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# Nurturing parenting capability: the early years

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Centre for Research on the Wider Benefits of Learning

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# NURTURING PARENTING CAPABILITY:

# THE EARLY YEARS

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# Executive Summary

## Introduction/Background

Few would argue that parents play a paramount role in children's development. Parenting is a high-profile issue, as illustrated, for example, by the recent Good Childhood Inquiry conducted in the UK by the Children's Society. Research has established that parents' socio-economic background, including education and income, has a substantial impact on children's outcomes. Ample evidence also documents the influence of parenting behaviours on children's development from babyhood to late adolescence. Relatively few studies, however, have examined "why parents parent the way they do". But understanding the determinants of parenting is important in order to establish how we can best support parents and whom we should target for support.

In our report, we focus on parenting from babyhood to early childhood. To do this, we first bring together and examine research from a variety of disciplines to address the following questions:

- Why is parenting important in the early years?
- What is good parenting in the early years?
- What are the determinants of parenting in the early years, and is it who you are or what you do that is important?

This provides a framework for the next step of our report—secondary data analysis, in which we focus particularly on the determinants of parenting in the early years, looking at their effects on two key aspects of parenting behaviour: the warmth of interaction and educational communication with their child.

## Key findings

Research around the notion of a "good enough" parent indicates that, contrary to popular understanding, "better" or "authoritative" parenting characterised by high levels of maturity expectation, supervision, disciplinary efforts, sensitivity to and support for a child's needs leads to better-adjusted, more competent children: "good enough" parenting, characterised by only moderate levels of expectation, disciplinary effort and responsiveness, tends to produce, at best, "good enough" children. Girls appear to be particularly vulnerable to the risks of "good enough" parenting for behavioural and emotional outcomes, whereas boys experiencing the same parenting styles have average scores on most competence and problem behaviour scales.

There is a high degree of interactivity between the predictors of parenting behaviour which we measured, and causality cannot be proven. However data analysis highlighted a number of important associations:

Interpersonal sensitivity was strongly associated with greater warmth and interactivity which mothers showed to their children and more effective educational communication. It was also related to parenting behaviour at five years.

Breastfeeding had a positive association with parenting behaviours regardless of marital status or income level. However, it appeared to be particularly important for single[1] and lower-income mothers, continuing to have a positive effect for these groups when their children were five years of age, but not for married and higher-income mothers, or for the sample overall. Conversely, not breastfeeding, seemed to have particularly negative consequences for the parenting behaviours of single and lower-income mothers.

Mothers with more extensive social networks had more positive interactions with their infants than mothers with less extensive networks. This relationship may be partly mediated through improved maternal mental health, since the size of mothers' social networks was positively correlated with measures of their mental health.

In terms of socio-demographic characteristics, mothers who had higher levels of education demonstrated better parenting in terms of the quality of the mother--infant interaction and the use of educational communication. However, family income was not a significant predictor of parenting behaviours. Rather, income was mediated and/or moderated by other factors. For example, having good mental health appeared to offer more protective effects on their parenting for lower-income mothers.

Although it may be supposed that children's characteristics might also affect the behaviour of their own parents towards them, we found this not to be the case.

Overall, the above shows that it is both who you are and what you do that is important in terms of parenting - both *behaviours* such as breastfeeding, and personal and background *characteristics* such as interpersonal sensitivity and education are predictive of parenting behaviour, and there are further relationships between these background characteristics and behaviours.

## Method

A review of the literature on parenting across a variety of disciplines, including psychology, education, sociology, and economics, was followed by data analysis of the Avon Longitudinal Study of Parents and Children (ALSPAC). ALSPAC is an ongoing longitudinal study that includes families representing all demographic characteristics. The study includes 12,500 families and children born in the Avon area of England between 1991 and 1992.

To assess mothers' behaviour towards their children, we used the Thorpe Interaction Measure (TIM) which involves a mother and child sharing a picture book at ages one and five years old, under observation. Mother--child interactions were then assessed and mothers' teaching behaviours (cognitive scaffolding) were rated. The quality of verbal and non-verbal communication between the mother and child, and the warmth of the relationship were also rated. Multiple ratings were assessed to ascertain reliability among observers.

[1] Single mothers include those who have never been married, separated, divorced or widowed. Married mothers include those who have a partner.

In this report, we examined two aggregate scores of the ratings from the mother--child interaction, including:

- *Quality of interaction*: warmth, motivation, verbal and non-verbal communication.
- *Educational communication*: (1) labeling, (2) elaboration and (3) involvement -- a range of activities encouraging the active participation of the child.

For our determinants of parenting, we examined the following predictors:

- *Mother characteristic*s: breastfeeding, attitudes towards breastfeeding, locus of control (i.e. the sense that one has control over one's own life and circumstances), feelings about child and childcare, quality of maternal care that mother received in her own childhood, interpersonal sensitivity (i.e. inter-personal awareness, need for approval, separation anxiety, timidity and fragile inner-self), post-natal depression, mother's age at child's birth, mother's highest education level and number of siblings.
- *Child characteristics*: developmental score, child demand/difficulty, child gender and birth weight.
- *Contextual sources of stress and support*: marital status, social networks, family income and marital satisfaction.

A fuller description of the methodology and more details on the measures used are given in the main report, available at:
http://www.learningbenefits.net/Publications/ResearchReports.htm

## Main Findings

### *Parenting-what makes an effective parent?*

Literature identifies a number of important elements of effective parenting, including meeting the child's basic physical needs, developing a secure and positive attachment between parent and child and developing a child's social and cognitive skills through appropriate structuring of their environment and interaction with them. However, there has been some debate concerning whether what normal parents do or fail to do makes a substantial difference to children's development. As part of this, the concept of a "good enough" parent has arisen. While this is an attractive idea in a society where parents are subject to many and various pressures and demands, there are difficulties with it.

First, research on the whole seems to suggest that "better" or "authoritative" parenting characterised by high levels of maturity expectation, supervision, disciplinary efforts, sensitivity to and support for a child's needs does lead to better outcomes for the child. "Good enough parenting" may be conducive for children's normal development (Scarr, 1993), but the general consensus is that "good enough" parenting – with only moderate levels of expectation, discipline and responsiveness will most likely produce "good enough" children, at best. (see Baumrind, 1993, for a review).

Baumrind also finds that "good enough" parenting also may not produce similar results for boys and girls (Baumrind, 1991). Sons from "good enough" families tend

to have average scores on most competence and problem behaviour scales. Daughters from "good enough" families, on the other hand, are more likely to experience internalising problems such as low self-esteem or to use illicit drugs. Girls may need more from their "good enough" parents, such as a feeling of being special.

Secondly it is difficult to come to a definition of "good enough" which is equally applicable across all groups. What may be considered beneficial for one group of children may not be for another group. Normative child-rearing practices also vary according to the cultural background of the family as they reflect different values of particular groups. Parenting may also be modulated for the particular developmental needs of the child. For example, special-needs children are more likely to require a greater level of guidance and teaching from their parents in order to reach their potential than average or gifted children. This highlights the importance of sensitivity in which parents modify their behaviours based on the particular developmental needs of their child within the scope of their cultural and environmental norms.

How we define concepts of better or even "good enough" parenting may also vary widely given the range of circumstances facing children.

***The Predictors of Parenting Behaviour***

Set within this wider context of parenting we used longitudinal data to examine a number of factors which the research literature suggested as possible influences on two specific aspects of the parenting of infants: parental attachment and teaching behaviours with their children.

Mother Characteristics

For maternal mental health, we found that mothers' interpersonal sensitivity was positively associated with the quality of parenting, including both the warmth of their interaction and educational communication. Sensitivity was particularly important for the educational communication of single mothers compared to mothers who were married or had partners. Sensitivity was also the only factor which showed a continuing relationship with parenting at five years. Although sensitivity was an important factor in parenting, however, it does not necessarily imply better mental health. Interpersonal sensitivity, for example, was positively related to greater post-natal depression—which, itself, predicted lower educational communication. We also found that feelings of control were particularly significant for the educational communication of lower income mothers. Together, these findings highlight that not all indicators of maternal mental health may operate in a similar direction for different groups when predicting parenting behaviours.

Breastfeeding had a positive association with parenting, regardless of marital status or income level. However, it appeared to be particularly important for single and lower income mothers, continuing to have a positive effect for these groups when their children were five years of age, but not for married and higher income mothers, or for the sample overall. Conversely, **not** breastfeeding seemed to have particularly negative consequences for the parenting behaviours of single and lower income mothers. While both breastfeeding and parenting behaviour may be signs of general

levels of engagement with the child, it is also the case that mothers in such challenging circumstances may face more obstacles to breastfeeding, especially for a longer period of time: they may lack role models and encouragement, for instance, or they may be under greater pressure to return to work when their child is still very young. These findings provide further backing for policies aimed at supporting breastfeeding, particularly for more disadvantaged mothers. Future studies should attempt to understand the processes behind these findings -- illuminating, for example, whether the sole reliance on breast milk provides more opportunities for one-to-one interactions between mothers and infants and/or whether the skin-to-skin contact forms greater bonds between breastfed infants and their mothers which, in turn, lead to more positive parenting practices.

In line with other research, our findings showed that more highly educated mothers tended to have higher quality interactions and better educational communication with their infants than less educated mothers. These results remained significant even when family income and marital status were taken into account. This finding highlights the importance of maternal education relative to other socio-economic factors. However, as others have noted, mothers' intelligence, personality and family characteristics may account for such differences. Therefore, it is difficult to ascertain whether it is the education itself -- or the qualities leading one to obtain higher levels of education -- that influence parenting.

Child Characteristics

None of the child characteristics was a significant predictor of parenting behaviours at one and five years. There were also few significant associations in the raw correlations. In particular, a child's developmental status and gender were not correlated with parenting behaviours. This indicates that mothers do not tend to modify their parenting – particularly those behaviours observed in a single task -- based on their child's characteristics at these ages.

Contextual Sources of Stress and Support

Mothers who had more extensive social networks had higher quality interactions with their infants than those who had less developed social networks, even controlling for other factors, including marital status and family income. This suggests that social networks make an important and independent contribution to parenting. This emphasises the importance of having an extensive social network and increasing the frequency of contact with friends and family, particularly for parents of young children.

Family income as a potential source of stress due to financial difficulties, and marital status as a measure of support were not significant predictors of parenting behaviours in and of themselves. Although these variables were significantly correlated with quality of interaction and/or educational communication, these associations were not significant predictors when taking into account multiple factors. This indicates that these do not have independent effects on the quality of parenting, but rather may act as mediators in a fuller model. For instance, mothers with higher family incomes were more likely to have more extensive social networks: thus social networks may mediate, or act as a channel for, the association between family income and quality of interaction in the model.

Continuity in Predictors of Parenting

We also find most of the predictors of parenting at age one became non-significant at age five. The non-significance of many of the predictors may be partly because the measures of parental characteristics were taken prior to the child's birth or during the first few months of the child's life, rather than being contemporaneous with the parenting behaviours under observation at age five. Nurturing parenting during the early years may have longer term effects on children's outcomes, particularly for those in disadvantaged circumstances and, at the very least, provides a good foundation for further development. Although our findings demonstrate that a good start is important, they do not illuminate how best to support parenting over the longer term.

## Conclusions

Both who you are and what you do are important in terms of parenting - personal *characteristics* such as interpersonal sensitivity and education and *behaviours* such as breastfeeding are significant predictors. Socio-demographics perhaps have less influence than we might expect (only education has independent significance) - the other socio-demographic factors are mediated by processes such as social networks and post-natal depression. Given this, we can see that there is room for intervention – "what you do" and even personal characteristics are amenable to support, if appropriately and sensitively offered.

We would therefore recommend that maternal mental health, breastfeeding and social networks form the focus of intervention efforts to boost parenting capabilities. This may have substantial benefits for mothers in more disadvantaged communities who are likely not only to have lower levels of these factors, but whose parenting seems to be more strongly influenced by such factors both in the short and long term.

The greater importance for the parenting of single mothers and mothers on low incomes of factors such as breastfeeding is just one expression of the high degree of interrelatedness between the potential influences on parenting we have examined. Given this interrelatedness, we would further suggest that interventions focus on multiple dimensions. For example, efforts to support maternal well-being may be coordinated to extend social networks and encourage breastfeeding.

The best time to target mothers is most likely during pregnancy, as there is greater access due to antenatal appointments. Mothers' mental health at this early stage may also affect other factors, such as their feelings concerning breastfeeding. Otherwise, interventions should begin as early as possible. Considering the importance of parenting for children's development, investing in parents in the early years can have dividends that extend to the school years and beyond.

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## Contents

## Tables and figures

# 1. Introduction: Aims and Methodology

Few would argue that parents play a paramount role in children's development. Research has established that parents' socio-economic background, including education and income, has a substantial impact on children's outcomes. Ample evidence also documents the influence of parenting behaviours on children's development from babyhood to late adolescence, and this is a high-profile issue, as illustrated, for example, by the recent Good Childhood Inquiry conducted in the UK by the Children's Society. Relatively few studies, however, have examined "why parents parent the way they do" (Belsky, 1984), particularly during the early years of childhood. Yet the early years of parenting determine the path of subsequent parenting and influence children's development during a particularly formative period. Infants and young children experience multiple developmental transitions, and how parents care for their children during these early years has both short-term and long-term consequences that may extend into adulthood (Slade and Wissow, 2004). Considering this, understanding the determinants of parenting is important in order to establish how we can best support parents and whom we should target for support.

In our report, we focus on parenting from babyhood to early childhood. To do this, we first bring together and examine research from a variety of disciplines to address the following questions:

- Why is parenting important in the early years?
- What is good parenting in the early years?
- What are the determinants of parenting in the early years?

This provides a framework for the next step of our report -- secondary data analysis, in which we focus particularly on the determinants of parenting in the early years. An observational measure of parenting is used – the Thorpe Interaction Measure – which examines both the warmth of the mother towards her child and her teaching behaviours when asked to read with her child. Mothers and their children were observed at two time points -- when children were one and five years old. This allows us to determine whether early predictors of parenting relate to mother--child interactions at a later point in time.

Three main groups of variables were selected for analysis -- mothers' characteristics, such as their personality and developmental histories, children's characteristics, such as their temperament and gender, and contextual sources of stress and support, such as social networks and marital relations. We also examine whether any of these predictors mediate, or account for, the relationship between others of our predictors and the mother--child interaction. We then investigate whether there is moderation (i.e. whether some factors are more or less important for mothers depending on their socio-demographic characteristics). We then address the implications of our findings for policy and practice.

Given these findings, we lastly explore how we can best support and nurture parenting. In particular, we ask:

- Which of the determinants identified are open to change/can be supported and when might be the best timing for such support?
- What are the implications for early parenting interventions?

The role of fathers, for instance, and their influence on family functioning is a vastly understudied area (Demo and Cox, 2000). Although more attention has been placed on fathers in recent years, most of the existing studies have focused on mothers. We limit our literature review to maternal parenting and the secondary data analysis consists of mother-child interactions. Nevertheless, our report aims to provide a useful summary regarding parenting in the early years as well as a springboard for further exploration.

## 2. Policy Background

The Government has invested in the early years of childhood through programmes such as Sure Start, and in the expansion of Sure Start Children's Centres, with the target of establishing a centre in every community. Its support for the early years is also explicitly stated in policy documents, such as the Social Exclusion Task Force's 2006 publication, *Reaching Out: An Action Plan on Social Exclusion*:

> It is … known from research just how important a child's early experiences are to the development of the brain …. The child who is nurtured and loved will develop the neural networks which mediate empathy, compassion and the capacity to form healthy relationships …. Unfortunately, this window of opportunity in early childhood is also a window of vulnerability. If a child is not talked to she will not develop speech and language capacity, if she is not given opportunities to use her developing motor systems, she will not develop motor skills, and, most devastating, if she is not loved, she will struggle to love others.

The growing recognition of the importance of early childhood set out in this unusually stark policy statement culminated in the creation in 2007 of the Department for Children, Schools and Families (DCSF). This new Department brought families into a policy area that had traditionally focused on education. This was followed by the 2007 *Children's Plan*'s assertion that "government does not bring up children – parents do – so government needs to do more to back parents and families" in order to ensure children's well-being. The *Children's Plan* announced a number of specific measures to support parents, including the allocation of funding to provide parent advisers in every local authority, the creation of a Parents' Panel to advise the Government on policies affecting parents, investment in family learning to help parents learn with their children, and investment in intensive support for vulnerable families through piloting a 'key worker' approach.

The *Children's Plan* itself built on a raft of measures announced in the document *Every Parent Matters* (2007), which underscored the importance of parents and the need to provide more support for vulnerable families. These measures included the provision of health-led parenting projects in the form of Family--Nurse Partnerships, the expansion of the Bookstart programme providing free books to all families in England, the national roll-out of training from the Parents, Early Years and Learning (PEAL) project, and additional funding to enable local authorities in the most disadvantaged areas to make contact with 'hard-to-reach' parents.

The National Academy of Parenting Practitioners was established in 2007 with the aim of increasing the quality of the parenting workforce and, in the *Supporting Parents* guidance issued in 2006, local authorities were asked to develop a strategic

approach to parenting support services and to appoint a single commissioner to champion services for parents. A number of different grants are now available to local authorities to enable them to develop parenting and family support services (for example, the Parenting Early Intervention Programme, Family Pathfinders and the Family Intervention Project Grant). Meanwhile, the Social Exclusion Task Force's 'Families at Risk' agenda (e.g. *Reaching Out: Think Family*, 2007) has encouraged child and adult services to work together in order best to support the whole family.

This brief overview illustrates the Government's recognition that the early years of childhood represent a particularly opportune time to engage with parents, and the great amount of attention this area has received in policy terms. In such a crowded terrain, the question of what makes for good parenting is particularly relevant for research.

## 3. What is "good" parenting in the early years?

How might we define good parenting? As infants are completely dependent on their caregivers, we may consider "good" parenting to consist of those activities which meet the needs of the child -- without which an infant's survival is at risk. According to Bornstein et al. (2006), three areas of parenting are fundamental to the health, safety and survival of the infant. Nurturing, including feeding, bathing and clothing the infant, ensures the baby's health and well-being. Physical parenting, such as encouraging the baby to crawl and sit up, supports the infant's physical development and motor skills. Social parenting focuses on one-to-one interactions, establishing an emotional connection between mother and child. These practices meet the fundamental needs of a newborn.

"Good" parenting, however, may be more nuanced than simply meeting the survival needs of the child. One of the most important tasks of childhood involves developing a secure attachment to the primary caregiver. The quality of attachment of the mother--infant relationship is considered the cornerstone of future love relationships and the foundation of personality growth. Sensitivity is vital to the development of attachment during the first year (see Demo and Cox, 2000, for a review). Sensitivity refers to the parent's ability to be responsive and attuned to their children's needs and to the developmental tasks they face across childhood (Belsky, 1984). Key aspects of sensitivity may include responsiveness to the child, accurate reading of cues, efforts to soothe when the child is distressed, and appropriate and authentic positive emotion (Bornstein et al., 2006). Sensitive parents also realise that one-size parenting does not fit every child at every stage of development. Therefore, they adapt their parenting to meet the individual and changing needs of their child.

Meeting these needs will sometimes mean that parents need to make sacrifices, whether of time, resources or their own needs (for example, sleep). It is interesting to note that the report of The Good Childhood Inquiry mentioned above (Layard and Dunn, 2009) concluded that a culture of "excessive individualism" among adults was to blame for many of the problems children face as they grow up. This was evidenced, for example, by the finding that around 30 per cent of adults in the UK did not agree with the statement: "Parents' duty is to do their best for their children even at the expense of their own well-being" (World Values Survey, cited in The Good Childhood Inquiry, 2008: 59).

Parents' ability to structure and organise their children's environment is another important component of parenting in the early years. When babies are young, parents may structure their day around regular feeding and napping times. As children grow older, parents may provide predictable routines such as reading books at bedtime. Structure can also involve teaching behaviours which may range from subtle to more direct. Parents' use of vocabulary and their communication with their children have an impact on language development. Through play, parents may teach their children how to interact with others as well as how to manipulate objects. Parents may also instruct their children more directly, for example, through teaching the names of colours and the alphabet.

## 3.1 How does parenting change across the early years?

As babies mature into pre-school-age children, parents need to modify their parenting to meet their developing abilities and needs. During the first year of life, studies reveal that development is best promoted by attentive, warm, stimulating and non-restrictive caregiving (for a review, see Belsky, Lerner, and Spanier, 1984). Parental sensitivity and responsiveness are particularly important during this period to provide a sense of security. These parenting behaviours play an essential role in the development of attachment.

As children enter their second and third years of life, however, parenting becomes more complex as new skills are needed. During this period, children gain mobility and explore their environment; thus, parenting involves more teaching and control. Parents need to provide greater supervision and instruction in order to help their children to become more independent. Fagot and Hagan (1991) found that, for example, parenting changed from 12 to 18 months from positive and supportive to instructive and directive. Other research finds that as children age from one year to three years, mothers report less confidence about their parenting and greater dislike of the mess surrounding children (Waylen and Stewart-Brown, 2008). During the pre-school period (ages three to five), the needs of children change yet again. During this period, high levels of nurturance and control seem to provide the best combination to foster children's ability to engage others in a friendly and cooperative manner, as well as to be resourceful and motivated (Belsky, 1984).

## 3.2 Constellations of Effective Parenting

Researchers have also examined specific combinations of parenting behaviours to determine whether some typologies of parenting are more conducive to children's development than others. Most well known are Baumrind's parenting styles based on the "demanding" and "responsive" behaviours of parents. Demanding refers to the requirements parents make on children to become integrated into the family through their maturity expectations, supervision, disciplinary efforts, and willingness to confront disruptions by the child. Responsive refers to whether parents intentionally foster individuality and self-assertion by being sensitive, attuned, supportive, and acquiescent to children's needs and demands. Baumrind (1991) identified several parenting styles, including authoritative (high demanding, high responsive), authoritarian (high demanding, low responsive), unengaged (low demanding, low responsive), and good enough (medium demanding, medium responsive). Multiple studies have documented that children who have authoritative parents -- that is, both firm disciplinarians and warm, receptive caregivers -- are more competent than their

peers at different developmental periods including pre-school, school age and adolescence.

Recent studies have also examined the generalisability of these typologies beyond middle-class, white families living in the United States (Dekovic and Gerris, 1992; Rohner, Kean, and Cournoyer, 1991). Important questions, however, have emerged regarding the appropriateness of these typologies in describing minority ethnic families. African American families, for example, tend to be more strict and protective than their white counterparts (Leadbeater and Bishop, 1994; McLoyd, 1990). The concepts of *authoritative* and *authoritarian* parenting may also be considered ethnocentric. Asian child-rearing patterns, for instance, do not fit these typologies but rather emphasise indigenous Confucian training ideologies blending parental love, involvement and physical closeness with firm control, governance, training and teaching of the child (Chao, 1994). Together, these findings suggest that the desirability and effectiveness of these typologies of parenting vary according to the socio-historical context and cultural values regarding child-rearing (Demo and Cox, 2000).

## 3.3 The "Good Enough" Parent

Parenting is a difficult task. Parenting is most likely the toughest job we may ever undertake. In our modern society, parenting has become even more complex than in previous generations. With policy and media focused intensely on family and parenting issues, the parenting role has never been so scrutinised or debated. Today, parents often raise children in isolation with very little support from extended family members, friends and neighbours; yet they face extremely high expectations about their parenting role (Gray and Sims, 2007). This has left many parents confused about the best way to bring up their children, and fearful that they may be labelled as a bad parent. To make matters even more confusing, there has been some disagreement concerning whether what normal parents do or fail to do makes a substantial difference to children's development. According to Sandra Scarr (1993), for example, "being reared in one family, rather than another, within the range of families sampled makes few differences in children's personality and intellectual development" (p. 3), and "ordinary differences between families have little effect on children's development, unless the family is outside of a normal, developmental range" (p. 15). Scarr notes that parents' and children's genes largely determine their individual characteristics rather than parenting behaviours, and "the child's environment is merely a reflection of the characteristics of both parents and child" (p. 9). In this view, "good enough parenting" is conducive for children's normal development.

Such notions are based on Hartmann's (1958) concept of the "average expectable environment" and Winnecott's (1965) concept of the "good enough" family. However, how we define concepts of a normative environment varies widely given the range of conditions facing children. What may be considered beneficial for one group of children may be detrimental to another group. Disadvantaged children living in dangerous neighbourhoods, for example, have been shown to benefit from a greater level of parental control compared to children from more privileged backgrounds who may benefit from greater freedom (Gutman, Sameroff, and Eccles, 2002). Normative child-rearing practices also vary according to the cultural background of the family, as they reflect different goals and values of particular cultural groups. Traditional Bangladeshi parents, for example, tend to emphasise greater family cohesion and

parental decision-making compared to white British families. Furthermore, parenting should also be modulated for the particular developmental needs of the child. For example, special-needs children are more likely to require a greater level of guidance and teaching from their parents in order to reach their potential than average or gifted children. Therefore, the definitions of "good enough" parenting and "average expectable environment" vary from child to child, highlighting the importance of the sensitivity with which parents modify their behaviours based on the particular developmental needs of their child within the scope of their cultural and environmental norms.

Contrary to the notions of "good enough" parenting, a wealth of research indicates that better parenting leads to better-adjusted, more competent children (see Baumrind, 1993 for a review). There is also evidence that "good enough" parenting may not produce similar results for boys and girls. Baumrind (1991), for example, found that those parents defined as "good enough" who made only a mediocre effort (medium responsive and medium demanding) had mixed parenting results. Sons from "good enough" families were themselves "good enough" with average scores on most competence and problem behaviour scales. Daughters from "good enough" families, on the other hand, experienced more difficulties. They experienced significantly more internalising problems such as low self-esteem or the use of illicit drugs. According to Baumrind (1991), these findings suggest that these girls needed more from their "good enough" parents than they received, such as a feeling of being special. Therefore, the notion of "good enough" parenting may seem ideal in today's hectic world, yet the reality is that "good enough" parents will most likely produce "good enough" children at best. Considering this, we need to provide support to parents to be more than just "good enough" to ensure that children are not at risk. While good parenting may vary according to culture, environment and child characteristics, there are certain core elements – care, discipline and instruction – which are common to all good parenting although with differing, context-sensitive emphasis. In order to support effective parenting, we need to understand what influences parenting behaviour, to what degree, and which of these influences are amenable to support.

## 4. What are the determinants of parenting in the early years?

In the past few decades, Belsky's (1984) ecological model mapping the determinants of parenting has been widely adopted as a theoretical framework for research on parenting and children's development (e.g. Luster, 1998; Myers, 1999; Hedwig, van Bankel, and Riksen-Walraven, 2002). The model presumes that the quality of parenting is directly influenced by forces emanating from within the individual parent (personality and developmental history), within the individual child (child characteristics), and from the broader social context within which the parent--child relationship is embedded, including marital relations, social networks and demographic characteristics. Among these, mothers' personality and developmental history are considered to be the most influential determinants of parenting. They have a direct influence on parenting as well as shape parenting indirectly by influencing the broader social context in which parent--child relations exist (e.g. marital relations, socio-economic characteristics and social networks).

## 4.1 Parental Characteristics

Numerous studies have demonstrated a direct relation between parental characteristics and their quality of parenting. Particularly prevalent are studies examining the role of parents' psychological functioning. Many studies, for example, have shown that disturbed psychological functioning negatively influences the quality of parenting. Mothers who experience depression -- about 10 to 15 per cent of the population -- may encounter particular problems in providing quality parenting for their children (Weissman, Leaf, and Bruce, 1987; McLearn, Minkovitz, Strobino, Marks, and Hou; 2006). However, maternal depression may have differing effects on different aspects of parenting. For example, mothers with depression report similar safety and feeding practices for their infants as do mothers without depression. However, they report lower rates of breastfeeding and positive behaviours such as reading books (McLearn *et al*., 2006). A meta-analytic review also found differences between positive and negative maternal behaviours (Lovejoy, Graczyk, O'Hare, and Newman, 2000). The relation between maternal depression and parenting was strongest for negative behaviours such as hostility. Although significant, the relation between maternal depression and positive behaviours such as praise, affection and enthusiastic play were relatively weak. There were also moderating effects. For negative behaviours, effects were moderated by the timing of the mother's depression. Current depression had the strongest effects although there were residual effects of prior depression on both positive and negative parenting. The effects of maternal depression on positive parenting were also strongest for disadvantaged mothers and mothers of children under one year of age. This suggests that the youngest children, particularly babies, who are most dependent on their parents, experience the most impaired parenting associated with maternal depression.

Studies have also examined the psychological resources that influence parenting. One of the main tasks of successful parenting is to provide developmentally flexible and growth-promoting care (Belsky, 1984); and therefore, an "ego-resilient" person may prove resourceful and flexible when asked to take on the often stressful task of parenting (Hedwig *et al*., 2002). Ego-resiliency has been defined as "resourceful adaptation to changing circumstances" (Block and Block, 1980, p. 48). As such, ego-resiliency has been shown to predict the quality of interactions between parents and their one-year-old children (Hedwig *et al*., 2002). Similarly, parents with greater self-efficacy and a more internal locus of control are also more likely to engage in competent and positive parenting practices (Bandura, 1997; Kokkinos and Panayiotou, 2007). These parents are more likely to view difficult child behaviour as a challenge, whereas less efficacious adults are more likely to consider it as threatening and instead provide more inconsistent parenting (Coleman and Karraker, 2003). Parents with greater psychological resources not only provide better parenting but are also more likely to have partners -- who have supportive interactions with their children as well, thereby fostering even better outcomes for young children (Hedwig *et al*., 2002).

Greater personal maturity has also been considered to be a predictor of better parenting (Belsky, 1984). As age is a marker of maturity, it has been commonly supposed that maternal age bears a uniform relation with parenting. The "maternal maturity hypothesis" states that younger mothers are less likely to provide appropriate parenting or an optimal home environment (Hofferth, 1987). Teenagers, in comparison to adults, may have difficulty in conceptualising parenthood as a

complex, multifaceted task that involves reciprocal interactions with a child (Bornstein, 2006). Evidence supports this hypothesis, with studies indicating that teenage mothers tend to be less supportive, more detached, more intrusive and more negative/hostile with their infants than older mothers, even above and beyond the effects of socio-demographic factors (Berlin *et al*., 2002).

Maternal age, however, may not be uniformly associated with better parenting, but may relate in different ways with different domains of parenting. In a study examining first-time mothers and their infants (Bornstein *et al*., 2006) mothers provided the necessary "intuitive" behaviours to meet the physical and social needs of their infants, regardless of their age. According to Papousek and Papousek (2002), "intuitive parenting" suggests that once an individual becomes a parent, some parenting cognitions or practices likely proceed automatically. On the other hand, older mothers tend to provide greater, richer communication with their infants than younger mothers (e.g. Bornstein *et al*., 2006). This may be due to significant differences in parental knowledge which, in turn, influences maternal vocabulary use with their infants. Nevertheless, the positive effects of age appear to be less straightforward among mothers in their thirties and beyond. Although greater maternal age provides direct benefits for the mother--infant relationship from adolescence through the mid-twenties, these benefits do not continue to accrue beyond the age of 30 (Bornstein *et al*., 2006). By their thirties, most mothers have achieved stability in their personality and cognitive functioning; therefore, maternal age is unlikely to differentiate parenting beyond this maturity threshold.

Mothers who have previous experience of childrearing may also be considered to be better parents than their less experienced contemporaries. As parenting likely improves with practice, we would expect that parents would be more competent at parenting their later born than first-born children. Many studies examining the effects of birth order attribute differences between first-born and later born children to parents' level of expertise and comfort in the parenting role (e.g. Eisenman, 1992; Sputa and Paulson, 1995). On the other hand, mothers with more children have to divide their time and energy among their offspring, which may influence the length and quality of interactions with each of them. Findings, for example, indicate that parents spend more time with their first-born three-month-old infants than with their later born infants at the same age (Keller and Zach, 2002). However, the birth of later born children may also place the first-born children at a disadvantage. Research demonstrates that the birth of a younger sibling results in fewer positive interactions between the mother and the older child, particularly if there is a shorter time interval between children (Baydar, Greek, and Brooks-Gunn, 1997). The authors also reported temporary increases in behavioural problems and lower scores in reading of the older children, particularly among children of economically disadvantaged families. Thus, parenting may indeed improve with practice; however, the division of parents' resources in terms of time, energy and finances among multiple children may offset the advantages of more experienced parents.

Maternal education may also contribute to more skilful parenting. Several studies document an association between maternal education and the quality of mother--child interaction (e.g. Brody and Flor, 1998; Gutman and Feinstein, 2008; van Bakel and Riksen-Walraven, 2002). Parents with fewer years of education, for example, report spending less time teaching their children (Waylen and Stewart-Brown, 2008).

Considering that parental intelligence is related to quality of parenting (Bradley *et al*., 1993), more educated mothers may provide better care than less-educated mothers because they are more intelligent. Beyond their intelligence, however, mothers may gain knowledge and skills in university or college that contribute to higher quality parenting. For example, more highly educated mothers may have more understanding of child development. Mothers with more education may also have more confidence about their parenting (Waylen and Stewart-Brown, 2008). In addition, they may have gained competencies and functioning related to their years of higher education, such as responsibility and the ability to plan tasks. Although Belsky's original model does not include parental education, more recent studies suggest that his model should be expanded to include parental education as an important determinant of parenting and child development (van Bakel and Riksen-Walraven, 2002).

Breastfeeding may also be indicative of better parenting. Research indicates that mothers who breastfeed have more years of education, higher incomes, and better mental and physical health than those who do not breastfeed (Ray, 2003; Jacobson and Jacobson, 2002; Uauy and Peirano, 1999). There is also a strong association between breastfeeding and children's cognitive development (Jacobson *et al*., 1999; Quinn *et al*., 2001). Although this relationship has been commonly ascribed to the superior nutritional content of breast milk (Uauy and Peirano, 1999), it may also be the result of the greater socio-economic advantage and higher verbal abilities of the mothers who breastfeed (Gibson-Davis and Brooks-Gunn, 2006; Jacobson and Jacobson, 2002). Another potential advantage is that breastfeeding may occur in the context of beneficial parenting practices. Mothers who breastfeed, for example, may have more opportunities to provide stimulating activities, spend more time in one-to-one interactions, or respond more to the needs of their child. Research suggests that this may be particularly true for more educated mothers who may have greater knowledge of how to stimulate their infants cognitively (Gibson-Davis and Brooks-Gunn, 2006).

Developmental history, in terms of the ways in which parents experienced their own upbringing, has also been shown to influence their own abilities to parent (Cohn, Cowan, Cowan, and Pearson, 1992; Hedwig *et al*., 2002). Studies, for example, have examined the relationship between parental attachment security (i.e. parents' own personal attachment history in terms of the security of their relationship with their own parents) and their quality of parenting. Parents who were classified as securely attached were found to be more responsive, sensitive and warm towards their own children than those parents classified as insecure (Pederson, Gleason, Moran, and Bento, 1998). Developmental histories may also influence parenting indirectly through their effect on parents' psychological capabilities. Parental attachment security, for example, was found to influence parents' sense of ego-resiliency which, in turn, influenced the quality of their parenting (Hedwig *et al*., 2002).

Parents' attitudes concerning their child and child-rearing may also guide their parenting practices and influence how they respond to their children (Waylen and Stewart-Brown, 2008). Their attitudes may also be viewed as schemas which are information structures located in memory involved in understanding past experiences and responding to new situations. Parenting schemas involve conceptions of the caregiving role, beliefs about one's own role as a caregiver, and knowledge of children more generally (see Azar, Nix, and Makin-Byrd, 2005, for a review). uch

schemas are shaped by parents' own experiences as children. Schemas, for example, regarding attachment security and the reliability of others in providing nurturance develop in the first year of life. Although schemas formed in childhood are influential, they are not deterministic. Parenting schemas may change with new experiences with important others, including one's own or other children. Problematic parenting schemas may be too simple or rigid. Younger parents, for example, may have simplistic parenting schemas about children's development and may miss opportunities to engage their children in learning activities. Controlling parents, on the other hand, may expect too much from children and may involve child abuse or neglect. Research, however, indicates that such problematic parenting schemas may be altered through intervention efforts including cognitive behaviour therapy and family therapy (Azar *et al*., 2005).

## 4.2 Child Characteristics

As the parent--child relationship is interactive and dynamic, children also influence parenting. Of the research documenting the influence of child characteristics on parenting behaviours, child temperament in terms of agreeability, compliance, irritability, and sociability has received the most attention. However, findings regarding the child characteristics that make parenting more or less difficult have been mixed. While some studies indicate that difficult and irritable temperaments can decrease paternal responsiveness (van de Bloom and Hoeksma, 1994), others have found no significant association (e.g. Woodworth *et al*., 1996). Furthermore, some studies report positive effects of temperamental infants on paternal responsiveness (e.g. Bates *et al*., 1982). Nevertheless, studies do indicate that the nature of children's temperament which may make them more or less difficult to care for does shape the quality and quantity of care they receive (see Belsky, 1984).

In a similar vein, other child characteristics that influence the ease of caregiving, such as birth weight and development, are also likely to affect parenting. For example, parenting may be more difficult for parents of pre-term infants (Trause and Kramer, 1983). Parents of pre-term infants often have greater caregiving burdens related to medical complications that make daily parenting tasks more time-consuming and difficult (McCormick *et al*., 1986). In addition, children with developmental delays also pose many parenting challenges. Many studies have found that parents of children with developmental delays report more stress, especially with child-rearing (e.g. Hauser-Cram *et al*., 2001; Orr *et al*., 1993).

Parenting may also vary according to the gender of the child, although the nature of the differences has been debated (Demo and Cox, 2000). Studies indicate that there is gender-specific involvement between parents and school-age children and adolescents. Mothers may interact more intensely with their daughters, whereas fathers tend to focus on their sons (Lamb, 1997). Research, however, indicates that, overall, there are few areas in which parents vary their parenting between daughters and sons, particularly during the early years of childhood (Gutman and Feinstein, 2008; Seifer, Sameroff, Anagnostopolou, and Elias, 1992). Parents, for example, have been shown to interact equally between sons and daughters in terms of time spent together, one-to-one interactions, parental warmth, supervision, disciplining techniques, parental reasoning and communication style (Gutman and Feinstein, 2008; Lytton and Romney, 1991; Peterson, Bodman, Bush, and Madden-Derdich, 2000).

Not surprisingly, however, parents tend to conform to gender-typed notions of clothing, activities and toys (Crouter, Manke, and McHale, 1995).

## 4.3 Contextual Sources of Stress and Support

A multifaceted perspective on parenting necessitates an examination of the context (i.e. environment) in which parenting occurs. Within this vein, there are numerous studies documenting the positive influence of support on parenting (see Belsky, 1984). Similarly, research highlights the detrimental impact of stressful life circumstance and situations on parenting abilities (see McLoyd, 1990, for a review). Belsky (1984), in particular, underlines three distinct sources of stress and support that are likely to promote or undermine parenting: the quality of the marital relationship, social networks and employment.

Previous studies have documented the importance of the quality of the marital relationship on parenting behaviours (Simons *et al*., 1990, 1993). Parents who receive more support and satisfaction from their marital relationship generally provide more positive parenting behaviours for their children (Carlson and McLanahan; McLanahan and Sandefur; McLanahan and Curtin, 1992). Evidence suggests that this association is true for mothers and fathers, older and younger children, and families in different countries (Belsky, 1990). Marital status and quality, however, occur in the context of the personalities and developmental histories of the spouses themselves. In this sense, marital relations may not influence parenting directly but rather indirectly through their impact on adults' psychological well-being and subsequently their parenting abilities (Belsky, 1984). Nevertheless, evidence does suggest that the effect of marital relations on parenting remains even when controlling for the effects of parental characteristics (Cox *et al*., 1989).

Social networks have also been linked to more adaptive parenting (Gilby *et al*., 2008; Suarez and Baker, 1997). Social networks are defined as "those people outside of the household who engage in activities and exchanges of an affective and/or material nature with members of the immediate family" (Cochran and Niego, 1995, p. 396). Such networks include aspects of social support such as instrumental, informational or emotional help provided by members of one's social network (Crockenberg, 1987) which, for parents, may be giving childcare advice, providing babysitting and helping complete errands. These networks also provide material assistance and serve as role models for parents and children (Shonkoff and Meisels, 2000). However, research indicates that frequency of contact and perceived relationship quality are more important than the actual size of the network (Shonkoff and Meisels, 2000). A tightly knit social network has also been positively associated with more competence in the caregiving role and greater knowledge regarding child-rearing practices (Belsky, 1984).

Whereas contexts of support can provide help for parents, their parenting capabilities are undermined by multiple life stresses and financial hardship. Families who have less disposable income are less able to provide material resources for their children and may have less free time to engage them in interesting and stimulating activities. Mothers with lower household income, for example, engage in fewer outside activities and have less frequent one-to-one interactions with their children from babyhood to early childhood compared to more advantaged mothers (Gutman and Feinstein, 2008). Parents who face multiple stresses are also more likely to use harsh, controlling

parenting styles and punitive parenting (see McLoyd, 1994, for a review). Contexts of support, however, may help buffer the negative effects of hardship. Research indicates that in families with significant stressors, those parents who have extensive and supportive social networks are less likely to provide harsh, punitive and controlling parenting (Hashima and Amato, 1994) and to have a lower incidence of child abuse and violence (Crockenberg, 1987) than their equally stressed but less supported counterparts. Social support may also be more important for those parents without a supportive partner (McLanahan and Sandefur, 1994). Contexts of support including social networks and social support can therefore provide a source of strength that can reduce the negative impact of life stressors and economic hardship for parents.

## 5. Scope and Context of Study

The present study investigates the determinants of parenting in a longitudinal birth cohort dataset of children living in Avon. Our parenting measure is the Thorpe Interaction Measure (TIM) which involves a mother and child sharing a picture book at ages one and five. The TIM assesses the quality of the interaction in terms of warmth and involvement as well as the mothers' teaching behaviours. Unlike most studies, which have relied on parents' reports of their own parenting (e.g. Waylen and Stewart-Brown, 2008), the TIM provides a picture of mothers' actual behaviour with their young child at a point in time. In this study, we examine predictors of these interactions at both one and five years. We therefore examine whether early predictors of parenting are associated with later changes in mother-child interactions from babyhood to early childhood.

Previous studies have examined predictors of parenting practices, attitudes and behaviours. However, most of these have focused on a single dimension such as socio-demographics or parent mental health. Within the framework of Belsky's (1984) model, we examine multiple determinants of parenting, including parental characteristics, child characteristics, and contextual sources of stress and support. We can therefore have a more comprehensive picture of the factors that predict parenting as well as determine the independent contribution of these influences relative to other factors. By entering these different determinants sequentially into the model, we can also examine whether there is any indication of mediation -- where one factor (B) may act as a mechanism through which another factor (A) is related to the outcome (C), thereby reducing the association between (A) and (C) (Baron and Kenny, 1986).

Based on past literature, we also examine evidence of moderation, i.e. whether the strength of the relationship between one factor (A) and the outcome (C) varies according to a third factor (B) (Baron and Kenny, 1986). Thus, we can determine whether some predictors are more or less important for parents depending on their socio-demographic circumstances. Previous literature, for example, indicates that poor mental health may be more detrimental for parents with fewer socio-economic resources. However, some factors, such as social support and/or networks, may help buffer the negative effects of economic hardship and single parenthood. On the other hand, evidence suggests that breastfeeding may be more beneficial to the parenting practices of mothers with higher education. In this report, we investigate the nature of these relationships. In particular, we examine the following research questions:

1. What is the relationship between determinants of parenting (i.e. mother characteristics, child characteristics, and contextual sources of stress and support) and mother--child interactions during babyhood?

2. What is the relationship between early determinants of parenting and later changes in mother--child interactions from babyhood to early childhood?

3. Are there determinants of parenting that mediate or account for the relationship between other predictors and the mother--child interaction?

4. Are some determinants of parenting more important for certain parents depending on their socio-demographic circumstances than for others?

## 5.1 Participants

ALSPAC is a longitudinal study of children born to mothers resident in Avon. It provides good longitudinal information on a large cohort of children with a tremendous wealth of information on family background, interactions between children and other family members, and the cognitive and affective development of children. ALSPAC is unique among large-sample UK longitudinal datasets, as the cohort of children has been surveyed annually. Ethical approval for the study was obtained from the ALSPAC Law and Ethics Committee and the Local Research Ethics Committees.

To be eligible for the study, mothers had to be resident in Avon while pregnant. In addition, their expected date of delivery had to lie between 1 April 1991 and 31 December 1992 inclusive. Of these, 14,541 mothers enrolled in the ALSPAC study had either returned at least one questionnaire or attended a “Children in Focus” clinic.

## 5.2 Procedure

Once the date of birth of the child was entered on the database, questionnaires were sent out at regular intervals specific to the child’s age. Measures of mother characteristics, child characteristics, and contextual sources of stress and support were obtained from these questionnaires. For the TIM, a subsample of mothers (n=1,136) attended the Children in Focus clinic when their child was one and five years old. Mothers were asked to engage their child in the standard situation of sharing a picture book. All sessions were video-recorded. Mother--child interactions were then assessed using the TIM. The primary focus of the rating is the mother’s teaching behaviour (cognitive scaffolding) in showing the book to the child. Categories of behaviour were rated including: labelling, elaboration -- summarising the content of the picture and child involvement -- a range of activities encouraging their active participation. In addition, the quality of verbal and non-verbal communication between the mother and child, and the warmth of the relationship were rated. Multiple ratings were assessed to ascertain reliability among the coders.

## 5.3 Measures

The measures used are listed below. Descriptive statistics are presented in Table 1. See Appendix 10 for a more detailed description of measures.

### 5.3.1 Mother--Child Interactions

- *Quality of interaction*: aggregate score of warmth, motivation, verbal and non-verbal communication.
- *Educational communication*: aggregate score of labelling, long elaboration and involving the child.

### 5.3.2 Predictors

- *Mother characteristic*s: breastfeeding, attitudes towards breastfeeding, locus of control, attitudes about their child and childcare, quality of maternal care mother received in childhood, interpersonal sensitivity (i.e. interpersonal awareness, need for approval, separation anxiety, timidity and fragile inner-self), post-natal depression, mother's age at birth, mother's highest education level and number of siblings of child (taken as a measure of mother's experience of raising children).
- *Child characteristics*: developmental score, demand/difficulty, gender and birth weight.
- *Contextual sources of stress and support*: marital status, social networks, family income and marital satisfaction.

**Table 1. Descriptive Statistics for Measures**

| | | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|---|
| *Outcomes* | Quality of interaction 1 yr | 1139 | -9.04 | 5.14 | 0.48 | 2.37 |
| | Educational communication 1 yr | 1233 | -3.53 | 18.14 | 0.00 | 2.93 |
| | Quality of interaction 5 yrs | 528 | -11.90 | 4.98 | 0.01 | 2.81 |
| | Educational communication 5 yrs | 541 | -5.11 | 9.53 | 0.00 | 2.77 |
| *Mother characteristics* | Months of breastfeeding | 15140 | 0.00 | 3.00 | 0.81 | 1.22 |
| | Attitude to breastfeeding | 12016 | 3.00 | 23.00 | 16.06 | 3.34 |
| | Locus of control | 12448 | 0.00 | 12.00 | 4.37 | 2.12 |
| | Attitude to child and childcare | 11151 | 1.33 | 22.00 | 18.51 | 3.26 |
| | Memories of care from own mother | 12447 | 0.00 | 24.00 | 19.70 | 5.44 |
| | Interpersonal sensitivity | 12995 | 36.00 | 144.00 | 89.67 | 16.34 |
| | Post-natal depression | 12178 | 0.00 | 30.00 | 7.00 | 4.86 |
| | Mother age | 10995 | 1.00 | 4.00 | 2.82 | 0.96 |
| | Mother highest education | 11574 | 1.00 | 5.00 | 3.11 | 1.22 |
| | Number of siblings | 9501 | 0.00 | 18.00 | 1.28 | 0.99 |
| *Child characteristics* | Infant development | 12422 | 0.00 | 16.00 | 9.32 | 3.10 |
| | Child conduct demand and difficulty | 11330 | 7.00 | 35.00 | 28.04 | 4.55 |
| | Birth weight | 13901 | 200.00 | 5640.00 | 3381.51 | 580.84 |
| | Gender | 14620 | 1.00 | 2.00 | 1.48 | 0.50 |
| *Contextual sources of stress and support* | Marital status | 13391 | 0.00 | 1.00 | 0.75 | 0.43 |
| | Social networks | 11209 | 6.00 | 59.00 | 42.94 | 7.73 |
| | Family income | 8538 | 1.00 | 5.00 | 3.47 | 1.26 |
| | Mother satisfaction with partner | 8679 | 0.00 | 21.00 | 15.31 | 3.68 |

### 5.4 Analyses

Data analyses involved several steps. First, correlations were conducted to determine the associations between the variables. Using the correlational analysis as a guide, we were able to determine that several variables did not have any significant associations with quality of interaction and educational communication at either one or five years of age. These included maternal care score, attitudes to child and childcare, child development score, child gender, and marital satisfaction. Although these variables were included in earlier models, they did not contribute to their significance. Therefore, these variables were not included in the final models for the sake of parsimony. Second, regression analyses were performed to examine the predictors of quality of interaction and educational communication at both one and five years of age. Predictors were entered sequentially into the regression in order to determine change in the coefficients and variance explained with each step. Mother characteristics were first, followed by child characteristics, and finally contextual sources of stress and support were entered. This allowed us to determine if there was any evidence of mediation. For the age five outcomes, the corresponding one-year outcome was entered in the final step to determine whether the predictors would still be significant when controlling for earlier parenting behaviours. Lastly, we examined the influence of the moderators. In particular, we examined whether the socio-economic variables (i.e. maternal education, family income, marital status) moderated the relationship between significant predictors (i.e. breastfeeding, post-natal depression, locus of control, interpersonal sensitivity, social support and support networks) and the outcomes (i.e. quality of interaction and educational communication at one and five years of age). To do this, we created interactions among the socio-economic indicators and predictors by multiplying the two variables. Regression analyses were performed with the main effects and interactions terms included in the model. Only significant interactions are reported. More detail of the individual measures used is contained in Annex A.

## 6. Results

### 6.1 Associations among Measures

Table 2 presents the correlations among predictors used in the analyses. The number of significant correlations between the different factors suggests that a high level of interconnectivity and interaction between the potential predictors of maternal behaviour was likely. Mothers from a higher socio-economic background, for example, were more likely to breastfeed, have better mental health and have more sources of support than mothers from a lower socio-economic background. In addition, there were associations within the different categories of predictors themselves: for instance, locus of control, post-natal depression and interpersonal sensitivity, all of which are measures of mental health, showed interlinkages to one another, but also with other groups of variables. As shown in Table 3, quality of interaction and educational communication were highly related to each other. There were also significant associations between quality of interaction and educational communication from one to five years of age, indicating continuity across the two time points.

## Table 2. Correlations among Predictors

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Months of breastfeeding | 1 | | | | | | | | | | | | | | | | |
| 2 Attitude to breastfeeding | .428(**) | 1 | | | | | | | | | | | | | | | |
| 3 Locus of control | .150(**) | -.051(**) | 1 | | | | | | | | | | | | | | |
| 4 Attitude to child and childcare | -.023(*) | .066(**) | .040(**) | 1 | | | | | | | | | | | | | |
| 5 Memories of care | 0.000 | .030(**) | -.127(**) | .114(**) | 1 | | | | | | | | | | | | |
| 6 Interpersonal sensitivity | -.052(**) | -0.014 | -0.006 | .115(**) | .100(**) | 1 | | | | | | | | | | | |
| 7 Post-natal depression | -.119(**) | -.092(**) | .019(*) | -.161(**) | -.191(**) | -.351(**) | 1 | | | | | | | | | | |
| 8 Mother age | .141(**) | .063(**) | -.027(**) | -0.018 | .024(*) | -.031(**) | -.071(**) | 1 | | | | | | | | | |
| 9 Mother highest education | .347(**) | .226(**) | -.155(**) | -.081(**) | .034(**) | -.047(**) | -.114(**) | .163(**) | 1 | | | | | | | | |
| 10 Number of siblings | .049(**) | .023(*) | .048(**) | .041(**) | -.080(**) | -0.015 | .024(*) | -0.012 | -.097(**) | 1 | | | | | | | |
| 11 Infant development | -.103(**) | -.022(*) | 0.015+ | .082(**) | 0.011 | .026(**) | .038(**) | -.063(**) | -.108(**) | -.034(**) | 1 | | | | | | |
| 12 Child conduct and difficulty | .049(**) | .060(**) | -0.018 | .165(**) | .068(**) | .078(**) | -.141(**) | -0.012 | .026(**) | .081(**) | .082(**) | 1 | | | | | |
| 13 Birth weight | .098(**) | .020(*) | .050(**) | 0.010 | -0.011 | -0.007 | -.034(**) | .031(**) | .057(**) | .077(**) | .115(**) | .064(**) | 1 | | | | |
| 14 Gender | .026(**) | 0.005 | 0.014 | 0.017+ | 0.008 | 0.005 | 0.000 | -0.004 | 0.010 | -0.019+ | .022(*) | .041(**) | -.087(**) | 1 | | | |
| 15 Marital status | .133(**) | .031(**) | .027(**) | 0.007 | .091(**) | -.041(**) | -.174(**) | .125(**) | .167(**) | .072(**) | -.090(**) | .058(**) | .084(**) | 0.009 | 1 | | |
| 16 Social networks | .095(**) | .105(**) | -.230(**) | .147(**) | .303(**) | .117(**) | -.320(**) | .047(**) | .176(**) | -.073(**) | 0.003 | .130(**) | 0.017 | 0.001 | .185(**) | 1 | |
| 17 Family income | .215(**) | .105(**) | -.126(**) | -0.010 | .073(**) | -0.016 | -.191(**) | .133(**) | .417(**) | -.022(*) | -.104(**) | .047(**) | .072(**) | 0.003 | .318(**) | .249(**) | 1 |
| 18 Mother satisfaction with partner | -0.021 | 0.012 | -.024(*) | .185(**) | .189(**) | .149(**) | -.245(**) | 0.008 | -.031(**) | 0.012 | .028(**) | .102(**) | .021(*) | 0.001 | .079(**) | .285(**) | .102(**) |

** = $p$ <.01, * = $p$ <.05, + = $p$ <.1

**Table 3. Correlations among Predictors and Parenting Behaviours**

| | | Quality of Interaction 1 yr | Educational Communication 1 yr | Quality of Interaction 5 yrs | Educational Communication 5 yrs |
|---|---|---|---|---|---|
| *Outcomes* | Quality of interaction 1 yr | 1 | .483(**) | .223(**) | .181(**) |
| | Educational communication 1 yr | .483(**) | 1 | .162(**) | .177(**) |
| | Quality of interaction 5 yrs | .223(**) | .162(**) | 1 | .485(**) |
| | Educational communication 5 yrs | .181(**) | .177(**) | .485(**) | 1 |
| *Mother characteristics* | Months of breastfeeding | .130(**) | .146(**) | 0.067 | 0.068 |
| | Attitude to breastfeeding | .152(**) | .113(**) | 0.074 | 0.025 |
| | Locus of control | -.060(*) | -.109(**) | 0.010 | -0.023 |
| | Attitude to child and childcare | -0.022 | -0.006 | 0.003 | -0.035 |
| | Memories of care from own mother | 0.036 | 0.003 | 0.002 | -0.063 |
| | Interpersonal sensitivity | -.088(**) | -.075(**) | -.145(**) | -.105(*) |
| | Post-natal depression | -0.048 | -0.053 | 0.015 | 0.011 |
| | Mother age | .082(**) | .074(*) | -0.017 | -0.047 |
| | Mother highest education | .213(**) | .225(**) | .142(**) | .088(*) |
| | Number of siblings | -.064(*) | -0.004 | 0.026 | -0.025 |
| *Child characteristics* | Infant development | 0.031 | -0.001 | -0.058 | -0.047 |
| | Child conduct demand and difficulty | -0.015 | 0.025 | .096(*) | -0.016 |
| | Birth weight | .070(*) | 0.039 | 0.036 | .093(*) |
| | Gender | 0.018 | 0.038 | 0.078 | 0.047 |
| *Contextual sources of stress and support* | Marital status | .117(**) | .066(*) | .127(**) | .089(*) |
| | Social networks | .115(**) | .102(**) | -0.006 | 0.004 |
| | Family income | .109(**) | .125(**) | .100(*) | .111(*) |
| | Mother satisfaction with partner | 0.009 | -0.016 | -0.042 | -0.003 |

** = $p$ <.01, * = $p$ <.05, + = $p$ <.1

## 6.2 Identifying Predictors of Parenting Behaviour

The regression model was significant for both quality of interaction ($F$ (19, 913) = 4.83, $p < .001$) and educational communication (F (19, 920) = 5.90, $p < .001$) at one year, demonstrating that the variables were good predictors of parenting behaviour. At five years, the regression model was significant for quality of interaction, but only at the 10 per cent significance level ($F$ (14, 295) = 2.15, $p < .01$), and was not significant for educational communication ($F$ (14, 301) = 1.46, $p = .125$). With the exception of the corresponding parenting behaviour measured at one year, there were few significant predictors at five years. The non-significance of many of the predictors may be partly because the measures of parental characteristics were taken prior to the child's birth or during the first few months of the child's life, rather than being contemporaneous with the parenting behaviours under observation at age five. In addition, the R-squared value for each of the models was low, with the selected factors explaining around 10 per cent of the variance in each of the outcome measures. Furthermore, although the factors we identify below are **predictive** of the quality of a mother's interaction with her child, they are not necessarily **causal**. These are important issues for consideration which are discussed later.

### 6.2.1 Characteristics of the Mother

Looking at the characteristics of the mothers themselves, breastfeeding showed an interesting relationship with our two parenting outcomes. For parental warmth and quality of interaction with her infant, a mother's **attitude** towards breastfeeding appeared to be important, whereas for educational communication the actual **duration** of breastfeeding was significantly predictive. Moreover, the benefits associated with breastfeeding were true, regardless of family income and marital status, extending existing evidence about the benefits of breastfeeding to the parenting relationship. Breastfeeding, however, did not predict parenting behaviours at five years, indicating that it may have a more temporal relationship with parenting practices. Considering that the majority of mothers are not breastfeeding beyond their child's first year, this is not unexpected. Nonetheless, our findings indicate that the positive influence of breastfeeding extends beyond the superior nutritional context of breast milk supporting previous evidence that breastfeeding occurs in the context of more positive parenting practices. Future studies should attempt to understand the processes behind these findings -- illuminating, for example, whether the sole reliance on breast milk provides more opportunities for one-to-one interactions between mothers and infants and/or whether the skin-to-skin contact forms greater bonds between breastfed infants and their mothers which, in turn, lead to more positive parenting practices.

While the wider literature emphasises the importance of general maternal mental health, our own study highlighted the key role played by interpersonal sensitivity in mothers' parenting abilities. Greater interpersonal sensitivity was significantly associated with better quality of interaction and educational communication at both one and five years of age, whereas experiencing post-natal depression was associated with significantly worse educational communication at one year. As other research has noted (Belsky, 1984), sensitivity is an important aspect of good parenting, particularly in the early years. Our findings also revealed that mothers' sensitivity during their child's first year of life had a lasting impact on mother--child interactions four years later, even controlling for previous parenting behaviours. However, greater interpersonal sensitivity does not imply better mental health, since it encompasses not only interpersonal awareness but also timidity and a fragile inner self. Interpersonal

sensitivity, for example, is positively correlated with post-natal depression. Therefore, indicators of mental health do not necessarily operate in the same direction when predicting parenting behaviours. Nevertheless, these findings highlight the importance of targeting mothers' mental health during the early years of parenting and suggest that such interventions may have implications for parenting capabilities for years to come.

Also significantly predictive of both parenting measures at one year was maternal education. Previous studies have demonstrated the relationship between a mother's educational level and her parenting practices (e.g. Gutman and Feinstein, 2007). Our findings support these past studies, indicating that more educated mothers tend to have higher quality interactions and better educational communication with their infants than less educated mothers. These results remained significant even when family income and marital status were taken into account, highlighting the importance of maternal education relative to other socio-economic factors. Although mothers' level of education did not predict their parenting behaviours at five years in the full model, the raw correlations were significant, probably a reflection of the smaller sample size in the 61-month models. Nevertheless, the relative importance of a mother's educational level versus her intelligence for parenting capabilities remains uncertain. Innate personality and family characteristics may also account for such differences. In previous analysis of the 1958 National Child Development Study cohort, for example, there was a small positive causal effect of mothers' post-compulsory education on the extent to which mothers provided a cognitively stimulating environment for their children (Feinstein and Duckworth, 2006). Much of the apparent relationship, however, was driven by selection bias, i.e. factors such as aspirations which may both drive a woman's determination to stay in education as well as her parenting capabilities. For these reasons, it is difficult to ascertain whether it is the education itself -- or the qualities leading one to obtain higher education -- that influences parenting.

For mothers' demographic characteristics, we found that number of children – which we used here as a marker of mothers' experience -- was associated with lower educational communication at age five years. Although we expected the opposite relationship, this finding may reflect the relationship between a greater number of children and lower socio-demographics, such as less maternal education. A mother's age, however, was not a significant predictor of her parenting abilities. As this variable was significantly correlated with quality of interaction and educational communication at one year, this indicates that maternal age may be mediated by other factors in the one-year models. For instance, older mothers are more likely to be more highly educated which, in turn, mediates the association between maternal age and educational communication.

Mothers' attitudes about their own child and childcare were not associated with parenting behaviours at one and five years of age, suggesting that mothers may report what they believe to be socially acceptable attitudes, beliefs and behaviours regarding their parenting practices rather than their actual interactions with their children (Waylen and Stewart-Brown, 2008). Mothers' memories of the maternal care received in their own childhood also were not related to their parenting behaviours at one and five years of age, although they were related to the many other maternal characteristics such as mental health. Nevertheless, neither was a significant predictor of parenting behaviours and thus not included in the final models.

Overall, the characteristics of the mother explained 8 per cent of the total variance in quality of interaction and 7 per cent of the variance in educational communication at one year. The most important predictors were mothers' education followed by interpersonal sensitivity. An increase in mothers' education from CSE to university degree, for example, will enhance the quality of the mother--child interaction and educational communication by 1.48 and 1.44, respectively, which represents an increase of more than half of one standard deviation in the outcomes.

Taken together, mothers' characteristics accounted for 4 per cent of the variance in quality of interaction and educational communication at five years of age. The most important predictor was interpersonal sensitivity at five years. A one standard deviation increase in interpersonal sensitivity corresponds to a .49 increase in the outcomes, representing 21 and 17 per cent of one standard deviation in quality of interaction and educational communication, respectively.

### 6.2.2. Characteristics of the Child

None of the child characteristics was a significant predictor of parenting behaviours at one and five years of age. There were also few significant associations in the raw correlations. In particular, a child's developmental status and gender were not correlated with parenting behaviours and therefore not included in the final models. This indicates that mothers do not tend to modify their parenting particularly in a single observational task, based on their child's characteristics.

Overall, there was a relatively small improvement in the model with the addition of child characteristics such that the variance explained increased by one percentage point or less for quality of interaction at one year and educational communication at one and five years of age.

### 6.2.3. Contextual Sources of Stress and Support

We found that social networks were significant: mothers who had more extensive social networks provided a higher quality of interaction with their one-year-old children than mothers with less developed networks. Social networks made an important and independent contribution to the quality of the mother--child interaction, controlling for family income and marital status. Although not significant in the full model, social networks also had a significant correlation with educational communication at one year. However, social networks were not associated with parenting behaviours at five years. Nevertheless, our findings emphasise the importance of having an extensive social network and frequent contact with friends and family, particularly for parents of young children.

Although family income, as a potential source of stress due to financial difficulties, and marital status, as a measure of support, were significantly correlated with quality of interaction and educational communication, they were not significant in the full models. The sole exception was marital status and quality of interaction at one year. Both income and marital status, however, were significantly correlated with a number of the other forms of contextual support and mother characteristics. This indicates that although socio-demographic factors are important for family functioning, other factors may act as mediators when considering a more comprehensive picture. For example, months of breastfeeding may mediate the relationship between family income and quality of interaction at one year.

Overall, contextual sources of stress and support increased the variance explained for quality of interaction by two percentage points and by one percentage point for educational communication at one year. At five years, contextual sources of stress and support increased the variance explained by one percentage point for both quality of interaction and educational communication.

### 6.2.4. Changes in Parenting

For the five-year models, the corresponding parenting behaviour at one year was entered in the last step to examine continuity and relationships in parenting behaviour between the two time points. For quality of interaction, the one-year measure significantly predicted the five-year measure, explaining an additional three percentage points (37 per cent of the total variation explained), so those mothers demonstrating good quality of warmth and interaction with their babies were more likely to demonstrate similar behaviours when their children had reached school age. Furthermore, interpersonal sensitivity maintained significance (albeit marginally) with quality of interaction, even when controlling for the corresponding one-year behaviour. These findings suggest that mothers who have more interpersonal sensitivity may experience more positive changes in their parenting behaviours as their children age from one to five years.

For educational communication, the one-year measure only marginally predicted the five-year measure being significant at the 10 per cent level only and explaining an additional one percentage point (14 per cent of the total variation explained), so mothers who had better educational communication with their babies were more likely to demonstrate similar behaviours when their children were five years of age. Furthermore, interpersonal sensitivity and number of siblings were significantly associated with educational communication, taking into account the corresponding one-year parenting behaviour.

**Table 4. Regression Model of Quality of Interaction at One Year**

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Variables* | B (Beta) | B (Beta) | B (Beta) |
| Constant | -2.51 | -2.70 | -4.38 |
| Months of breastfeeding | .01(.00) | .00(.00) | .02(.01) |
| Attitude to breastfeeding | .06(.08)* | .06(.08)* | .06(.08)* |
| Locus of control | -.06(-.05) | -.06(-.05) | -.04(-.03) |
| Interpersonal sensitivity | .01(.07)+ | .01(.07)+ | .01(.06)+ |
| Post-natal depression | -.02(-.03) | -.02(-.04) | .00(.00) |
| Mother age | .15(.06) | .14(.06) | .13(.05) |
| Mother highest education | .37(.18)** | .37(.18)** | .34(.16)** |
| Number of siblings | -.15(-.06) | -.10(-.06) | -.18(-.07)+ |
| Child demand and difficulty | | -.02(-.04) | -.02(-.04) |
| Birth weight | | .00(.05) | .00(.05) |
| Marital status | | | .68(.11)** |
| Social networks | | | .03(.10)* |
| Family income | | | -.08(-.04) |
| R Squared | .08 | .08 | .10 |

** = $p$ <.01, * = $p$ <.05, + = $p$ <.1

**Table 5. Regression Model of Educational Communication at One Year**

| | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Variables* | B (Beta) | B (Beta) | B (Beta) |
| Constant | -2.98 | -3.15 | -3.87 |
| Months of breastfeeding | .22(.10)* | .22(.10)* | .23(.10)* |
| Attitude to breastfeeding | .00(.00) | .00(.00) | .00(.00) |
| Locus of control | -.08(-.06) | -.08(-.05) | -.07(-.05) |
| Interpersonal sensitivity | .02(.11)** | .02(.11)** | .02(.12)** |
| Post-natal depression | -.06(-.10)* | -.06(-.10)* | -.06(-.09)* |
| Mother age | .07(.02) | .08(.02) | .07(.02) |
| Mother highest education | .36(.13)** | .36(.13)** | .33(.12)** |
| Number of siblings | .04(.01) | .04(.01) | .05(.01) |
| Child demand and difficulty | | .01(.01) | .01(.01) |
| Birth weight | | -.00(-.00) | -.00(-.00) |
| Marital status | | | -.13(-.02) |
| Social networks | | | .01(.03) |
| Family income | | | .06(.02) |
| R Squared | .07 | .07 | .08 |

** = $p$ <.01, * = $p$ <.05, + = $p$ <.1

## Table 6. Regression Model of Quality of Interaction at Five Years

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| *Variables* | B (Beta) | B (Beta) | B (Beta) | B (Beta) |
| Constant | -3.53 | -5.08* | -4.35+ | -3.39 |
| Months of breastfeeding | .03(.01) | .03(.01) | .01(.00) | .04(.02) |
| Attitude to breastfeeding | .07(.07) | .06(.06) | .07(.08) | .06(.06) |
| Locus of control | -.08(-.05) | -.07(-.05) | -.07(-.05) | -.05(-.03) |
| Interpersonal sensitivity | .03(.16)* | .03(.16)** | .03(.15)* | .02(.11)+ |
| Post-natal depression | -.04(-.07) | -.03(-.05) | -.03(-.05) | -.02(-.03) |
| Mother age | -.02(-.00) | -.01(-.00) | -.03(-.00) | -.03(-.00) |
| Mother highest education | .13(.05) | .14(.05) | .14(.05) | .07(.03) |
| Number of siblings | .11(.03) | .09(.03) | .08(.02) | .12(.03) |
| Child demand and difficulty | | .05(.09) | .05(.09) | .05(.09) |
| Birth weight | | .00(.00) | .00(.00) | .00(.00) |
| Marital status | | | .55(.07) | .32 (.04) |
| Social networks | | | -.03(-.08) | -.02 (-.07) |
| Family income | | | .03(.01) | .08 (.03) |
| Quality of interaction 1 year | | | | .24 (.19)** |
| R Squared | .04 | .05 | .06 | .09 |

** = $p < .01$, * = $p < .05$, + = $p < .1$

**Table 7. Regression Model of Educational Communication at Five Years**

| | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| *Variables* | B (Beta) | B (Beta) | B (Beta) | B (Beta) |
| Constant | -1.58 | -3.93 | -3.59 | -3.22 |
| Months of breastfeeding | -.03(-.01) | -.03(-.01) | -.02(-.01) | -.02(-.01) |
| Attitude to breastfeeding | .03(.03) | .01(.02) | .02(.02) | .01(.02) |
| Locus of control | -.12(-.09) | -.13(-.09) | -.12(-.09) | -.10(-.08) |
| Interpersonal sensitivity | .03(.15)* | .03(.15)* | .03(.15)* | .02(.13)* |
| Post-natal depression | -.03(-.05) | -.02(-.04) | -.02(-.04) | -.02(-.04) |
| Mother age | -.11(-.04) | -.12(-.04) | -.12(-.04) | -.12(-.03) |
| Mother highest education | .01(.00) | .01(.00) | -.01(-.00) | -.01(-.00) |
| Number of siblings | -.31(-.10)+ | -.30(.10)* | -.30(-.10)* | -.30(-.10)* |
| Child demand and difficulty | | .03 (.06) | .03(.05) | .03(.05) |
| Birth weight | | .00 (.08) | .00(.08) | .00(.09) |
| Marital status | | | .04(.00) | .04(.00) |
| Social networks | | | -.00(-.00) | -.00(-.00) |
| Family income | | | .13(.06) | .13(.05) |
| Educational Communication 1 year | | | | .09(.10)+ |
| R Squared | .04 | .05 | .06 | .07 |

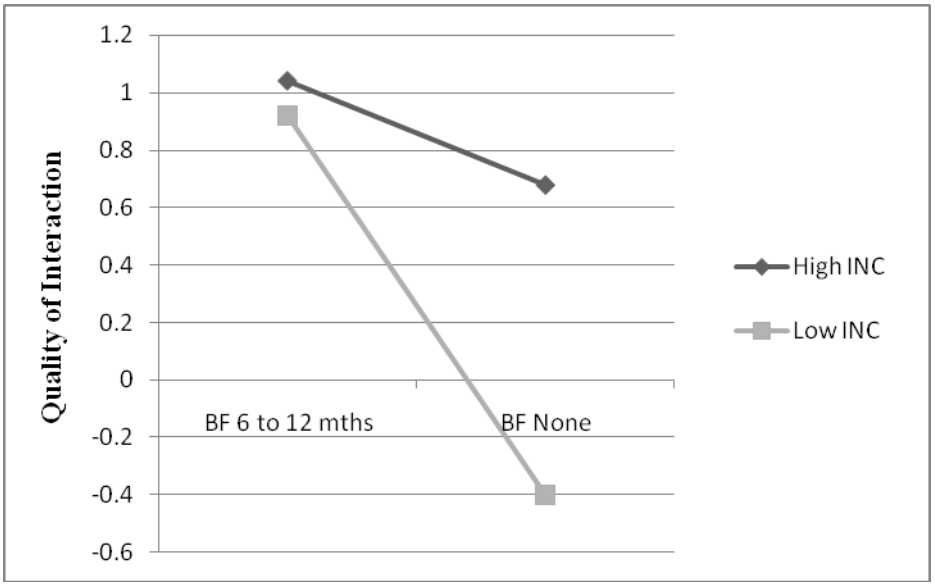
** = $p < .01$, * = $p < .05$, + = $p < .1$

## 6.3 Moderating Factors

### 6.3.1 Breastfeeding and Parenting Behaviours at One Year

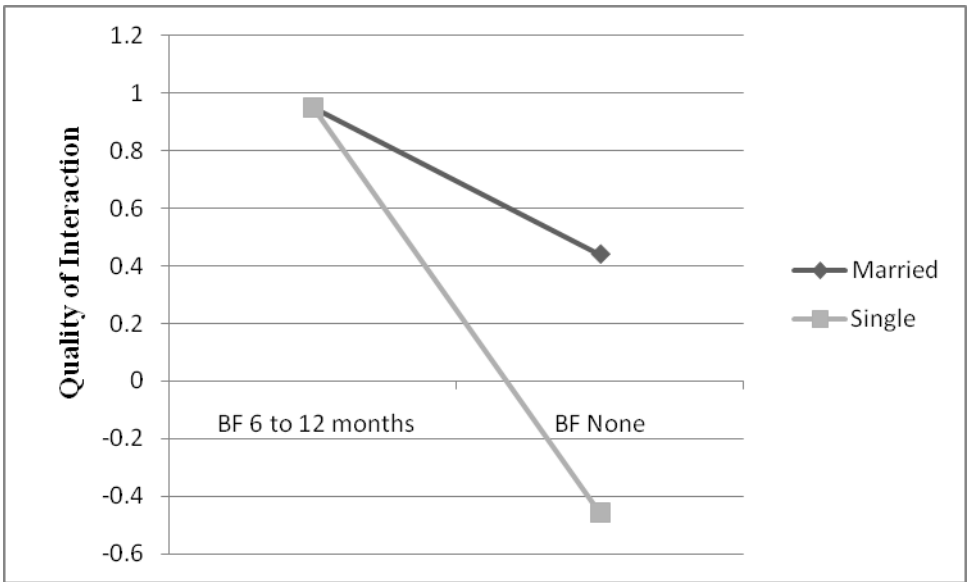
We found three significant interactions between socio-demographic characteristics and breastfeeding for parenting behaviours at one year (see Table 8). As shown in Figure 1, mothers who breastfed for six to twelve months experienced only a small negative effect from low family income on their quality of interaction with their one-year-old child. For mothers who did not breastfeed, however, there was a much greater difference according to income. Non-breastfeeding mothers with high family incomes (i.e. more than £400 per week) had a lower quality of interaction than mothers who breastfed, regardless of their income levels. However, non-breastfeeding mothers with low family incomes (i.e. less than £100 per week) had the lowest scores on the quality of interaction compared to the other groups. Therefore, while breastfeeding appeared to have a positive effect on parenting for all groups, the risks to parenting associated with not breastfeeding appeared to be much greater for those with lower incomes.

**Figure 1. Family Income and Breastfeeding**

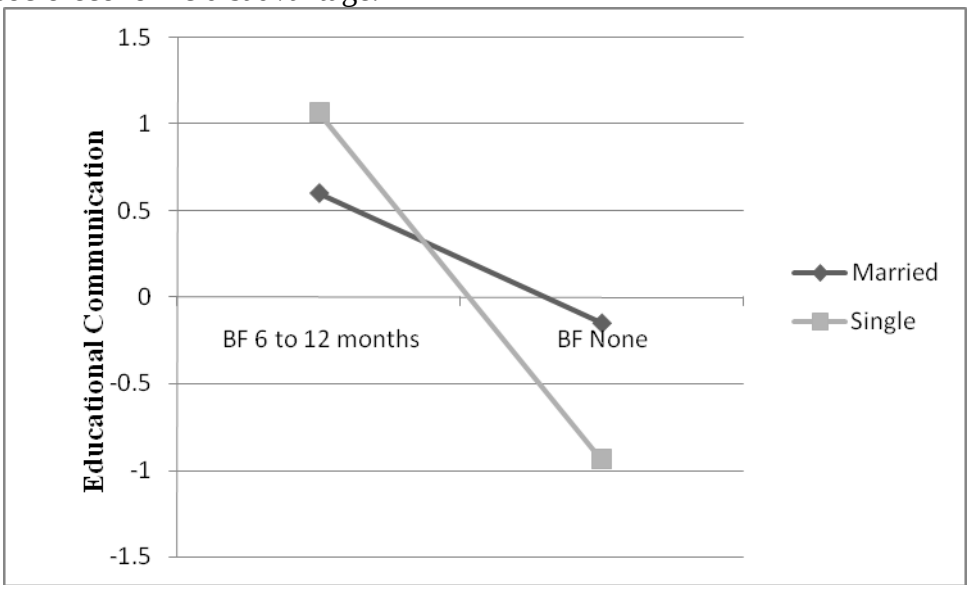


Similar relationships are demonstrated in Figures 2 and 3 for marital status: mothers who breastfed for six to twelve months had the same score on quality of interaction when their child was one year old regardless of their marital status, and single[1] mothers even appeared to be at a slight advantage in terms of educational communication.

**Figures 2 and 3. Marital Status and Breastfeeding**




However, among those who did not breastfeed, parenting behaviours were worse for single than for married mothers, suggesting that the parenting of single mothers may be at greater risk from not breastfeeding compared to married mothers. Breastfeeding therefore appears to have a protective effect on the parenting of those mothers at socio-economic disadvantage.




[1] Single mothers include those who have never married, separated, divorced or been widowed. Married mothers include those who have a partner.

**Table 8. Significant Interactions for Breastfeeding at One Year**

| Quality of Interaction | B(Beta) | |
|---|---|---|
| (Constant) | -.67 | |
| Months of breastfeeding | .53 (.30) | ** |
| Family income | .28 (.15) | ** |
| Months of breastfeeding x income | -.09 (-.20) | + |

** = $p<.01$, + = $p<.1$

| Quality of Interaction | B(Beta) | |
|---|---|---|
| (Constant) | -.46 | |
| Months of breastfeeding | .47 (.26) | *** |
| Marital status | .90 (.15) | *** |
| Months of breastfeeding x marital status | -.30 (-.16) | * |

*** = $p<.001$,* = $p<.05$

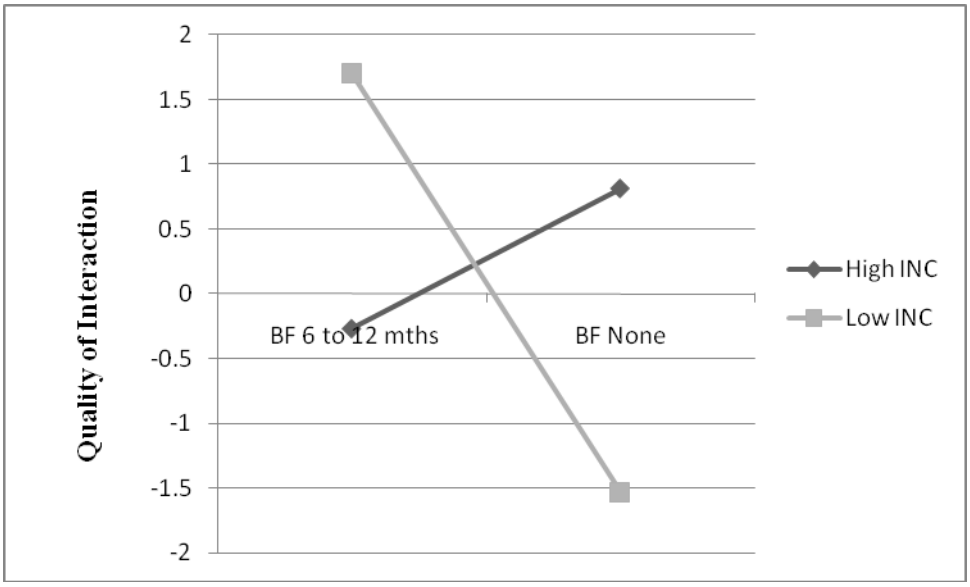
| Educational Communication | B(Beta) | |
|---|---|---|
| (Constant) | -.94 | |
| Months of breastfeeding | .67 (.30) | *** |
| Marital status | .79 (.11) | *** |
| Months of breastfeeding x marital status | -.42 (-.18) | ** |

*** = $p<.001$, ** = $p<.01$

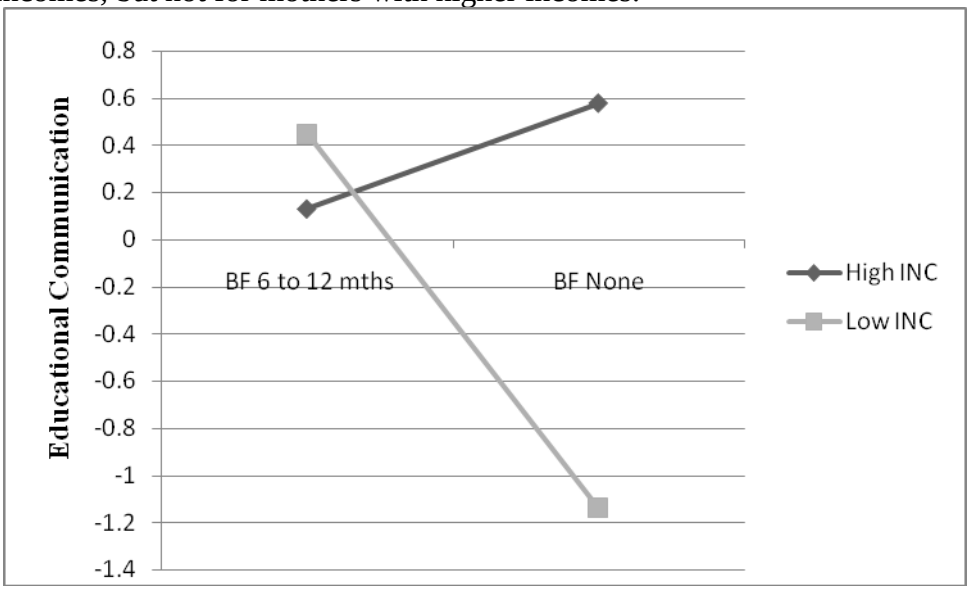
### 6.3.2 Breastfeeding and Parenting Behaviours at Five Years

We found three significant interactions between socio-demographic characteristics and breastfeeding for parenting behaviours at five years (see Table 9). For family income and breastfeeding, mothers with lower incomes who breastfed for six to twelve months had the highest quality of interaction compared to other mothers regardless of their breastfeeding status or income level when their children were five years of age.

**Figures 4 and 5. Family Income and Breastfeeding**

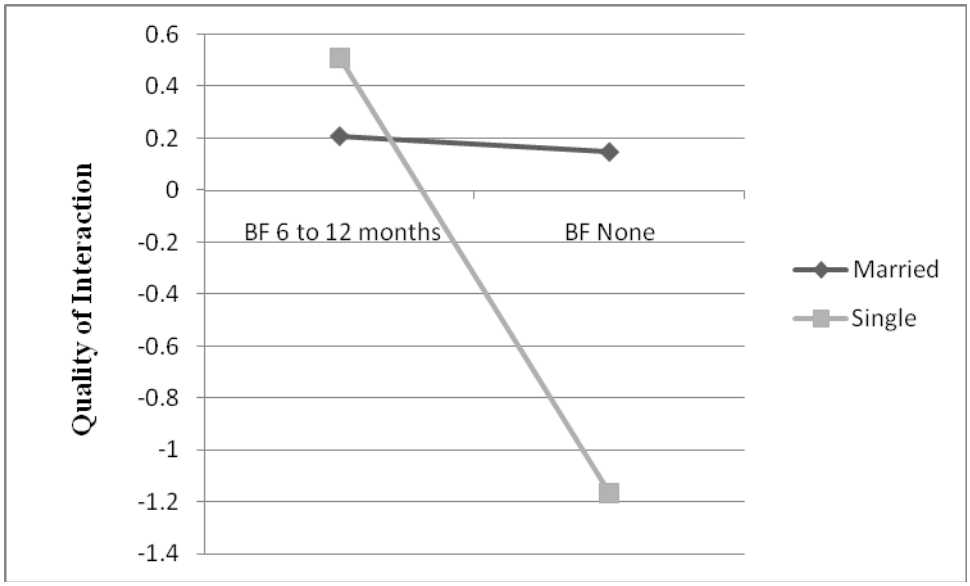



Breastfeeding was also beneficial to the educational communication of lower income mothers when their children were five years old, but the positive association was not evident for higher income mothers. Therefore, breastfeeding appears to have a significant, lasting relationship with parenting behaviours for mothers with lower incomes, but not for mothers with higher incomes.



For marital status, there were similar findings for quality of interaction at five years. For married mothers, there was no relationship between breastfeeding and the quality of interaction when their children were five-years-old. Single mothers who breastfed for six to twelve months, however, displayed a higher quality of interaction with their five-year-old children compared to single mothers who did not breastfeed. Together, these findings highlight the importance of breastfeeding as a potential protective factor for mothers who have greater disadvantage.

**Figure 6. Marital Status and Breastfeeding**



## Table 9. Significant Interactions for Breastfeeding at Five Years

| Quality of Interaction | B(Beta) | |
|---|---|---|
| (Constant) | -2.12 | |
| Months of breastfeeding | 1.44 (.69) | *** |
| Family income | .59 (.26) | *** |
| Months of breastfeeding x income | -.36 (-.72) | *** |

*** = $p<.001$

| Educational Communication | B(Beta) | |
|---|---|---|
| (Constant) | -1.57 | |
| Months of breastfeeding | .70 (.33) | * |
| Family income | .43 (.19) | ** |
| Months of breastfeeding x income | -.17 (-.33) | * |

** = $p<.01$,* = $p<.05$

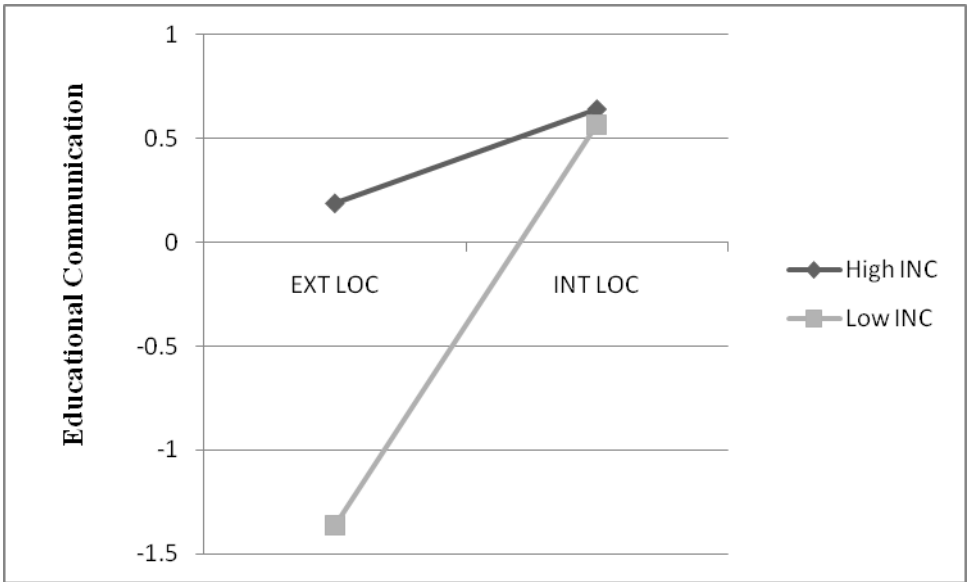
| Quality of Interaction | B(Beta) | |
|---|---|---|
| (Constant) | -1.17 | |
| Months of breastfeeding | .56 (.26) | * |
| Marital status | 1.32 (.18) | *** |
| Months of breastfeeding x marital status | -.54 (-.24) | * |

*** = $p<.001$,* = $p<.05$

### 6.3.3 Maternal Mental Health

There were two significant interactions between maternal mental health and socio-demographic factors (see Table 10). Figure 7 shows that mothers who feel in control of their own lives (i.e. have an internal locus of control -- one standard deviation below the mean) have higher levels of educational communication regardless of their family income. Mothers who have little sense of control, (i.e. have an external locus of control -- one standard deviation above the mean), however, experience a marked decline in their educational communication with declining family income. Thus, although having an internal locus of control had positive benefits for parenting regardless of their family income, the parenting of mothers with lower family incomes fared much worse when they felt that they did not have any control over their own lives.

**Figure 7. Family Income and Locus of Control**



We find that interpersonal sensitivity is more important for the parenting behaviours of single versus married mothers. Married mothers with high interpersonal sensivity (i.e. one standard deviation above the mean) use slightly more educational communication than married mothers with low interpersonal sensitivity (i.e. one standard deviation below the mean). For single mothers, however, the difference in educational communication is more dramatic. There is a sharp decline in educational communication with decreasing interpersonal sensitivity for mothers who are single parents. Together, these findings highlight the protective qualities of positive mental health for the parenting behaviours of mothers with lower socio-demographic characteristics.

**Figure 8. Marital Status and Interpersonal Sensitivity (IMPS)**

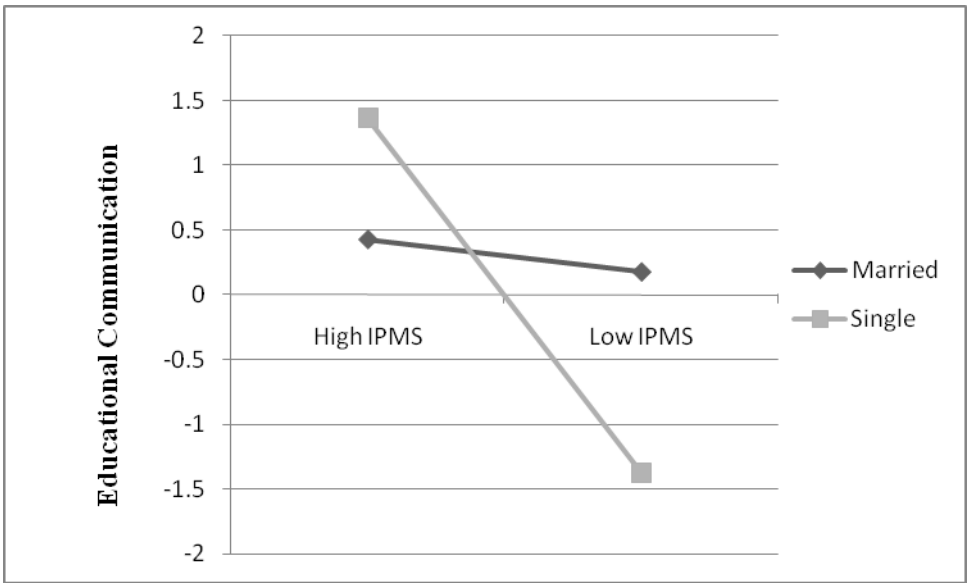


**Table 10. Significant Interactions for Maternal Mental Health**

| Educational Communication at One Year | B(Beta) | |
|---|---|---|
| (Constant) | 1.47 | |
| Locus of control | -.47 (-.31) | ** |
| Family income | -.13 (-.05) | |
| Locus of control x Family income | .07 (.19) | * |

** = $p<.01$,* = $p<.05$

| Educational Communication at One Year | B(Beta) | |
|---|---|---|
| (Constant) | -5.23 | |
| IPMS | .06 (.30) | *** |
| Marital status | 5.06 (.68) | *** |
| IPMS x Marital status | -.05 (-.68) | *** |

*** = $p<.01$

# 7. Discussion

## 7.1 Summary

Within the framework of Belsky's (1984) model, the present study investigates the multiple determinants of parenting, including parental characteristics, child characteristics, and contextual sources of stress and support. Findings were quite similar for both parenting behaviours observed at one year, indicating that breastfeeding, maternal mental health and maternal education were significant predictors of mothers' parenting abilities. Mothers' sensitivity to their child was a particularly important predictor of parenting behaviours in the early years. Social networks were also important for the quality of the mother--infant interaction.

With one exception, family income and marital status were not significant predictors in the full models. However, their significant relationships with other predictors and outcomes in the raw correlations suggest evidence of mediation. In other words, they may influence parenting behaviours indirectly through their relationship with other factors. For example, mothers with higher incomes breastfed their infants for longer, which, in turn, was associated with higher levels of educational communication.

For the most part, we found that child characteristics had little relationship with mothers' parenting behaviours. This suggests that mothers are unlikely to modify the quality of their parenting based on their child's gender or temperament, particularly in a single observational task.

For the age five models, few of the predictors were related to mother--child interactions. This may be because we did not examine more contemporaneous factors when predicting parenting behaviours at five years. Nurturing parenting during the early years may have longer term effects on children's outcomes, particularly for those in disadvantaged circumstances, and, at the very least provides a good foundation for further development. Thus, although our findings demonstrate that a good start is important, they do not illuminate how best to support parenting over the longer term.

Lastly, there was evidence of moderation. For mothers with low family incomes, breastfeeding and positive mental health appeared to have a stronger protective effect on their relationship with their child than was true for other groups. Breastfeeding had a similar protective effect for the parenting behaviours of single/lone mothers. As children grew older, breastfeeding had an important lasting relationship with parenting behaviours for mothers who were single parents and who had lower incomes, but did not appear to have a lasting influence for mothers who were married and had higher incomes. These findings highlight the importance of breastfeeding, particularly for mothers from more disadvantaged backgrounds.

## 7.2 Limitations

A number of limitations must be taken into consideration. Our study explained only a small percentage of the variation in parenting practices, around 10 per cent or less, suggesting that a mother's interactions and teaching behaviours with her child are complex and affected by different factors, many of which we have not been able to

identify in this study. Our study design and method may have also limited the amount of variance explained. First, our choice of predictors may have been a factor. For comparability purposes, we used the same predictors for the one- and five-year models. The inclusion of more contemporaneous predictors measuring characteristics of parents and children in early childhood, however, would have probably improved the R-squared at five years. Second, the R-squared for parent--child observations is likely to be lower compared to studies examining parents' reports of their own parenting. This is because parent characteristics that influence parenting will also be related to the person's own views of their parenting. For instance, mothers who are more depressed will be more likely to view their parenting capabilities negatively. Observed parental behaviours do not share such variance with the predictors and therefore there is less variance to be explained. Third, parent characteristics, such as personality and mental health, may not predict consistent patterns of observable parental behaviours across individuals. Having a specific characteristic does not necessarily mean that one's reactions are similar across different situations and time periods (Johnson, 1997). As Belsky and Barends (2002) point out, parent personality measures will not predict a substantial proportion of the variance for parenting behaviours, especially for those that are measured in single observation. Rather, personality is most likely to predict child-rearing behaviours that are measured across multiple but similar situations. Therefore, we should not expect to explain a large proportion of variation given the outcome of our study -- a parent--child interaction observed twice but four years apart.

Another issue involves the high level of interrelatedness among the predictors. Within the framework of Belsky's model, we examined multiple predictors of parenting. As a result, many of the predictors were correlated with each other, even though some of these relationships were small. Consequently, we found instances of mediation and/or moderation which may further delineate the processes that predict parenting. Breastfeeding, for instance, appears to have long-term, positive associations with parenting for single and lower income mothers, but not for married and higher income mothers. Some of these relationships were not straightforward however. For example, greater interpersonal sensitivity appears to have a negative association with parenting abilities at the extreme end. In addition, some of the potential predictors, such as marital satisfaction, were not included due to their non-significant correlation with the outcomes. With these considerations, our model attempted to encompass multiple predictors while maintaining parsimony in order to encapsulate the factors that may or may not determine parenting behaviours in the early years.

Furthermore, the mother-child interactions were only a subsample of the full ALSPAC study. Analysis revealed that this subsample had higher average levels of family income and maternal education compared to the full sample. As we controlled for family income and maternal education in the models, this does not materially alter the nature of our findings. However, the under-representation of families with lower socio-economic status in our sub-sample may have resulted in generally more conservative estimates of predictive relationships with parenting behaviours for these socio-economic variables than would be true for the sample as a whole.

Lastly, and perhaps more importantly, we cannot determine causality given the nature of our analysis. Rather, our results merely provide some indications of the factors involved in parenting, but we do not know the processes within which these

associations occur. For example, our findings indicate that breastfeeding is associated with better parenting; however, it may be a third factor related to breastfeeding, such as perseverance, that also predicts parenting practices. However, we attempted to control for as many spurious relationships as possible, especially in the one-year models. Yet, such relationships may be more evident in the age five models when we were looking at whether early factors predict change in parenting. Furthermore, we cannot necessarily determine the direction of the effects. For example, one may argue that mothers with better parenting skills may be more likely to breastfeed for longer. Nonetheless, most of our predictors were measured when the mother was pregnant, which provides some assurance on the possible causal direction. On a more substantive level, one may argue that better parenting is not something which can be measured at a particular time point -- as though capturing a snapshot of parenting. Rather, parenting is a continual process, one in which parents modify their behaviours based on their life circumstances, the development of their child, or their particular surroundings or feelings at a given moment in time. Nonetheless, we found that within our picture of mother--child interactions, taken in the form of the TIM, we were able to find significant predictors. Therefore, taken together, our use of multiple indicators measured at prior time points to predict an observed mother--child interaction provides some justification of our stated research findings and their implications for policy.

## 7.3 Policy Implications

The consistency of our findings points to several areas which may be targeted for early parenting interventions including education, breastfeeding, maternal mental health and social networks.

### 7.3.1 Education

Our report finds that maternal education is associated with better parenting, even controlling for other socio-demographic and mother characteristics. However we cannot necessarily ascertain whether the effect is due to education itself or to the processes – intelligence or ambition, perhaps -- which lead one to obtain a better education. This finding nevertheless underlines the importance of efforts to ensure that every child and young person is given the personalised support they need to flourish at school, with opportunities to continue learning throughout their lives. Furthermore, the finding highlights the importance of raising young people's aspirations regarding their learning, alongside measures to encourage more time spent in education.

### 7.3.2 Breastfeeding

Our findings also highlight the need for the continuation and perhaps escalation of support for breastfeeding. The most recent *Infant Feeding Survey* (Bolling, Grant, Hamlyn, and Thornton, 2007) indicates that rates of initial breastfeeding in 2005 were 78 per cent in England, 70 per cent in Scotland, 67 per cent in Wales, and 63 per cent in Northern Ireland. This fell to 48 per cent of all mothers in the UK by the time the baby was six weeks old, and 25 per cent at six months. While the current recommendation is that mothers should breastfeed exclusively (i.e. not mixing breast and formula feeding) for the first six months, less than 1 per cent were still breastfeeding exclusively at six months. Prevalence of breastfeeding was highest

among mothers from managerial and professional occupations, those with the highest education levels, those aged 30 or over, and those from minority ethnic groups.

Information currently given to mothers focuses on the health benefits for mother and baby and the way in which breastfeeding can help the two to bond. However, finding ways to communicate the benefits for the mother's relationship with and ability to parent the child may also be important as an encouragement to mothers. In the survey referred to above (Bolling *et al*., 2007), 79 per cent of mothers reported being advised during their pregnancy about the health benefits of breastfeeding, with midwives the most common sources of such advice. Those who had received advice were more likely to intend to breastfeed and to initiate breastfeeding. Again, mothers from managerial and professional occupations were the most likely to be aware of the benefits of breastfeeding.

This tendency, together with our finding that not breastfeeding has the greatest negative association for mothers of infants with lower socio-economic characteristics, implies a need to target mothers from more disadvantaged backgrounds. This is further supported by our finding that breastfeeding had an important lasting relationship with the parenting behaviours of single and lower income mothers. Breastfeeding is often difficult for new mothers, and in some communities it may be such a rare practice that mothers lack role models or the support of peers. In addition, Bolling *et al*. (2007) found that while reasons for stopping breastfeeding included insufficient milk, rejection of the breast and pain or discomfort in the first two weeks, in later months, return to work became a factor. It should be noted that if a mother works on a short-term casual basis or is an agency worker, she may not qualify for maternity leave, and if she earns less than an average of £90 per week, she does not qualify for Statutory Maternity Pay. This could act as an incentive to return to work as soon as possible and could make it less likely that breastfeeding will continue. New mothers, particularly in deprived communities, may therefore require more than information leaflets. Rather, interventions that offer early and ongoing support and encouragement to manage breastfeeding – including around the practicalities of employment – may be needed: this may come from financial support in order to enable a delay in return to work and/or workplace nurseries where mothers can visit and breastfeed their babies during the day. Meanwhile, campaigns such as "Be a star", run by Blackpool Primary Care Trust (PCT) and North Lancashire Teaching PCT, to provide role models for young mothers (www.beastar.org.uk) may be a way of raising the profile of the issue.

### 7.3.3 Maternal Mental Health

The association between maternal sensitivity and parenting skills, which is significant when examining the parenting of both babies and school-age children, underlines the importance of mothers' personal characteristics and of training for frontline staff. These may be the health practitioners with whom new mothers have contact, or parenting or early-years workers. As the consequences of low sensitivity are also more severe for single/lone mothers, this highlights the need to target these parents. Parenting programmes, for example, that focus on skills such as awareness of the needs and feelings of others, including the child, may be particularly useful, especially for those mothers without the support of a partner.

While it is generally accepted that a mother's state of health can affect her child, the finding that new mothers with post-natal depression have less educational communication with their babies strengthens the evidence base by providing a link with parenting ability and, indirectly, with the child's future development. Providing the right level of support is likely to mean ensuring that staff in frontline services go beyond a superficial enquiry into a mother's well-being, and may also entail increased visibility and accessibility of support, bearing in mind that mothers may find it hard to ask for or admit that they need help.

Since the parenting of lower income mothers is more vulnerable when they feel less control over their lives, targeting resources at these mothers may be particularly beneficial. The recently proposed expansion of Family Nurse Partnerships, which work with some of the most vulnerable families, is therefore welcome. Midwives may be well placed to identify mothers in need of support. The recent report on the Child and Adolescent Mental Health Services (CAMHS Review, 2008) finds limited evidence on midwives' role in relation to mental health care at present, but recognises that midwives are involved in developing mental health support for parents through some Sure Start local partnerships, and in some areas are working in children's centres to deliver post-natal clinics. The CAMHS report also supports the recommendation made in the review of the role of health visitors (Department of Health, 2007) that early intervention, prevention and health promotion should be priority areas for health visitors. It also recognises that some children's centres are providing mental health services. Whereas such services might currently be focused on children, our findings indicate the importance of including parental mental health in a consideration of the child's well-being.

### 7.3.4 Social Networks

Our results indicating that social networks have a positive association with improved parenting for all mothers, even controlling for socio-demographic characteristics, appear to have implications on at least three levels. At a national level, the Department of Communities and Local Government already has a strategic objective to develop communities that are cohesive, active and resilient to extremism. Efforts to achieve this objective currently focus on factors such as increasing people's sense of belonging to their neighbourhood and helping those from different backgrounds to interact. Our results imply that building social capital through finding more ways for people to develop social networks could also be beneficial for family life within those communities, as well as possibly contributing to meeting the strategic objective.

At a community level, the finding implies that the networking and social interactions that go on between parents in children's centres, early-years settings, community groups and many other community venues, such as libraries, and health and leisure centres, are of great value. Furthermore, it suggests that finding ways to facilitate such networking and overcome the isolation faced by some parents could also bring benefits. For example, since extended schools are obliged to make their facilities available to the community, some are developing a "community room" for use by parents. The finding also emphasises the need for community organisations to be family-friendly, so that parents do not feel open to criticism for bringing their children with them, and suggests that all communities, including areas where new properties are being built, should have safe places for people to meet. The provision of childcare may also be important to allow mothers, particularly lone mothers, to go out without

their children on occasion. These factors may have implications for planning at the area level, for example, by Local Strategic Partnerships as they plan their Sustainable Community Strategies.

At an individual level, the finding highlights the importance for those who work with parents of encouraging them to take up opportunities to see their friends and families and to meet other people. Health visitors, midwives and nurses working in Family Nurse Partnerships, for example, may be aware of local community groups or be able to foster contacts with other new parents. It also underlines the importance of programmes like SEAL that are working in schools to help children and young people develop interpersonal skills that will be valuable both in the present and the future.

## 7.4 Conclusions

Our findings indicate that both who you are and what you do are important in terms of parenting -- personal *characteristics* such as interpersonal sensitivity and education, and *behaviours* such as breastfeeding are significant predictors. Socio-demographics perhaps have less influence than we might expect (only education has independent significance) -- the other socio-demographic factors are mediated by processes such as social networks and post-natal depression. Given this, we can see that there is room for intervention – "what you do" and even personal characteristics are amenable to support if appropriately and sensitively offered.

We would therefore recommend that maternal mental health, breastfeeding, and social networks form the focus of intervention efforts to boost parenting capabilities. This may have substantial benefits for mothers in more disadvantaged communities who are likely not only to have lower levels of these factors, but whose parenting seems to be more strongly influenced by such factors both in the short and long term.

The greater importance for the parenting of single/lone mothers and mothers on low incomes of factors such as breastfeeding is just one expression of the high degree of interrelatedness between the potential influences on parenting we have examined. Given this interrelatedness, we would further suggest that interventions focus on multiple dimensions. For example, efforts to support maternal well-being may be coordinated to extend social networks and encourage breastfeeding.

The best time to target mothers is most likely during pregnancy, as there is greater access due to antenatal appointments. Mothers' mental health at this early stage may also affect other factors, such as their feelings concerning breastfeeding. Otherwise, interventions should begin as early as possible. Considering the importance of parenting for children's development, investing in parents in the early years can pay dividends that extend to the school years and beyond.

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# 9. Appendix

## 9.1 Mother--Child Interactions

*Quality of interaction* was calculated first by recoding warmth and motivation so that high scores represented high warmth and high motivation. As verbal communication and non-verbal communication (1 to 3) were recorded on a different scale from warmth and motivation (1 to 5), standardised scores were calculated for all four variables. The standardised scores were then summed to create the aggregated total score.

*Educational communication* was calculated first by recoding variables so that high scores represented better communication. Standardised scores were then calculated for
labelling, long elaboration and involving the child, and were summed to create the aggregated total score. We did not include short elaboration, concept structuring and linking, since these variables were not related to our predictors.

## 9.2 Mother Characteristics

*Months of breastfeeding* was measured from 36 months after birth. Four separate variables were used: 0 = none, 1 = breastfeeding up to 3 months, 2 = breastfeeding up to 6 months, and 3 = breastfeeding 6 to 12 months.

*Attitudes to breastfeeding* were measured during pregnancy and included seven statements such as “Breastfeeding prevents a mother from having the freedom to do what she wants” and “Breastfeeding gives the mother a special relationship with her baby”. Responses were coded (strongly agree = 1; strongly disagree = 5) so that lower values represent more negative attitudes about breastfeeding.

*Locus of control* was administered during pregnancy between 14 and 36 weeks. Locus of control was intended to measure how much mothers feel that their life is controlled by internal factors (i.e. their own abilities and effort) versus external factors (i.e. luck and chance). Internal locus of control is associated with more positive mental health. Questions included “Do you believe that whether or not people like you depends on how you act?” and “Are you often blamed for things that just aren't your fault?” Responses to 12 questions (yes = 1 or no = 2) were summed so that lower scores represent lower feelings of control.

*Attitudes about child and childcare* were administered at 8 months. Mothers indicated how often they agreed with the following statements: “I enjoy this child”, “I feel confident with the child”, “I take pleasure in seeing the child develop”, ”This child has made me more fulfilled”, “I would have preferred not to have had this child when we did”, “I hate the mess surrounding the child”, “I hate it when the child cries” and “I feel I have no time alone”. Items were recoded so that higher scores represent more positive attitudes about the child and childcare (exact feeling = 3; often feels = 2; sometimes feels = 1; and never feels = 0). This measure is similar to the parenting measure used by Waylen and Stewart-Brown (2008).

*Memories of care from own mother* measure a mother’s perceptions of her relationship with her mother during childhood. This scale is from the Parental

Bonding Instrument (Parker, Tupling and Brown, 1979) which was adapted by Gamsa (1987). The questionnaire was administered during pregnancy between 14 and 30 weeks' gestation, and for those enrolling in the study after 30 weeks' gestation, it was given four months after childbirth. Respondents were asked: "We would like to know how you and your mother got on when you were a child. This will probably have varied over your childhood and in different situations but we would like a general impression". Respondents were asked a total of 22 questions to indicate how frequently a statement was true of their mother: never = 1, sometimes = 2 and usually = 3. Questions included "My mother spoke to me with a warm and friendly voice", "My mother made me feel I wasn't wanted", "My mother appeared to understand my problems and worries", "My mother tried to control what I did", and "My mother let me go out as often as I wanted". The total was summed and questions were recoded so that a higher score represents lower reports of maternal care.

*Interpersonal maternal sensitivity* was administered between 14 and 30 weeks' gestation, and for those enrolling in the study after 30 weeks' gestation, it was given four months after childbirth. The 36-item questionnaire has five sub-scales including interpersonal awareness, need for approval, separation anxiety, timidity and fragile inner self (Boyce and Parker, 1989). The respondent indicated whether the description provided in each item was very like me = 1, quite like me = 2, quite unlike me = 3 or very unlike me = 4. Questions included: "I feel insecure when I say goodbye to people", "I am always aware of how other people feel" and "I will do something I don't want to do rather than offend or upset someone". The total was summed and questions were recoded so that a higher score represents higher neuroticism.

*Edinburgh Postnatal Depression Scale* was developed by Cox *et al*. (1987). The 10-item scale was administered between 14 and 36 weeks' gestation, and for those enrolling in the study after 36 weeks' gestation, it was given four months after childbirth. Items measured how often the respondent had the following symptoms in the past week including: "I have been so unhappy that I have had difficulty sleeping", "I have felt sad or miserable" and "I have been so unhappy that I have been crying". Responses were re-coded positively so that higher scores represent high depression, yes mostly = 3; yes sometimes = 2; not very often = 1; and never = 0.

*Maternal age* was divided into four age categories: 1 = 14 to 19, 2 = 20 to 24, 3 = 25 to 29 and 4 = >30.

*Maternal education* is CSE/none = 1, Vocational = 2, O level= 3, A level = 4, Degree = 5.

*First child* is a dummy variable where 1 = yes, 0 = no.

*Number of siblings* is the total number of younger or older siblings.

## 9.3 Child Characteristics

*Denver Development Score* included eight questions from the Denver Developmental Screening Test (Frankenburg *et al*.,1992). The questions represented clinical early indicators of development, for example:"Baby startles when hears sound." Responses

were coded as follows: often = 1, sometimes = 2, rarely = 3 and never = 4, thus higher scores represent better development.

*Child demand and difficulty* were completed by the mothers at four weeks after child's birth and up to 18 months. Questions were taken from a sub-section of the Denver Development Instrument. Scores were taken from a selection of negative traits by calculating the sum of scores for mothers' rating of whether their child was grizzly, fretful, demanding, angry, withdrawn, stubborn and unresponsive. Responses were: very like = 1, like = 2, can't say = 3, unlike = 4 and very unlike = 5.

*Birth weight* was the clinical body mass index taken by medical staff at childbirth.

*Gender of child* was coded as male = 1 and female = 2.

## 9.4 Stress and Support

*Marital status* was measured between 14 and 36 weeks' gestation or four months after childbirth. Responses were coded so that 1 = married/had partner and 0 = was single, separated, divorced or widowed.

*Social network score* was calculated as the sum of 20 questions measured between 14 and 36 weeks' gestation or four months after childbirth. Questions included:"How many of your relatives and your partner's relatives do you see at least twice a year?", "During the last month, how many times did you get together with one or more friends?", "If I feel tired I can rely on my partner to take over" and "If all else fails I know the state will support and assist me". Responses were coded so that higher scores represented a greater social network.

*Family income* was calculated as weekly total family income where 1 = < £100, 2 = £100 to £199, 3 = £200 to £299, 4 = £300 to £399, and 5 = $\geq$ £400.

*Marital satisfaction* was calculated from the sum of seven questions measured between 14 and 36 weeks' gestation or four months after childbirth. Questions included:"Are you satisfied about handling finances with your partner?" and "How are you feeling about sex with your partner?" Responses were coded: very satisfied = 3, satisfied = 2, dissatisfied = 1, very dissatisfied = 0, thus a higher score represented lower marital satisfaction.

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# Nurturing parenting capability: the early years

**Leslie Morrison Gutman, John Brown, Rodie Akerman**

This report examines parenting from babyhood to early childhood. We first consider what previous studies have revealed about the nature of good parenting and the determinants of parenting in the early years. Using data from the Avon Longitudinal Study of Parents and Children we then set out to establish whether the individual characteristics of mothers and children, and factors such as mothers' social networks and marital relations, predict certain types of parenting behaviours. We do this by examining how 1,136 mothers interacted with their child when asked to share a picture book with them. This observation exercise, which measured parental warmth and teaching behaviours, took place when the child was aged one, then again at age five. Lastly, we address the implications of our findings for policy and practice.

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