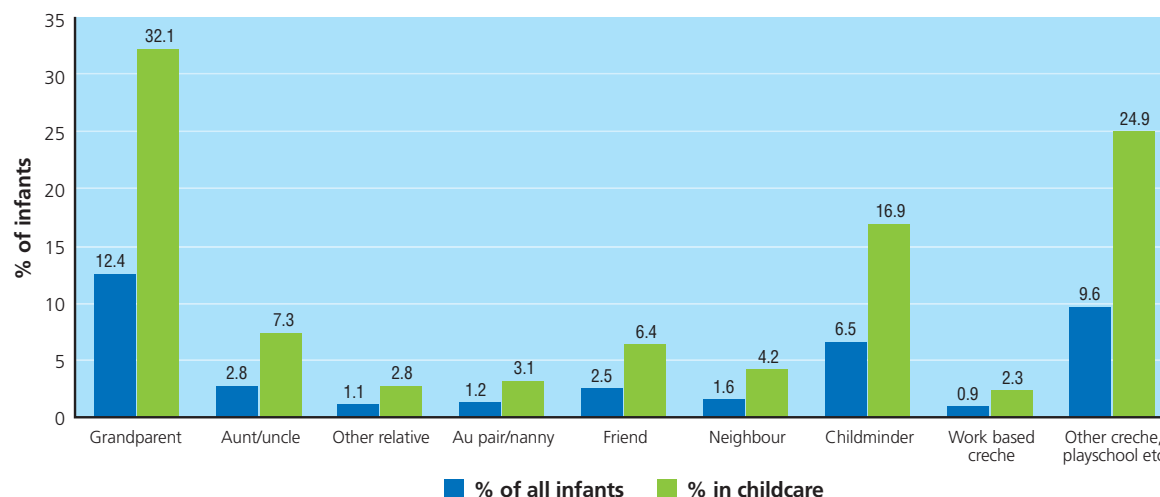


Figure 5.1 presents the use of different forms of non-parental childcare. For most of the following analysis, the various types of care in Figure 5.1 were combined, based on the relationship between infant and the carer and the setting. These can be summarised as: a relative of the child (grandparent, aunt/uncle, other relative); a non-relative who looks after the child in a home-based setting (either known to the parents, like a friend or neighbour, or professional/semi-professional like a childminder or au-pair), or a centre (e.g. crèche, Montessori). Using this classification, the most common main form of childcare was that provided by a relative (42.2%), followed by non-relatives (30.7%) and centre-based care such as crèches (27%). Grandparents, in particular, were a key source of childcare, as shown in Figure 5.1, being the main non-parental carer for 32.1% of infants in childcare or 12.4% of all infants in the sample. Figure 5.1 also shows that much of the childcare for infants was provided in largely unregulated, home-based, settings.

5.2.1 COST OF NON-PARENTAL CARE

Much of the care provided by relatives was unpaid. Table 5.1 shows that only one-third of relatives who cared for the infant in the family home were paid, compared to virtually all centres and the majority of non-relatives. The most expensive childcare when expressed as cost per hour was a non-relative in the family home (€7.35). The majority of these carers (75%) were with two-parent, multi-child families, and it cannot be ruled out that in some instances the payment rate related to care for more than one child and other duties. The most frequent sub-category – ‘au-pair/nanny’ – was also the highest-paid (not shown). The mean hourly rate for childcare centres was €5.71 per hour. The cheapest care (where there was any payment) was a relative in his/her own home (€4.21).

Table 5.1: Distribution of infants' main care across different care types (for infants with some regular non-parental care) including percentage of paid care and mean cost per hour in euro

Care-type	% of infants in care-type	% of these carers who received a payment	Mean cost per hour where paid (€)
Relative in child's home	14.2	33.0	4.98
Relative in carer's home	27.7	49.6	4.21
Non-relative in child's home	8.2	91.7	7.35*
Non-relative in carer's home	22.4	97.1	4.90
Centre	27.5	99.1	5.71

Note: *The high cost for this category could be due to the carer being an employee of the family – perhaps caring for more than one child and/or doing other household tasks.

These figures were somewhat higher than the hourly rates reported in the 2007 childcare module from the Quarterly National Household Survey (e.g. the QNHS hourly rate for centre-based care was €4.80). The figures are not, however, directly comparable for a number of reasons, the main being that the QNHS figures were based on all pre-school children aged five years and under, whereas care for infants is typically more expensive, given the higher staff-child ratio required in childcare centres.²⁹

In *Growing up in Ireland*, mothers were asked about their satisfaction with their chosen childcare arrangements. Overall, a very high proportion of mothers using childcare were very satisfied with their childcare (86%) while a further 12% were fairly satisfied. Satisfaction was higher where the care was provided by a relative (94% of mothers were very satisfied) compared to care provided by a non-relative (88%) or in a childcare centre (73%). Some reasons given for dissatisfaction with childcare provision for the small proportion who were dissatisfied or very dissatisfied were facilities and a preference to have the child minded at home. One caveat with this information is that those who were dissatisfied may have already changed arrangement; another is that mothers may be reluctant to admit they are not satisfied with their care arrangements. In addition, this question referred to the mother's satisfaction with the arrangement, so it may reflect flexibility and convenience, factors which may not be directly linked to the quality of care for the infant.

5.2.2 CHILDCARE SETTINGS

Research on the impact of non-parental childcare on child development has highlighted the importance of features of childcare settings, particularly those associated with quality of care (NICHD ECCRN, 2002; Phillips and Lowenstein, 2011). This section draws on indicators shown by previous research to be associated with quality in centre-based and home-based settings, including relative care.

For infants in non-parental care for more than eight hours for week, a self-report questionnaire was sent to the infant's main carer (where permission was granted by the mother). The content of the questionnaires varied slightly depending on whether the carer was centre- or home-based. Over 700 questionnaires were returned by centre-based carers and more than a thousand by home-based carers. This represents a response rate of 46% overall – 72% for centre-based carers and 41% for home-based carers.

While this response rate is typical of postal questionnaires, and around the same as in a similar survey of infant caregivers in Australia (Harrison et al., 2009), it raises concerns about whether carers who responded may differ from those who did not, and that this would bias the results. To investigate this, significance tests were conducted to check whether there were any statistically significant differences between cases where the carer responded and those where the carer did not, in terms of characteristics likely to affect response rates. We found no difference between respondents and non-respondents in terms of mother's education;

²⁹ In addition, the types of care category are not directly comparable (e.g. the 2007 QNHS module did not distinguish between care in the child's home and care in the carer's home).

whether she worked full-time, part-time or not at all; family income quintile, mother's nationality (centre-based carers), household type (number of parents and children); social class, and mothers' satisfaction with childcare arrangement (home-based carers). Carers of infants whose mother was of minority ethnicity were somewhat less likely to respond (both home-based and centre-based carers); home-based carers of infants of non-Irish nationality were less likely to respond; and centre-based carers of infants whose parents were not satisfied with the care arrangement were somewhat less likely to respond.³⁰ Overall though, the household characteristics of respondents and non-respondents are very similar.

The information supplied by responding carers supplemented that which had already been provided by the mother. Data were collected on:

1. Structural features – number of children and adults, and staff characteristics such as qualifications and experience
2. Practice features – one-to-one interaction, time spent watching TV, time spent sleeping
3. Provision of resources – availability of materials and equipment to support children's play and learning, such as developmentally appropriate toys and books

In terms of group size, infants in home-based care were typically either on their own or with just one or two other children. As might be expected, groups in centres were larger, with a mean of nearly 50 children in total in the centre, according to centre respondents, though a median of 40 (that is, half of centres had 40 children or fewer). In around half of the centres, there were just four other infants under a year old. Typically the majority of other children in the centres were aged one to three years.

Regarding staff-child ratios, the average number of children (including the Study Infant) for each staff member in centres was between four and five, but the ratio for the infant section (if there were multiple ages in the centre) may well have been lower.³¹ If it is assumed that there was one carer in all home-based care situations, the average number of children cared for by relatives was two; the average number for non-relatives was three. Notably, over 60% of non-relative carers cared for three children or fewer. Childminders are exempt from notification if they are caring for three or fewer preschool children; 87% of non-relative carers cared for three children or fewer aged three and under.³² Given that the majority of these are childminders, this suggests that a sizeable proportion of childminders were exempt from notifying the HSE and therefore unregulated. Group sizes and ratios certainly tend to be lower for home-based care, particularly care by relatives.

Figure 5.2 presents the qualifications of carers in childcare³³ reported by carers, distinguishing relative and non-relative home-based carers, and centre-based carers according to whether the respondent was the director (one-third of centre-based respondents) or another employee (the remaining two-thirds). Qualifications are grouped into the following categories: no formal childcare qualification; FETAC level 4, 5 and 6; HETAC or third-level qualification; a childcare award from outside Ireland, and other related courses (teaching, nursing).³⁴

³⁰ Centre-based care: Infants whose carers did not respond were somewhat more likely to have a mother who was not ethnically Irish (14%) than infants whose carers did (10%). They were more likely to have a parent who was less satisfied with the childcare arrangement (67% very satisfied among carers who did not respond, 73% very satisfied among carers who did). Home-based care: Infants whose carers did not respond were more likely to have a mother who was not ethnically Irish (12%) than infants whose carer did respond (8%) and a mother who was of non-Irish nationality (11% v 7.5%).

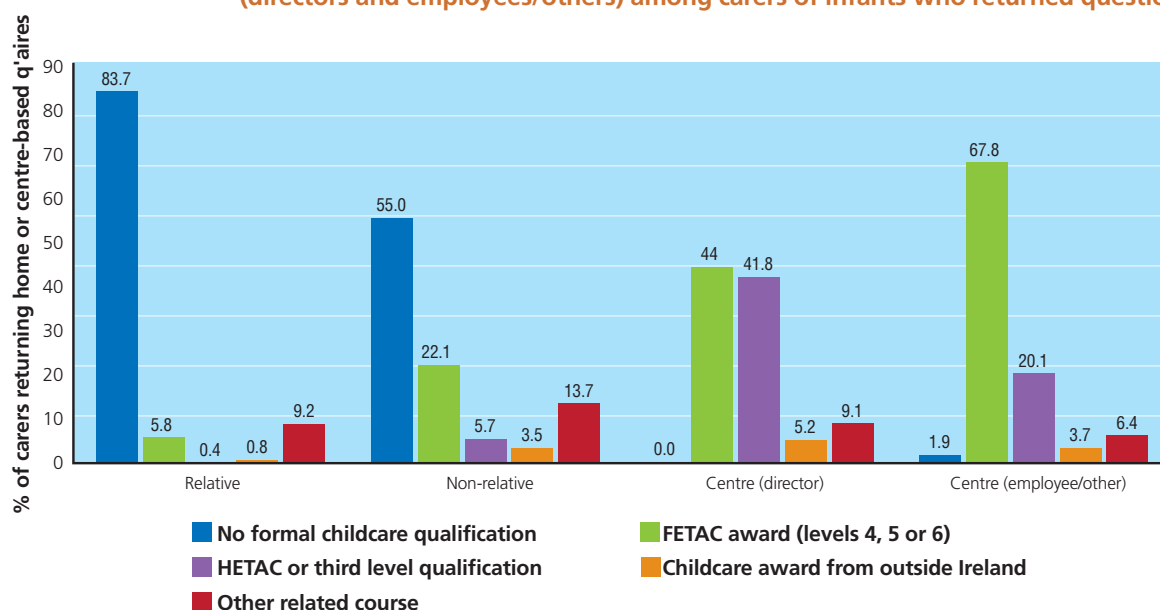
³¹ Centre-based carers were asked to report the total number of children in the centre and the total number of childcare staff (in whole-time equivalents) who look after them.

³² Some 4 year olds are not at school, so the true figure for the proportion of non-relative carers with 3 or fewer preschoolers is likely to be somewhat lower than this. 4 year olds are grouped with 6 year olds in this data on ages of children being cared for, so a precise preschool/after-school breakdown is not possible.

³³ 'Do you have any specific qualification in childcare excluding your experience of raising your own children?'

³⁴ See <http://www.earlychildhoodireland.ie/childcare-training-and-childcare-education/accredited-childcare-training/> for more details. Note that the FETAC qualifications are modular, and it is possible for carers to report having FETAC 4, 5, 6 while only having completed some of the required modules, which would lead to a slight overestimate of this qualification.

Figure 5.2: Highest childcare qualification of home (relative and non-relative) and centre-based carers (directors and employees/others) among carers of infants who returned questionnaires



As might be expected, carers in childcare centres were more likely to have a qualification in childcare than home-based carers. Figure 5.2 shows that very few centre-based carers reported no qualification in childcare, compared to 83.7% of relatives and 55% of non-relatives. Approximately two-in-five responding centre directors and one-in-five responding centre employees had a childcare qualification at HETAC or third level. The Department of Education and Science (2009) background discussion paper for the Workforce Development Plan argues that childcare workers have become increasingly qualified in the last decade. It is clear from Figure 5.2 that the qualifications of non-relative carers are much lower, with over half them reporting no qualification in childcare at all. Grandparents/relatives also show very low levels of qualifications (Figure 5.2).

In terms of 'practice features' of childcare settings, centre-based carers were more likely (83%) to say that infants spent no time at all watching television, compared with 53.2% of home-based carers. However, home-based carers were more likely to report that they 'always' got the chance to talk to the infant on a one-to-one basis during the day (68.8%) than were centre-based carers (47.1%). It should be noted, however, that the latter questionnaire was filled out by the director of the centre in one-third of cases, and he/she may not have been the person who spent most time with the infant.

Considering resources for play and learning, centres tended to have more toys and books than home-based settings, although typically these would be shared by a greater number of children. Centres reported having greater numbers of cuddly/doll-type toys (median=20) and activity-type toys (median=30) than home-based carers (medians of 8 and 10 for cuddly and activity toys respectively). Centres also had more books; only 13.5% of centres said they had fewer than 10 books compared to 48.8% of home-based carers.

Summarising these differences between home-based and centre-based care, infants in homes were more likely to have greater individual interactions with the carer, albeit probably someone with none or few relevant qualifications, but less access to potentially learning-enhancing activities and books than their peers in centre-based care. There are also advantages and disadvantages to mixing with larger groups of children in centres; while mixing with other children may ultimately foster learning and social development, it also gives rise to greater opportunity to encounter childhood infections (see next chapter).

5.3 FACTORS ASSOCIATED WITH CHOICE OF CHILDCARE

This section investigates which factors are associated with childcare choice for infants at nine months of age. A multinomial regression model is used, following the strategy employed by Sylva et al. (2007); the focus is limited to those children who had regular non-parental care at the time of the interview. As care by relatives was the most common (42.2%), this was used as the reference group such that the model effectively asks two questions: why might non-relative care be used instead of relative care, and, separately, why centre-based care instead of relatives?³⁵ Broadly the same potential factors were considered as in the previous chapter examining use of any type of non-parental care: child (gender, temperament, siblings, breastfeeding), mother (partner, age, education, ethnicity), income, community (family availability, grandparent contact, region, crèche availability, neighbourhood disadvantage). Table 5.2 provides the results of the multinomial regression when all variables are included in the model (n=4012).

Child factors

As with use of any childcare, number of siblings was a key child factor to emerge in choice of main childcare type. Parents of infants with one sibling were more likely than parents of only-children to choose either non-relative care (OR=1.38) or centre-based care (OR=1.34) over relative care. Families with three or more children (including the Study Child) were twice as likely to choose non-relative over relative care (OR=2.25) compared to one-child families, but did not differ when it came to choosing centre-based care instead of care by relatives (OR=1.11). Again, however, it is difficult to determine whether these reflect 'unconstrained' choices or whether relatives, particularly older grandparents, are more reluctant to take on caring for several children or older children.

Breastfeeding duration was also significantly associated with choosing an alternative to relative care. Both levels of breastfeeding (up to three months and three months plus) were associated with an increased likelihood (around 50%) of using either non-relative or centre-based care instead of relative care, when compared to infants of mothers who never breastfed. The explanation underlying this pattern is unclear, but it persists despite adjustment for other potentially confounding socio-demographic variables such as mother's age and education level. It may be related to attitudes to child-rearing that favour breastfeeding and professional care. These were not measured in the survey.

Infant temperament appeared to play somewhat more of a role in choice of childcare type than in use of childcare per se. Infants rated as more 'unadaptable' were less likely to be placed in either non-relative (OR=0.97) or centre-based care (OR=0.96) in preference to relative care as the main care type. However, 'fussier' infants were somewhat more likely to be placed in either of these types of care (OR=1.02 for both, but not statistically significant for the latter), and infants who were rated as more 'dull' (i.e. more subdued, less active) were more likely to be in either non-relative (OR=1.04) or centre-based care (OR=1.07) than relative care. The infant's gender was not associated with choice of care.

Maternal factors

The choice of both non-relative and centre-based care over relative care was strongly associated with the age of the mother, with those under 25 years only about half as likely to choose either of these alternatives compared to mothers in the 30-35 year age group. In contrast, mothers aged over 35 years were 50% more likely to choose non-relative or centre-based care over relative care than the slightly younger reference group.

Choosing non-relative care had an association with the educational level of the mother such that those with lower than degree-level education were less likely to take this option. Interestingly, however, mothers with the lowest level of education did not differ significantly in their likelihood of opting for centre-based care (OR=0.83) compared to degree-level mothers in the reference group, although both upper-secondary and post-Leaving Certificate did have lower odds (OR=0.54 and 0.79 respectively). Possibly this reflects the availability of subsidised or community-run centre-based care for the more disadvantaged groups (see Chapter 2), as well as the more advantaged group being better placed to pay for professional childcare.

³⁵ Note that this effectively means that the choice between non-relative care and centre-based care is not directly addressed.

Table 5.2: Factors affecting choice of childcare type (non-relative and centre-based care rather than relative care)

Characteristic		Adjusted odds ratio	
		Non-relative over relative care	Centre-based over relative care
Child's gender	<i>Ref: Boy</i>	1.00	1.00
	Girl	0.94	0.89
Child's temperament (scales)	Fussy-Difficult	1.02*	1.02
	Unadaptable	0.97**	0.96**
	Unpredictable	0.99	1.03
	Dull	1.04*	1.07***
Number of siblings under 14	<i>Ref: None (only child)</i>	1.00	1.00
	One sibling	1.38**	1.34**
	Two or more siblings	2.25***	1.11
Breastfeeding	<i>Ref: Never breastfed</i>	1.00	1.00
	Breastfed up to 3 months	1.72***	1.51***
	Breastfed 3 months or more	1.69***	1.43**
Family structure	<i>Ref: Lone parent</i>	1.00	1.00
	Living with spouse/partner	1.22	1.31
Maternal age	Under 25 years	0.53***	0.57**
	25-29 years	0.65***	0.55***
	<i>Ref: 30-34 years</i>	1.00	1.00
	35 years plus	1.50***	1.51***
Maternal education	Lower secondary or less	0.61**	0.83
	Leaving Certificate or equivalent	0.60***	0.54***
	Post Leaving Certificate	0.76*	0.79*
	<i>Ref: Degree level or above</i>	1.00	1.00
Maternal ethnicity	<i>Ref: Irish</i>	1.00	1.00
	White non-Irish	1.00	0.98
	Other ethnic groups	0.83	0.51*
Family income	Lowest quintile	0.41***	0.44***
	2nd quintile	0.53***	0.39***
	3rd quintile	0.57***	0.41***
	4th quintile	0.69***	0.45***
	<i>Ref: Highest quintile</i>	1.00	1.00
Family living locally	<i>Ref: No</i>	1.00	1.00
	Yes	0.56***	0.42***
Regular contact with grandparents	<i>Ref: No</i>	1.00	1.00
	Yes	0.37***	0.49*
Region	<i>Ref: Urban</i>	1.00	1.00
	Rural	1.51***	0.80*
Local centre-based care	<i>Ref: Not available</i>	1.00	1.00
	Available	0.73*	1.16
Condition of neighbourhood	<i>Ref: Less disadvantaged neighbourhoods</i>	1.00	1.00
	In highest quartile of disadvantage	0.88	0.96

Notes: N. of cases=4012. * p<.05, **p<.01, ***p<.001. Model chi square 937; Nagelkerke R² =0.24.

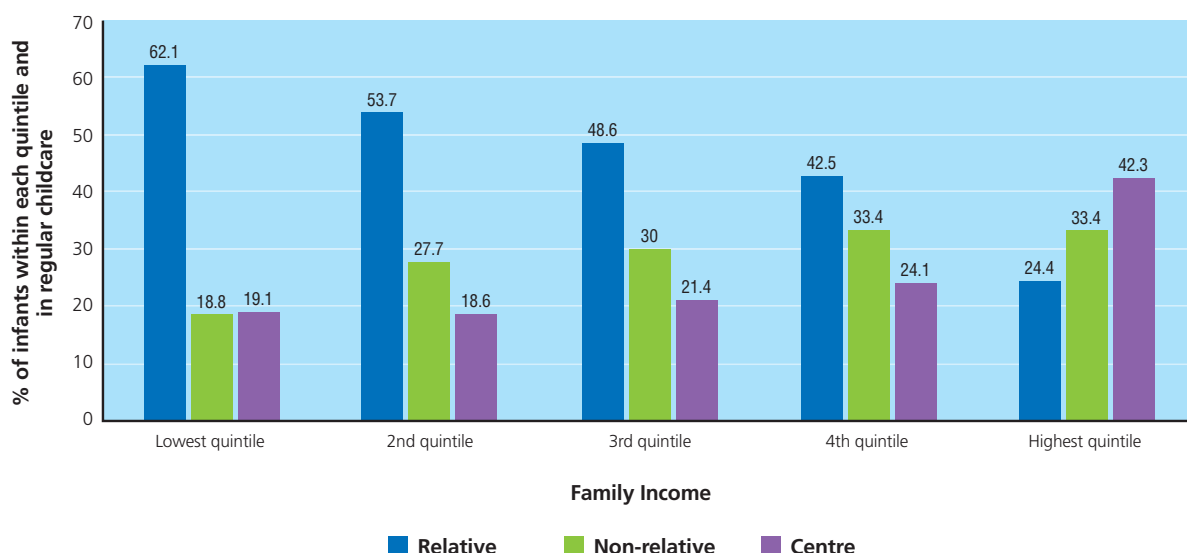
Ethnicity of the mother was not a powerful predictor of type of care, presumably because that model includes the availability of family and grandparents. One exception was that mothers from other ethnic minorities (other than white non-Irish) were less likely to choose centre-based over relative care (OR=0.51). Although the direction of association between partner status and use of either type of non-relative care leaned towards greater use by those living with a partner (OR=1.22 and 1.31 for non-relative and centre care respectively), these ratios did not reach statistical significance.

Community factors

The impact of income notwithstanding, alternatives to non-relative care were less likely to be used when relative care was potentially available; both non-relative care and centre-based care was less likely when family members were living locally or when there was regular contact with grandparents – with odds ratios varying between 0.37 and 0.56. Somewhat surprisingly, the availability of centre-based care did not significantly affect the choice of this type of care over relative care (OR=1.16), although it did seem to make the choice of non-relative over relative care somewhat less likely (OR=0.73). However, it is worth noting that in another multinomial model (not reported in full here) where the reference category was non-relative care (rather than relative care as in the current model), the availability of local centre-based care did make it a more likely choice instead of non-relative care.

Infants in rural areas were more likely than infants in urban areas to be placed in non-relative care (OR = 1.51), perhaps reflecting the wider spread of households in the former; but they were also less likely to be placed in a centre as an alternative to relative care (OR=0.80), possibly reflecting lower availability of crèches in rural areas. Condition of the neighbourhood was not a significant predictor in the fully adjusted model.

Figure 5.3: Choice of relative, non-relative or centre-based care according to family income quintile – for infants in regular non-parental care only



Income

Figure 5.3 shows a strong pattern of choice of childcare by income, with lower-income families much more likely to choose relative care and those from the highest quintile more likely to choose centre-based care. Despite adjustment for the other socio-demographic factors (such as education and age of mother), family income remained strongly associated with choice of childcare. Families with incomes below the highest quintile were, for the most part, only around half as likely as the wealthiest reference group to choose either non-relative or centre-based care over relative care (Table 5.2). This suggests that affordability affects choice of non-parental care.

Mothers responded to a question about the extent to which their choice of childcare was determined by cost.³⁶ Of mothers who said their choice of childcare was completely determined by price (7.8% overall), more than half (57.1%) used relative care compared to 21.9% non-relative and 21% centres. This compares to 42% of the sample overall who used relative care. However, at the other end of the spectrum, among the 50.9% who said choice was 'not at all' determined by cost, relative care still pre-dominated (46.4% compared to 28.0% and 25.6% for non-relative and centres respectively). Thus it seems that mothers whose main source of childcare was provided by a relative were divided between some who actively chose it as their preferred option and those who were driven largely by financial constraints. Not surprisingly, financial constraints were more keenly felt among lower-income groups: 17-18% of mothers in the lowest two income quintiles said their childcare choice was completely determined by cost, compared to 2% in the highest income quintile.

5.4 DISCUSSION

While much previous research, particularly in the US, has focused on centre-based care, for infants in Ireland the primary type of non-parental childcare was relative care, predominantly grandparents, followed by non-relative home-based care and then centre-based care. Most relative care was unpaid; non-relative care and centre-based care was almost all paid, and is expensive, as noted in Chapter 2. Mothers reported high levels of satisfaction with current childcare arrangements.

Qualifications tended to be higher among carers in centre-based care than either non-relatives or particular relative carers, though home-based carers tended to look after fewer children, and group sizes are smaller. Home-based carers – either relatives or non-relatives – generally had fewer learning-based resources, but had more opportunities for one-to-one interaction with the Study Child.

The choice of which type of non-parental care to use was an important decision for parents and their infants, and a whole range of factors were associated with this choice. Of the child-level variables, the most salient factor was the number of siblings under 14 years living with the infant. Results from Chapter 4 showed that, where there were a number of young children requiring care, it was less likely that non-parental care would be used. Analysis showed that where it was used, the care was less likely to be from a relative and more likely to be from a professional caregiver. This was particularly noticeable for families where there were more than two young children, where the infant was more likely to be cared for by a non-relative (childminder or au-pair). It may become more efficient to use home-based paid care for multiple children (compared to one child), as the cost per child is likely to be lower for second and subsequent children, particularly for a carer in the child's home. Associations with other child factors showed that 'unadaptable' infants were more likely to be cared for by relatives (perhaps a familiar setting suited them better); and 'dull/subdued' infants, 'fussy' infants and those breastfed for more than three months were more likely to be cared for by non-relatives or centre-based carers.

Mothers' characteristics (such as education, age and ethnicity) tended to conform to expectations for the most part, with generally more advantaged families less reliant on care provided by relatives. The status of the mother as either a lone parent or living with a partner had more complex associations with choice of care: while lone parents were more likely to rely on relative care, this factor was heavily influenced by interactions with other variables such as income and education. The most important community characteristics were the potential availability of relatives to provide childcare, such as family living locally and regular contact with grandparents living in Ireland. The model fit statistics suggest the factors explored have reasonable predictive power (Nagelkerke $R^2=0.24$), but also that much of the variance in childcare choice is explained by other factors not included.

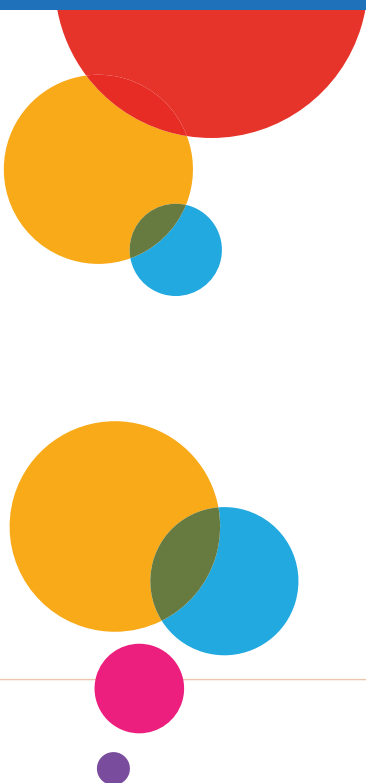
Without data on parental preferences for relative versus non-relative childcare, it was impossible to assess the extent to which parents freely chose between relative, non-relative and centre-based childcare. Preferences in this area were extremely difficult to ascertain, given that people often adapt their preferences to their current situation. Whatever about the type of care parents would choose in an ideal world; these models certainly suggest likely constraints: parents who pay for childcare might choose relative care if their extended family lived nearby; equally, other parents using relative care might choose paid childcare if they could afford it. The strong patterning of childcare choices by income in Ireland, with low-income families choosing relative care even after accounting for whether family members live nearby, and also parents' own responses on financial constraints, suggest that the cost of childcare is an important factor in childcare choices.

Despite the reduced likelihood of them providing care for larger families, and for fewer hours (see Chapter 4), relatives emerged as a highly important source of childcare in Irish society. As well as them being the main non-parental carers for a majority of infants in childcare, the presence of family members living in the area affected not just the choice of relative care over other care types but also whether non-parental care was used at all (Chapter 4). In particular, relatives (most of whom are grandparents) were an important source of childcare for low-income families and for younger mothers. The extent to which this represents a true choice – not just for parents but also for the relatives providing the care – is not clear.



Chapter 6

CHILDCARE AND INFANT HEALTH



6.1 INTRODUCTION

Rates of infection among infants are one of the few outcomes where differences might be expected to arise within the relatively short period that most infants have been in non-parental care. Indeed, the issue as to whether putting children, especially infants, in centre-based care places them at higher risk of common childhood infections is currently a matter of some concern and debate among Irish parents. It is also of relevance to the medical community given concerns about the over-prescribing of antibiotics and the longer-term consequences of this.³⁷ This chapter explores whether there is any indication from the *Growing Up in Ireland* data that infants who are in regular non-parental care are generally less healthy and more prone to infections, and if the trends for home-based care differ from centre-based care.

Much of the research into the effects of childcare on health concerns the level of infection, particularly respiratory, ear and gastro-intestinal illnesses. In the USA, the National Institute of Child Health and Development Study of Early Child Care (with over 1,000 children) found that infants in either centre- or home-based care settings were at a greater risk of ear infections and upper respiratory tract infections (NICHD ECCRN, 2001; 2003b). Children in centre care were at greater risk of stomach illnesses compared to other non-parental care settings. For children in large group settings (more than six children), there was an increased risk of upper respiratory infection, stomach illness and ear infections compared to children cared for at home or in smaller group settings.

An even larger-scale study, the Longitudinal Study of Australian Children (nearly 4,000 infants) found that infants in any type of non-parental care except for "family day care"³⁸ were at greater risk of having "low physical health"³⁹ (Harrison et al., 2009). Infants cared for in childcare centres for more than 20 hours per week had more than twice the risk of poor health than those cared for exclusively by parents. Infants whose childcare started when they were older (10 months or older) had a lower risk than those whose childcare began in the first three months. In terms of the risk of acute infection, infants in long hours of centre-based care had the highest risk of infection, but infants in home-based settings did not differ from those in parental care.

A Danish study of over one million pre-school children using hospital admissions data found that infants under one year of age in centre-based care had an increased risk of hospitalisation for gastro-intestinal infection compared to those in home care (Kamper-Jorgensen et al., 2008), but this did not apply to older children. Similar findings emerged from the same research group in relation to hospitalisation for respiratory infections (Kamper-Jorgensen, et al., 2006), with increased risk for infants under one year in centre-based care – particularly those younger than six months.

Other large-scale studies have also found that younger children are at particularly increased risk of infection when placed in centre-based rather than home-based care. A Finnish study of over 2,500 children aged between one and seven years found that the one-year-olds had the greatest risk of diarrhoea episodes (that appeared to be linked to the use of centre-based care) (Louhiala et al., 1997). An American study of nearly 6,000 children under six years old, using data from the 1988 National Health Interview Survey of Child Health (rather than NICHD data), found that children in centre-based care had a 50% higher risk of repeated ear infections, and that the risk was greatest for children aged 1-2 years (Hardy & Fowler, 1993). Similar findings in relation to recurrent ear infections were reported in a Norwegian study by Nafstad et al. (1999) who also found evidence of a later increased risk of asthma for children who had started in childcare centres before the age of two years. The NICHD study found that, while children in childcare had significantly more illnesses in the first two years of life than those in parental care, by the age of three years these differences were no longer significant, suggesting that the increased risk may be temporary (NICHD ECCRN, 2001).

The contraction of illness in infancy can have implications for child development other than the unpleasant experience of the illness in itself. In a review of findings, Shope and Aronson (2005) reported that along with

³⁷ For example, the Health Service Executive is currently running a public information campaign to discourage it: 'Action on Antibiotics', see <http://www.hse.ie/antibiotics>

³⁸ This type of care involves a childminder caring for a small group of children in the carer's home.

³⁹ A composite variable combining a global health rating similar to that used in *Growing Up in Ireland* combined with a binary variable based on answers to questions about medical needs for a longer-term health condition (Harrison et al., 2009, p121).

an increased risk of middle ear infections and requirements for ear grommets, children in large-group care settings received more treatments with antibiotics, were more often colonised by antibiotic-resistant bacteria, and required more healthcare visits than children in home or small-group care. Increased use of antibiotics may have further implications for child health. Exposure to antibiotics in infancy was associated with increased risk of asthma (Marra et al., 2006) and atopy (tendency to develop allergies) in certain groups of children (Cole Johnson et al., 2005). The use of the antibiotic amoxicillin during infancy has been linked to defects in the tooth enamel of permanent teeth (Hong, Levy, Warren, et al., 2005).

However, some research suggests that early exposure to illness or infection through care settings may also have some immunity-boosting function. The increased exposure to common infections in the first year of life through participation in group-setting childcare was found to reduce the risk of developing acute lymphoblastic leukaemia in childhood, in a study by Gilham et al. (2005). A meta-analysis by Kaila and Tayback (2001) suggested a protective role for early exposure to infection through childcare in the development of Type 1 diabetes, at least for some subgroups. Findings from the NICHD study indicated that children who experienced large-group care in their third year were less likely to get stomach illnesses and upper respiratory tract infections in their early school years (NICHD ECCRN, 2003b).

Set against these potential benefits, however, is a wide range of other disadvantages associated with recurring ill-health in young children. For example, experience of chronic ear infections for children in childcare has been linked to poorer attention in book-reading sessions (Feagans et al., 1994). Lamb and Ahnert (2006) suggested that the differential rates of illness for children who have experienced varying care settings might explain some of the inconsistencies in findings examining the effect of early childcare on linguistic and cognitive competence. Bell et al. (1989) discussed the economic impact of illness in children under three years: they found that young children attending childcare centres were 4.5 times more likely to be hospitalised during the seven-month period of the study (n=843) than those in other care settings. In addition, children in the highest-risk settings incurred the most costly medical bills, and parents of children in childcare centres had higher rates of absenteeism from work than those who used other forms of full-time care outside the home.

The findings from the international literature highlighted the potential implications for type of care settings on child health, particularly infants. Research from many different studies and across several jurisdictions underlined the increased risk of infection associated with centre-based care, with the key difference between home and centre care typically being the number of children in the care setting. However, policies in relation to childcare vary considerably between countries and an analysis of rates and patterns specifically among the Irish population is necessary. In time, longitudinal data from *Growing Up in Ireland* will contribute to understanding whether early exposure to relatively minor infections played a detrimental or immune-boosting role in later child health – particularly when the child starts regular schooling and is mixing with many children. For now, however, the focus is on investigating trends in early infections, by different childcare types.

6.2 ASSOCIATION BETWEEN NON-PARENTAL CHILDCARE AND THE INFANT'S CURRENT OVERALL HEALTH

Mothers were asked to rate the infant's current health (at the nine-month interview) on a four-point scale: 'very healthy, no problems', 'healthy, but a few minor problems', 'sometimes quite ill' and 'almost always unwell'.⁴⁰ For this analysis, these categories were grouped into 'very healthy, no problems' (82.9%) and 'less healthy' (17.1%). A logistic regression was used to examine the association of non-parental childcare with the infant's overall health status.⁴¹ This is based on the mother's assessment of the infant's current health, rather than the assessment of a health professional. Mothers may over- or underestimate their infant's health depending on their perspective.

⁴⁰ Mothers were also asked to retrospectively rate the infant's health at birth, on the same scale.

⁴¹ The global health rating was not confined to health in relation to acute illness, so it could also reflect a longer-term condition.

On the basis of the international literature, it was expected that infants in the *Growing Up in Ireland* sample who attended centres would have a greater risk of being rated as 'less healthy' than those who attended other types of care or who had no non-parental care. In addition to type of care, the model adjusts for child factors of gender, health rating at birth and number of siblings under 14 years; maternal characteristics of ethnicity and education; family income, and, in terms of neighbourhood, whether the infant lived in the poorest-rated areas (based on an index of litter, drug-taking in public, etc – see Section 1.4.2). Infants who had just entered their current main form of childcare (i.e. age of starting was nine months) were excluded from the analysis.

Table 6.1: Association between infants' current health being rated as 'less healthy' and non-parental care and other factors

Characteristic		% 'less healthy'	Model 1	Model 2	Model 3
Type of care	<i>Ref: Parental care only</i>	16.0	1.00	1.00	1.00
	Relative care	15.1	0.95	0.99	1.05
	Non-relative care	15.7	0.97	1.03	1.11
	Centre-based care	29.8	2.29***	2.56***	2.73***
Child's gender	<i>Ref: Boy</i>	18.7		1.00	1.00
	Girl	15.4		0.81***	0.81***
Infant's health at birth	<i>Ref: Very healthy, no problems</i>	12.7		1.00	1.00
	Less healthy	35.2		3.91***	3.88***
Number of siblings under 14	<i>Ref: None (only child)</i>	16.8		1.00	1.00
	One sibling	17.6		1.13	1.13
	Two or more siblings	17.1		1.18*	1.19*
Maternal ethnicity	<i>Ref: Irish</i>	17.0			1.00
	White non-Irish	18.1			1.20*
	Other ethnic groups	18.1			1.08
Maternal education	Lower secondary or less	17.7			0.97
	Leaving Certificate or equivalent	16.0			0.94
	Post Leaving Certificate	17.8			1.01
	<i>Ref Degree level</i>	17.6			1.00
Family income	Lowest quintile	17.7			1.16
	2nd quintile	17.0			1.08
	3rd quintile	16.6			1.01
	4th quintile	16.3			1.00
	<i>Ref: Highest quintile</i>	17.7			1.00
Condition of neighbourhood	<i>Ref: Less disadvantaged neighbourhoods</i>	16.1			1.00
	In highest quartile of disadvantage	21.3			1.35***
Model chi square			105	618	647
Nagelkerke R ²			0.02	0.10	0.11

Notes: N of cases=9,563. * p<.05, **p< .01, ***p<.001.

As expected, Table 6.1 shows that infants who attended centres such as crèches have a higher risk of being rated as 'less healthy' than those with parental care only. In Model 3 (column on far right), this represents nearly three times the risk faced by infants not in childcare (OR = 2.73). However, those in home-based care, by either relatives or non-relatives, did not have an increased risk of being less healthy than infants in parental care only. More than a quarter of infants whose main childcare was in a centre (29.8%) had a 'less healthy' rating compared to rates of between 15% and 16% for those in home-based care settings, or no regular care.

Girls had a lower risk of a 'less healthy' rating than boys (OR = 0.81) and those infants living with two or more siblings had a slightly increased risk of being rated as 'less healthy' (OR=1.19). The most significant child factor was, however, health at birth; those infants rated less healthy at birth were nearly four times more likely to be rated 'less healthy' at nine months (OR = 3.88). The odds ratio for the risk of poor health associated with centre-based care actually increased in Model 2 after controlling for child factors with infants in centre-based care now 2.56 times more likely to be rated by their mothers as 'less healthy' (up from 2.29 times in Model 1). It could be that less healthy children were less likely to be placed in childcare in the first place, so infants in childcare were a selected healthier group to start with.

There was no significant effect of maternal education or income but there was a marginally higher risk for infants whose mothers were white non-Irish (relative to Irish, OR = 1.20), and infants living in disadvantaged neighbourhoods (OR=1.35). Once again, the gap between centre-based care and parental care rises – from OR 2.56 to OR 2.73. Chapter 5 found that socio-economically advantaged children were more likely to be in centre-based care. Once these factors were accounted for, the association with centre-based care and mothers' rating of infant health is stronger. Overall, the model fit statistics indicate that, while some of the variance in health is explained by these factors, much is still unaccounted for.

6.2.1 ASSOCIATION BETWEEN INCREASED RISK AND LONGER HOURS IN NON-PARENTAL CARE AND/OR ENTRY PRIOR TO 6 MONTHS

To estimate the effect of number of hours in care per week (less than 20 hours/20 or more hours) and earlier entry to current main care (prior to 6 months of age/6, 7, or 8 months), the above analysis was re-run with just the children in some form of childcare, and these additional variables added as predictors (n=3,482). The reference group was infants in relative care. In this analysis, infants in centre-based care remained at higher risk of a 'less healthy' rating compared to those looked after by relatives (OR=2.64, $p < .001$) even when adjustments were made for hours in care (OR=1.15, n.s.) and later entry to childcare (OR=0.85, n.s.), neither of which were significant in themselves. The lack of effect of hours and age of entry is somewhat surprising given findings elsewhere, but it may be confounded by the relatively late age of entry to full-time non-parental care seen in this cohort, with more generous maternity-leave provisions delaying the start of non-parental childcare. It could also be that the effect of hours of care was for much higher hours, perhaps 35+ hours. Finally, infants looked after by non-relatives did not differ significantly from those cared for by relatives in their risk of being rated as 'less healthy' (OR =1.09, CI=0.86-1.38).

6.3 ASSOCIATION BETWEEN NON-PARENTAL CARE AND INCIDENCE OF CHILDHOOD INFECTIONS AND WHEEZING/ASTHMA

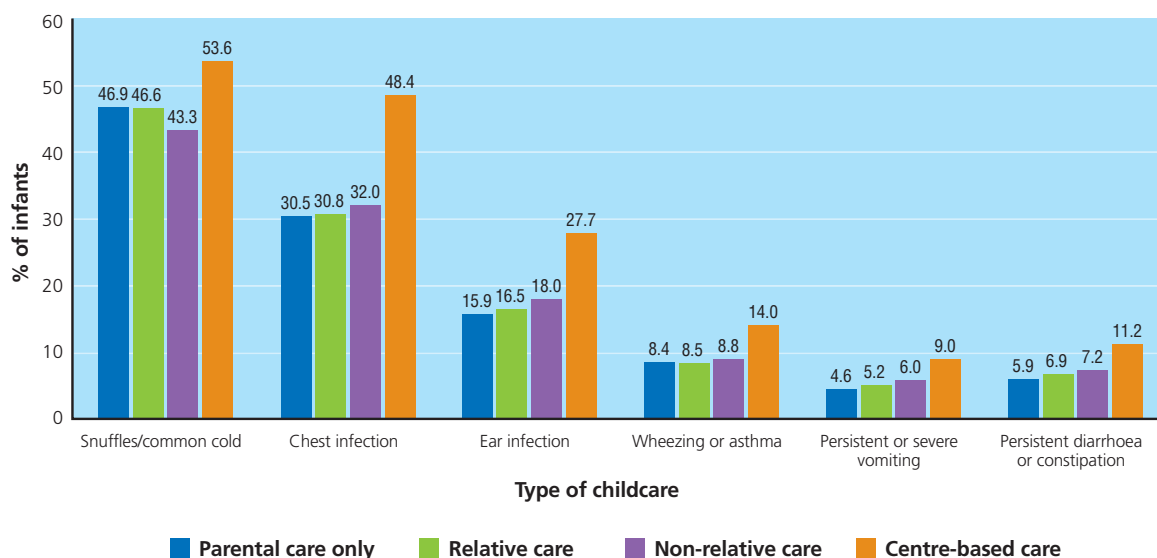
Following on from the finding in Section 6.2 that infants in centre-based childcare were more likely to have a poorer parental rating of current health, the associated risk for these children in relation to some common childhood infections – such as the common cold, chest infections, ear infections and gastro-intestinal symptoms – was explored. Again it was expected that infants in care settings with multiple children would be at greater risk of picking up such infections. As part of the main interview, the mother was presented with a list of specific acute illnesses and asked if the infant *had been taken to a GP, Health Centre or Public Health Nurse, or to Accident and Emergency* for any of them. As no information was gathered as to the timing of these illnesses, it is not possible to say whether they occurred before or after an infant joined their

current childcare setting; this should be borne in mind when considering the following statistics. This measure may be less reliant on the mother's evaluation than ratings of overall health, though infants may have had infections for which no medical attention was sought, and parents may differ in their propensity to seek medical attention for their infants. And, of course, the measure will be more effective at recording more serious infections, as parents are less likely to seek medical attention for minor illnesses such as common colds. As with general health ratings, infants who had only just entered their current main form of childcare were excluded from the analysis.

Figure 6.1 illustrates the frequencies by type of childcare (including parental care only) for 'snuffles/common cold', 'chest infections', 'ear infections', 'wheezing or asthma', 'persistent or severe vomiting' and 'persistent diarrhoea or constipation'. These short-term illnesses were selected as they are typically or frequently caused by viral or bacterial infection, although 'wheezing or asthma' describes symptoms that could also indicate the emergence of a chronic health condition.

The snuffles/common cold was the most frequently occurring short-term illness; almost half of all infants (47.1%) succumbed sufficiently for parents to seek medical attention. However, chest infections were also quite common (30.8%). Persistent or severe vomiting was the least common in this subset (5.2%). Figure 6.1 shows clear indication of a trend in which infants whose main care was in a childcare centre have the highest prevalence rates.

Figure 6.1: Prevalence rates for various childhood illnesses according to childcare type or no regular childcare



Whether the apparent increased risk for centre-based care was robust to controls for other salient variables, such as child's health at birth, was explored using a series of logistic regression analyses. The predictor variables were the same as those used in the model for the child's current health status in Section 6.2: gender, health at birth, number of siblings, education and ethnicity of the mother, income and condition of the neighbourhood.

Table 6.2 confirms that the elevated risk for infection associated with centre-based care remains despite adjustment for other factors. Infants whose main type of childcare was centre-based had a risk level approximately twice that of infants in parental care only for each illness, with the exception of snuffles and colds (OR=1.61). The highest risk for centre-based over parental care was recorded in respect of chest infections (OR =2.48). Infants in relative care were not at any more risk than those in parental care for any of the illnesses. Non-relative care showed a marginally increased risk for chest infections (OR=1.19) and ear infections (OR=1.23).

Table 6.2: Risk of common childhood acute illnesses (for which medical attention was sought) according to type of childcare, showing fully adjusted odds ratios (n=9,585)

Characteristic		Snuffles or common cold	Chest infections	Ear infections	Wheezing or asthma	Persistent or severe vomiting	Persistent or severe diarrhoea or constipation
Type of care	<i>Ref: Parental care only</i>	1.00	1.00	1.00	1.00	1.00	1.00
	Relative care	1.05	1.09	1.08	1.07	1.00	1.09
	Non-relative care	1.08	1.19*	1.23*	1.23	1.32	1.27
	Centre-based care	1.61***	2.48***	2.19***	2.21***	1.89***	1.94***
Child's gender	<i>Ref: Boy</i>	1.00	1.00	1.00	1.00	1.00	1.00
	Girl	1.05	0.78***	0.75***	0.58***	0.84	0.81**
Infant's health at birth	<i>Ref: Very healthy</i>	1.00	1.00	1.00	1.00	1.00	1.00
	Less healthy	1.24***	1.50***	1.28***	1.71***	2.19***	1.70***
Number of siblings under 14	<i>None (only child)</i>	1.00	1.00	1.00	1.00	1.00	1.00
	One sibling	0.88**	1.36***	1.41***	1.41***	0.72**	0.68***
	Two or more siblings	0.75***	1.48***	1.42***	1.71***	0.65**	0.50***
Maternal ethnicity	<i>Ref: Irish</i>	1.00	1.00	1.00	1.00	1.00	1.00
	White non-Irish	1.00	0.63***	0.59***	0.37***	0.86	0.87
	Other ethnic groups	1.04	0.58***	0.29***	0.27***	0.81	0.99
Maternal education	Lower secondary or less	1.65***	1.37***	1.29**	1.33*	0.80	1.24
	Leaving Certificate	1.24***	1.10	0.90	1.12	1.00	1.00
	Post Leaving Certificate	0.96	1.13	1.03	0.99	0.93	1.08
	<i>Ref: Degree level or above</i>	1.00	1.00	1.00	1.00	1.00	1.00
Family income	Lowest quintile	1.55***	1.30**	1.41**	1.74***	1.18	0.94
	2nd quintile	1.22**	1.16	1.18	1.82***	1.02	1.19
	3rd quintile	1.06	1.15	1.21	1.39*	1.11	1.13
	4th quintile	1.00	1.07	1.17	1.30*	1.12	0.97
	<i>Ref: Highest quintile</i>	1.00	1.00	1.00	1.00	1.00	1.00
Condition of neighbourhood	<i>Ref: Less disadvantaged neighbourhoods</i>	1.00	1.00	1.00	1.00	1.00	1.00
	In highest quartile of disadvantage	0.97	1.15*	0.95	1.32**	0.99	1.24*
Model chi sq		247	395	278	322	114	126
R ²		0.03	0.06	0.05	0.07	0.04	0.03

Notes: * p<.05, **p<.01, ***p<.001

As observed in relation to the infant's current overall health rating (Section 6.2), the infant's health at birth stood out as an important predictor of risk of getting medical attention for infections; those who were less healthy at birth were at increased risk of every illness. Table 6.2 also indicates a predictive role for the number of siblings an infant has, although the relationship is more complex in this instance and does not go in the same direction for all illness types. Infants living with one sibling had a significantly increased risk of chest infections (OR = 1.36), ear infections (OR=1.41) and wheezing or asthma (OR=1.41) compared to only-children.

The risk was even greater for infants living with two or more siblings (odds ratios of 1.48, 1.42 and 1.71 for chest infections, ear infections and wheezing or asthma, respectively). These were the particular illnesses for which the risk associated with being in centre-based care was also highest. In contrast, however, living with siblings was associated with a decrease in the risk for requiring medical attention for the snuffles/common cold, and for the two sets of gastro-intestinal symptoms. While these patterns may reflect some sort of immunity function for the presence of siblings (despite the increased risk seen with attendance at childcare centres), it may also be the case that more experienced parents were more likely to let these illnesses resolve themselves without medical intervention. The association between incidence of infection and number of other children under 14 years old in the household was of particular interest, given that the potential for greater exposure to infection in a childcare centre is generally thought to relate to contact with more children.

Gender was also a salient child factor in acute illness. Girls had a lower risk of every illness in this subset except the snuffles/common cold (although the reduced risk of persistent/severe vomiting was at a marginal level of significance, OR=0.84, $p = .053$). The difference was particularly notable in relation to wheezing or asthma, with the risk for girls being almost half that of boys (OR=0.58). Infants of mothers whose ethnicity was other than Irish also had a markedly lower risk of wheezing or asthma: 63% less risk for white non-Irish and 73% less risk for other ethnic groups. These two groups also had a lower risk than infants of Irish parents for chest infections and ear infections.

In relation to the other family and maternal characteristics, Table 6.2 shows that infants in families where the mother had no more than lower secondary education or whose income was in the lowest quintile had a higher risk than the most socio-economically advantaged infants for all the respiratory and ear infections (that were brought to the attention of a medical professional) but not the gastro-intestinal ailments. Living in a neighbourhood in the poorest condition was associated with a marginal increase in the risk of chest infection (OR = 1.15) but a more significant increase in the risk of 'wheezing or asthma' (OR=1.32) and 'persistent or severe diarrhoea or constipation' (OR=1.24).

Apart from the cross-sectional nature of the data, there are some other potential limitations to the conclusions that can be drawn from these analyses. The wording of the question in relation to acute illnesses, particularly the specification that medical attention had been sought for the infant, was initially included to give some indication of the seriousness of the illness. It does, however, create some possibility of confounding with the policies for childcare centres regarding care of sick children. From the sample of carers who returned self-complete questionnaires (see Chapter 4), it is known that most centres will not look after children who are sick (56.6% said 'never' and only 5.8% said 'frequently' or 'always'). This is in contrast to the home-based carers, of whom 26.6% said they 'frequently' looked after the infant when he or she was sick and a further 22.6% 'always' did. There may, therefore, be an additional incentive for parents to seek medical attention for a minor illness if the infant attends a crèche or other centre; however, counter to this hypothesis, infants in centres were nearly three times more likely to be described as less than 'very healthy, no problems' overall, and this parental rating was not predicated on seeking medical attention. It is also of

note that the model fit statistics suggest that, in spite of significant associations with care type, the overall power of these models in predicting illnesses is low.

As already discussed, it is not possible to know when (or indeed how often) the infant was taken for treatment in relation to the various infections, and in some cases this may have been before childcare commenced, although none of the illnesses would be expected to require time to 'develop'. However, this issue was addressed to some extent by excluding any children who had only just started their current arrangement. Additional robustness checks, which exclude any children who started the current childcare later than seven months of age (not reported here but available on request), show that the models were generally unaffected by these additional constraints, and in most cases actually show an increased risk for centre-based care. Furthermore, infants who were attending centre-based care had a higher average number of GP visits since birth (M=3.5) than those in home-based care (M=2.5 for both relatives and non-relatives) or parental care only (M=2.7).

6.3.1 ASSOCIATION BETWEEN LONGER CHILDCARE HOURS AND/OR ENTRY PRIOR TO 6 MONTHS AND INCREASED RISK OF ILLNESS

Repeating these analyses of individual illnesses by type of childcare for those children in some form of non-parental care allowed the introduction of variables measuring weekly hours in care and age of entering the current childcare arrangement (the same analysis as performed on overall health status in the preceding section).

Table 6.3: Selected[†] adjusted odds ratios for risk of each illness according to weekly time spent in childcare and age of starting current childcare arrangement, for infants in some form of non-parental care

Characteristic		Snuffles or common cold	Chest infections	Ear infections	Wheezing or asthma	Persistent or severe vomiting	Persistent or severe diarrhoea or constipation
Type of non-parental care	Ref: Relative care	1.00	1.00	1.00	1.00	1.00	1.00
	Non-relative care	1.04	1.08	1.15	1.22	1.39	1.24
	Centre-based care	1.58***	2.27***	2.01***	2.20***	1.94***	1.88***
Weekly hours in main childcare	Ref: Fewer than 20 hrs	1.00	1.00	1.00	1.00	1.00	1.00
	20 hrs or longer	0.95	1.07	0.95	0.94	0.89	0.95
Age entering current childcare	Ref: Younger than 6 months old	1.00	1.00	1.00	1.00	1.00	1.00
	6-8 months old	0.97	0.82*	1.09	0.71*	1.06	1.18

[†] The additional variables not shown in Table 6.3 but included in the model are those shown in Table 6.2: gender, health at birth, number of siblings, ethnicity, education, income, neighbourhood in poor condition.
Notes: N=3,483. * p<.05, **p<.01, ***p<.001

Table 6.3 summarises the fully adjusted (by the variables in Table 6.2) odds ratios for infants in 20 or more hours of non-parental care per week (relative to fewer than 20 hours) and those who were 6-8 months of age when they started the current main care arrangement (relative to those younger than 6 months). While the difference in duration of childcare between these groups is limited, it reflects the reality of few infants starting regular care much before six months old. The table shows that there was no greater risk for any of the ailments associated with spending 20 or more hours in care in an average week. There was, however, a somewhat lower risk of chest infections (OR = 0.82, p<.05) and wheezing or asthma (OR = 0.71, p<.05) for infants who were at least six months old when starting their current childcare arrangement. Neither longer

hours in care nor earlier age of entering care accounted for the increased risk associated with centre-based care (also Table 6.3), with the odds of having a short-term illness for infants in centre-based care remaining approximately twice that of those in relative care (somewhat less for snuffles/colds).

To further explore the statistically significant relationship between age of entering current main childcare and chest infections, and also with wheezing or asthma, the models described in Table 6.3 were re-run. On this occasion, however, instead of comparing types of care in a single model, separate models were run for each type of care: relative, non-relative and centre-based. The results in Table 6.4 show that later entry to childcare (6 months or older) was associated with a reduced risk of chest infections and wheezing or asthma for centre-based care only, and that reduction was in the region of 45% for the former and 52% for the latter. It is possible that this reflects a greater vulnerability for very young infants in group-care settings but it is also feasible that the relationship may be explained by a longer window of opportunity for picking up infections from other children, and that late starters will have a similar level of risk once they have spent an equal amount of time in childcare. Also, poor health at birth could have an effect that wanes over time.

Table 6.4: Selected[†] adjusted odds ratios for risk of chest infection and wheezing or asthma according to age of starting current childcare arrangement, separately for relative, non-relative and centre-based care

Care Type		Relative (n=1451)		Non-relative (n=1097)		Centre-based (n=935)	
		Chest infections	Wheezing or asthma	Chest infections	Wheezing or asthma	Chest infections	Wheezing or asthma
Age entering current childcare	Ref: Younger than 6 months old	1.00	1.00	1.00	1.00	1.00	1.00
	6-8 months old	0.84	0.74	1.07	1.06	0.55**	0.48**

[†] The additional variables not shown in Table 6.4 but included in the model are those shown in Table 6.2: gender, health at birth, number of siblings, ethnicity, education, income, neighbourhood in poor condition, plus weekly hours in childcare.

Notes: * p<.05, **p<.01, ***p<.001

6.4 DISCUSSION

This analysis largely confirmed the trends observed in other international research with regard to infant illness and childcare settings. Use of a childcare centre as the main type of care was associated with an increased risk of poorer overall health when compared with parental care only. Infants in centre-based care were 2.7 times more likely to be rated by mothers as 'less healthy' than were those in sole parental care, even after controlling for a range of factors likely to be associated with current health, including health at birth. In addition, infants in centre-based care were at a higher risk for all of the short-term infections (or symptoms associated with infection) identified in the literature. These infants were two and a half times more likely to have had a chest infection; over twice as likely to have had an ear infection, and almost twice as likely to have had a gastro-intestinal infection, compared to infants in sole parental care, even after controlling for other factors. With some minor exceptions, infants in home-based care settings did not differ in terms of these health risks from infants still in exclusive parental care.

In some respects, the health disadvantage associated with centre-based care might be considered surprising, were it not for the support found in the international literature. In comparison to home environments, centres are subject to much more stringent regulations and inspection, and tend to have more qualified staff (see Chapter 5). In addition, they are much less likely to allow children to attend the centre while sick than are home-based carers. Yet the increased risk associated with centre-based care remained significant even when adjusting for factors likely to confound the relationship such as child's health at birth and family income.

The most likely explanation for the increase in risk would appear to be the greater exposure to viruses and bacteria that comes from mixing with more children (and adults) in the group setting. Shope and Aronson (2005) suggested that the increase in infections is a result of the sharing of objects and food between children as well as the close proximity. It is interesting to note that, in the current analysis, infants who lived with any siblings were at greater risk of some of the infections (chest, ear and wheezing or asthma) but not others (colds, gastro-intestinal ailments). Also, infants with two or more siblings were also more likely to be rated as less healthy than only-children – possibly as a result of picking up infections in the home.

An important confounding factor in relation to the analyses on acute infections is that parents of infants in centre-based care may be under greater pressure to attend a doctor for minor illnesses so that the infant may be readmitted to the centre as soon as possible; Chapter 4 shows that non-parental care was much more likely to be used by working mothers. A greater inclination to attend for minor illnesses may also explain some of the effect of infant health at birth that was observed, such that, as well as being more prone to infections, parents of infants who have been sickly from the start may be more motivated to have minor infections ‘nipped in the bud’ than parents of generally healthy infants.

While the general trend for increased risk among children attending centres was replicated, some other related trends that might have been expected from the international literature did not emerge. For example, the Australian study (Harrison et al., 2009) observed a stronger negative effect when weekly care was longer than 20 hours per week. This was not evident in the current exploration; however, this duration effect was not always found in similar studies. A study by Hildesheim, Hoffman and Overpeck (1999) found that number of children in the centre was associated with an increase in the risk of ear infections for children aged 1-2 years but not for children under one year or aged 3-5 years.

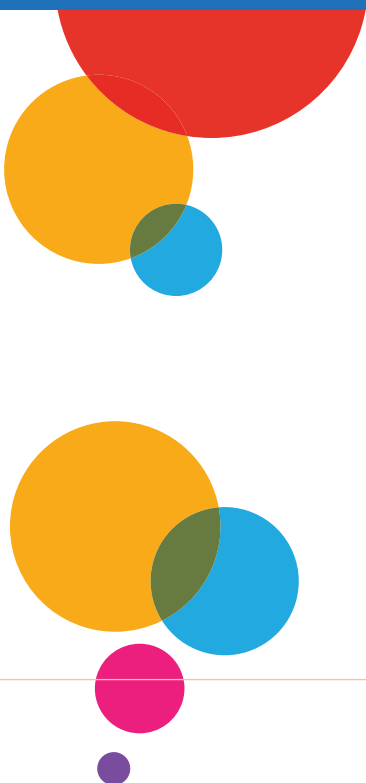
An increase in risk for earlier entry to childcare (before 6 months) was observed in the *Growing Up in Ireland* data for just chest infections and wheezing or asthma, and then only for centre-based care. However, these particular findings were complicated by the relatively low number of infants starting their current main care arrangement before six months old, and by the fact that the particular question refers only to the age of starting the current arrangement (and not any childcare arrangement). Implications for earlier entry to non-parental childcare, particularly centre-based care, may be more usefully investigated in subsequent waves of this study. It is also worth bearing in mind that type of childcare plays a relatively minor role in explaining childhood infection; health at birth is a key factor. The relatively low values for model fit suggest many other unobserved factors play a role too.

Nonetheless, the evidence that can be gleaned from *Growing Up in Ireland* at this stage supports findings from the international literature, as well as anecdotal evidence from practitioners in the field, that infants who attend centre-based care are at more risk of various infections than infants in home-based or parental-only care. These findings have implications for not just the child’s current wellbeing, but also patterns of attending GP services, prescription of antibiotics, and, potentially, parental stress. Arguably, the more salient question, which can only be addressed in years to come, is to what extent there will be any effect of centre-based childcare on the child’s future health and other developmental factors, and whether that effect will be largely positive or negative.



Chapter 7

CONCLUSION



7.1 SUMMARY OF FINDINGS

The primary focus of this report is the care of infants in the first year of their lives. Using a large sample of mothers with infants from the nine-month Infant Cohort of *Growing Up in Ireland*, this report investigated three broad research questions relating to the care of infants in Ireland: which mothers return to paid employment before nine months and the timing of this return, as an indicator of the duration of sole maternal care; the extent and nature of non-parental childcare for infants, and the association between childcare and infant health at nine months. The fieldwork for the survey was conducted in the period September 2008 to March 2009.

The conceptual model which underpins this report rests on a bio-ecological model. The selection and timing of childcare is placed in a series of nested contexts, with the infant at the centre and their parents, family and community context all contributing to decisions about the mother's return to paid work and childcare choices. These choices by individuals are embedded in a policy and labour-market context.

The key features of the labour market and policy context in Ireland were outlined. The period preceding the fieldwork saw a rapid economic boom in Ireland, accompanied by a rise in employment opportunities for women. The employment rate of women rose from 40% in 1994 to 60% in 2008. There were successive extensions in maternity leave in the decade prior to the survey, with six months' paid leave available for mothers who qualified at the time of the survey, and up to sixteen weeks' unpaid leave. There was less policy development for fathers in the period, with low entitlement for them. Childcare is and has been a major issue for parents and policymakers for many years now. In 2008-2009, state funding for early care and education services for pre-school children was limited, and Irish childcare was one of the most expensive in the OECD. There have been some recent policy developments for children aged three and over, but not for infants.

Which mothers in Ireland returned to work by nine months of age? Only 8% of mothers in this sample were in paid employment before their infant was six months old. Returns to work before this period were more likely to be by self-employed mothers, young mothers and lone mothers. However, lone mothers and young mothers were much less likely to have been at work before birth. Highly educated mothers, who were more likely to be able to afford to take unpaid leave, were more likely to return in the eight-nine month period.

A very high proportion of mothers who worked prior to birth – 85% – took paid maternity leave, and they did so for six months. Without a quasi-experiment to compare return to work before and after changes to paid maternity leave, firm conclusions about its impact are not possible, but this evidence suggests that paid maternity leave may be an effective instrument for influencing the labour-market behaviour of mothers in the immediate period after childbirth. Unpaid leave also appeared to have been used, primarily for those who can afford to take it.

What is the extent and nature of non-parental care used by parents in Ireland? Just under two-in-five infants (39%) were in regular non-parental childcare at nine months of age. Following the pattern of return to work, many children started non-parental childcare at around six months of age, and at nine months, the majority (62% of those in care) were in care for less than 30 hours. As expected, the factor most strongly associated with the use of non-parental care, and number of hours care per week, was the work status of the mother, with those who worked full-time more likely to use it for more hours per week. Family income, which largely determined the affordability of childcare for parents, was another factor significantly associated with use and hours of care, which was not surprising, given the very high costs of paid childcare in Ireland. Of the child variables, the most consistently associated factor was the number of siblings under 14 years living with the infant. It would appear that, where there were a number of young children requiring care, it was less likely that non-parental care would be used. This was also likely to be related to cost.

What were the differences related to quality between childcare settings, in terms of use, costs, and other features? The most popular main form of childcare was that provided by a relative (42%), followed by non-relatives, predominantly childminders (30.7%), with centre-based care such as crèches coming third (27%). Carer surveys, with responses from just under half of all carers, revealed interesting differences in the care settings, with higher carer-child ratios in centre-based settings and less one-to-one interaction, but more opportunities for active learning. Many people caring for infants in Ireland do not have any childcare-related qualifications. Over 50% of childminders and over 80% of relatives had no childcare-related qualifications. Qualification levels were highest among centre-based carers, but even here they were relatively low. One in five childcare centre employees had HETAC or third-level qualifications in childcare.

Relatives emerged as a highly important source of childcare for infants in Ireland, although they were less likely to care for several children. As well as being the primary non-parental carer for 42% of infants in childcare, family members living in the area were associated with not just the choice of relative care over other care types but also with whether non-parental care was used at all. In particular, relatives were an important source of childcare for low-income families and for younger mothers. This childcare was typically provided by grandparents.

What is the relationship between child health and different types of childcare? This analysis largely confirmed the trends observed in other international research. Children with low health at birth had a higher risk for infections. Infants in a childcare centre were 2.7 times more likely to be rated as 'less healthy' than infants in sole parental care, controlling for other factors. In addition, though the precise timing of infections is not known, infants in centre-based care were more likely to have had infections for which medical attention was sought. They were 2.5 times more likely to have had a chest infection; over twice as likely to have had an ear infection and almost twice as likely to have had a gastro-intestinal infection compared to infants in sole parental care. With some minor exceptions, infants in home-based care settings did not differ in terms of these health risks from infants still in exclusive parental care. The increased risk associated with centre-based care remains significant even when adjusting for factors likely to confound the relationship, such as child's health at birth and family income. We cannot rule out differences between parents in their propensity to seek medical attention for their infant.

An important constraint on these analyses is that they are based solely on data on nine-month-old infants. Nine months is early for considering the employment outcomes of mothers, as many mothers have not yet returned to work. The analysis is also a 'snapshot': children's lives, including their needs, childcare settings and other circumstances, can change very rapidly. Childcare choices may look quite different for three-year-olds; ratios of carers to children already change at the age of one year. The impact of childcare settings on health may also be different at three years. The real strength of the *Growing Up in Ireland* study is that it has a second wave following the same children to age three years, so the impact of the use and choice of non-parental childcare at nine months on outcomes at three years can be investigated. These include cognitive, language, socio-emotional and behavioural outcomes (see Williams et al., forthcoming).

7.2 POLICY IMPLICATIONS

At the time of writing, the State is developing Ireland's first National Early Years Strategy, for children aged 0-6 years. Though there are many aspects of a young child's life over which the Government has little influence, parents' leave entitlements and childcare policy are important exceptions. Despite the limitations of using only the first wave of data, some policy implications can be drawn. While leave entitlements and childcare policy are discussed separately, these clearly interact: if parental care is extended for mothers and fathers, the length of time parents care for infants before returning to work may change. This will have implications for employment as well as for non-parental care patterns.

7.2.1 MATERNITY LEAVE

Although causal conclusions cannot be drawn with confidence from these data, the evidence suggests that paid maternity leave is an effective policy in influencing the duration of sole maternal care in the first year of an infant's life. Many other factors clearly play a role, but with six months' paid maternity leave at the time of the survey, few mothers took up paid employment earlier than this point. If the Government's aim were to promote/extend the duration of sole parental care in the first year of a child's life, extending paid leave for parents appears to be the most viable way of doing this.

Whether this leave should be for mothers or fathers or both is another relevant policy decision. There were successive extensions of maternity leave in Ireland in the decade preceding the survey. However, there have not been similar extensions to leave provisions for fathers. Take-up of the existing entitlement to unpaid parental leave by fathers (as distinct from 'paternity leave') is very low. If the Government's aim were to increase gender equality in employment as well as leave provision, one way to do this might be to make some proportion of paid leave for fathers only, or to transfer to fathers unused leave entitlements, whether paid or unpaid, from mothers who return to work early (Moss, 2010). This would have two potential advantages from a gender equality perspective. First, any disadvantage in the labour market from breaks around childbirth, now borne by women, would be more equally shared by parents (McGuinness et al., 2009). Secondly, it would be likely to encourage sharing of childcare by parents. Previous research from time-use data in Ireland has shown that there are marked gender inequalities in the care of children in Ireland, with mothers doing the vast majority of caring (McGinnity and Russell, 2008).

7.2.2 NON-PARENTAL CHILDCARE

Cost of childcare

The cost of paid childcare for parents of infants is very high in Ireland, compared to many other EU countries. The fact that it is mainly low-income families who choose relative care suggests that cost plays a significant role in choosing the type of care for infants. It is likely that if costs were lower through some form of state subsidy, this would facilitate choice for parents.

Poverty among families with young children is high in Ireland, and has increased during the recession (Watson et al., 2012). To the extent that employment protects families from income poverty and deprivation, for both lone parents and low-income couples, high childcare costs are a likely disincentive to take up paid employment for mothers of pre-school children who do not have the option of relative care, and this has implications for income poverty.

To the extent that women are penalised in wage terms for career interruptions around childbirth, providing high-quality, affordable childcare would promote women's continuity in employment, a key factor in the gender wage gap in Ireland (McGuinness et al., 2009). In addition, given that childcare costs represent a particularly high proportion of costs for low-wage families, providing affordable childcare should reduce labour-market inequality by promoting continuity of employment, particularly for low-qualified mothers. Of course, preferences and career motivation play an important role in employment choices, and some parents will choose to trade off time with children for current income, but the current system, with very high childcare costs, restricts choice.

By and large the State pays for children's education from age 4-5 to 17-18 in Ireland. If they don't have a relative nearby willing to care for their children, parents pay the price for the care and education of pre-school children.

Quality of care

Quality of care has been shown to be a key factor in child developmental outcomes (Melhuish, 2004). As discussed in Chapter 1, research from the US (NICHD, 2003c) suggests that long hours in non-parental care for infants may be negative, but it also found no harmful effects where quality is high. In particular, disadvantaged children may show cognitive and emotional benefits from high-quality care (Philips and

Lowenstein, 2011). Thus quality of non-parental care for infants is an extremely important issue because positive effects for child development have been found that compensate for disadvantage.

Previous research has also demonstrated a clear link between the quality of staff, in terms of training and qualification, and the quality of service provision, noted in Chapter 2 (e.g. OECD, 2006; European Commission, 2011). Yet there are indications that the qualifications of those caring for infants are variable and overall not high in Ireland. To advance the quality of care, it would be beneficial to promote training and qualification of childcare workers.

The importance of paid childminders for the care of infants in Ireland is not well recognised, as much literature on childcare focuses on centre-based care, and some debates on childcare do not recognise the significance of the role of childminders. Given the importance of quality of care for child development noted in the international literature, this raises the issue of childcare qualifications for childminders. Currently childminders caring for three children or fewer preschool children are exempt from regulation; only those caring for four or five preschool children are required to notify the HSE. There is no regulation of afterschool care by childminders. Given that the majority of non-relatives care for three children or fewer, consideration should be given to the regulatory requirements and training supports for childminders.

7.3 AVENUES FOR FUTURE RESEARCH

While this report focused on the care of infants in the first nine months, data from the three-year cohort of ***Growing Up in Ireland*** will allow researchers to build on this analysis to further our knowledge about childcare for young children in Ireland. Key questions of policy concern relate to developmental outcomes associated with non-parental childcare. There are several outcome measures for three-year-olds, such as direct measures of cognitive ability using the British Ability Scales, and the Strengths and Difficulties Questionnaire measuring behavioural outcomes (see Williams et al., forthcoming). Is participation in non-parental childcare in Ireland in the first three years of life associated with differential cognitive or behavioural outcomes at age three? Does this vary by type of care (home-based versus centre-based) and quality of childcare? Are there different associations depending on the hours of non-parental care and the age the child started in a care arrangement? Research could also examine whether these effects vary by family socio-economic status and home learning environment, as has been found in other countries (Philips and Lowenstein, 2011).

Of course, even before considering outcomes for three-year-olds, there are still many interesting questions pertaining to the Infant Cohort. An issue closely related to the rise in maternal employment is work-life conflict (McGinnity and Whelan, 2009), which can have a detrimental impact on child outcomes (Gornick and Meyers, 2003). Yet work-life conflict is only observed for mothers who are working, so one could also examine parental stress more generally, and whether there is an association with mothers' employment and parental stress.

A further possibility would be to examine gender roles in caring at nine months. Secondary caregivers in couples (mostly fathers) were asked who performed various caring duties with the infant, ranging from basic things such as feeding and bathing to reading to the child. It would be interesting to investigate variations between couples in caring tasks, and whether having the infant in non-parental childcare has any effect on the sharing of caregiving.

It is clear that there is considerable potential in the data from ***Growing Up in Ireland*** to enhance our understanding of the use of non-parental childcare and its impact on young children in Ireland. This report is a first step in furthering that knowledge.

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